**Macroeconomic theories of investment and development of a New Economic Theory**

**Seeraj Mohamed[[1]](#footnote-1)**

Deputy Director: Economics, Parliamentary Budget Office

PO Box 15, Cape Town, 8000, Republic of South Africa

**Abstract**

In response to Jacobs (2015) challenge to develop a ‘New Economic Theory’, this paper examines different perspectives in macroeconomic theory to begin a discussion of what aspects of current theory could be useful to take forward into the discussion and point towards what should be left behind. The paper will focus on the important area of investment in this discussion of macroeconomics because the nature of accumulation in a society shapes the economic path of that society. The attainment of the universally recognised human values, such as economic rights, inclusiveness and sustainability that Jacobs (ibid) says the New Economic Theory should be based upon is shaped by a path-dependent process through which households and businesses reproduce themselves. This paper provides a survey of macroeconomic investment theory and models to show that key aspects inherent in heterodox macroeconomic theory are suited to the development of a New Economic Theory.

**Key words:**

* Macroeconomic theory
* Neoclassical economics
* Heterodox economics
* Investment
* Financialisation

**JEL Classification:** E02, E12, E22, E44

# Introduction

Jacobs (2015) says “The objective of New Economic Theory (NET) is to formulate the theoretical and practical knowledge required to maximize economic security, human welfare and individual well-being of all humanity in a manner consistent with uni­versal human rights, cultural diversity and civilizational values (p.144).” He criticizes mainstream economic theory for its narrowness and clinging to outmoded ways of thought but he is aware is that one cannot reject all of existing economic thinking. He says, “This harsh assessment is not intended as a wholesale rejection of existing economic thought … the purpose is to establish the need for new thinking outside the boundaries of prevailing economic theory and to point to some essential elements and likely lines of its future development (ibid., p.p. 140-141). I agree with this view. The development of a New Economic Theory will occur through understanding the strengths and weaknesses of existing economic thinking and building on the strengths and learning from the weaknesses. A problem with shifting towards a new economic theory is that mainstream economics is so dominant and its habits of thinking so entrenched that it is not only difficult to think outside of the mainstream framework but it is also easy to forget that there are useful alternative economics perspectives that could inform a new economic paradigm.

In response to Jacobs (2015) challenge, this paper examines different perspectives in macroeconomic theory to begin a discussion of what could be useful to take forward into the discussion and point towards what should be left behind. The paper will focus on the important area of investment in this discussion of macroeconomics because the nature of accumulation in a society shapes the economic path of that society. The attainment of the universally recognised human values, such as economic rights, inclusiveness and sustainability that Jacobs (ibid) says the New Economic Theory should be based upon is shaped by a path-dependent process through which households and businesses reproduce themselves.

This paper provides a survey of macroeconomic investment theory and models to show that key aspects inherent in heterodox macroeconomic theory are suited to the development of a New Economic Theory. The paper begins with a discussion of mainstream macroeconomic theory and then discusses heterodox economic theory. The main differences between the mainstream and heterodox approaches focused on in this paper are related to the way in which time and institutions are treated in these economics perspectives. The main contention is that mainstream economic theory too often ignores institutions and is ahistorical. It cannot deal with path-dependence in the process of reproduction and accumulation in society. The alternative approach favoured here is to consider institutions and time as related. In order to understand an economy one has to take into account how institutions function at specific historical periods. Mainstream economics generally abstracts from time and institutions whereas the heterodox economics alternatives discussed in this paper include consideration of institutions, their history and how they operate at a specific time. The mainstream approach seems able to develop general theories capable of explaining economic outcomes across time and space. Heterodox economics, on the other hand, steers one towards an approach that requires a case by case analysis that takes time, space and institutions into account.

The focus on specific time periods and spaces does not mean that heterodox economic theory cannot provide a general framework for economic analysis. In fact it sets a good framework for a New Economic Theory that would benefit from multidisciplinary interaction to understand dynamic, complex systems. Eichner (1978) argues that, “post-Keynesian theory is concerned with the dynamic behaviour of actual economic systems. It is not limited, as neoclassical theory is, to the analysis of resource allocation under hypothetical market conditions”. Therefore, post-Keynesian economics can take into account different forms of allocation and competitive structures in an economy and attempt to be more consistent with knowledge derived from other social sciences. I would venture to say it is an aspect of economic and investment theory crucial for understanding accumulation and economic development on a case by case basis that has been neglected by mainstream economics.

Economies and markets are often treated by mainstream economists as if they are fair and neutral. The world views of dominant economic agents, such as those in large multinational corporations and financial institutions, including their attitudes towards racial and gender discrimination, religious beliefs, environmental issues, economic security are too often absent even when income distribution is considered and reference to classes are made in economic models. The relevance of post-Keynesian and heterodox economic analysis rather than mainstream economics to take into account the “dynamic behaviour of actual economic systems” (as Eichner puts it) when it takes into account allocation and competitive structures is explored in this paper. It shows that there is ‘path dependence’ shaped by a history of institutions and affected by the beliefs and biases of people running those institutions. Ultimately, the shifting world views of economic agents and how to channel, influence and regulate economies towards positive outcomes and universally recognised human values should be at the heart of a New Economic Theory and the economic analysis that informs this theory. It is how I endeavour to understand the macroeconomic problems related to investment.

# Mainstream macroeconomic investment models

There has been development over time of mainstream investment models where a self-conscious attempt was made to consider time, uncertainty and expectations more seriously. Over time, other aspects of mainstream models have shifted particularly with the New Keynesian variants where Keynesian concerns, such as sources of funds, are considered in these models. However, as is shown below all variants of these mainstream models do not adequately take account of uncertainty. Unfortunately, even modern mainstream investment models that drop assumptions about irreversibility of investment do not adequately deal with uncertainty. The implication is that expectation formation and the human psychology that shapes decisions in the face of uncertainty, including biases that may help explain persistent (multi-generational) economic phenomenon are inadequately addressed. These models are ahistorical in that they do not take account of historical development of institutions that shape investment decisions and some seem to be applicable to any historical time period.

## Accelerator Models

According to Berndt (1991), the earliest investment models of aggregate investment behavior is the accelerator model, which was developed by J.M. Clark in 1917 to explain the volatility of investment expenditures. Clark’s (1923) theory on the acceleration principle that investment levels can fluctuate with consumer demand anticipated Keynes’s theory on investment and business cycles. Accelerator models are generally considered “Keynesian” due to their concern with demand and the role of expectations. Accelerator models have drawn on Keynes important insight into the role of expectations and convention where there is a link between expectation of profits in the next period when there is output growth in the current and earlier periods (Mathews, 1959). Keynes view was that in an uncertain world convention shaped economic thinking. The accelerator model draws on this insight with adjustment to capital stock through investment influenced by profit expectations based on performance of output growth.

The accelerator model assumes a fixed capital to output ratio, which implies that prices, wages, tax rates and interest rates do not have a direct impact on investments in capital stock but could have indirect impacts (Berndt, 1992, p.233). Berndt (ibid.) describes the ‘naïve accelerator’ model as having not only a fixed capital to output ratio but also instantaneous adjustment of capital where the level of capital stock is optimally adjusted in each time period. Flexible accelerator models were developed by Goodwin (1948), Chenery (1952) and Koyck (1954) to address the unrealistic instantaneous adjustment of capital stock in the ‘naïve accelerator’ model. In these flexible accelerator models adjustment of capital stock is assumed to occur over several time periods.

While the accelerator models are considered Keynesian because they take into account expectations and uncertainty, they fall short because they do not include consideration of how expectations may change. Keynes’s (1936) discussion of convention noted that during periods of instability, such as financial crashes, economic variables current and past performance is not a good indicator of future performance. Uncertainty increases and convention breaks down. The accelerator models do not explicitly take into account how changes in expectation formation may affect investment decisions.

The assumption that the capital to output ratio is fixed in the accelerator model means that there can be no substitution of factors of production. Neoclassical economists, therefore, have a different criticism of the accelerator models. They argue that the primary focus of investment models should be cost related variables, such as prices, wages, tax rates and interest rates. However, empirical studies find that that cost -related variables are less significant than non-price variables, such as capacity utilization (Chirinko 1993, Clark 1979).

## Neoclassical investment model

Jorgenson’s (1963) neoclassical model of investment tackles the problem that the accelerator models do not head on. The Jorgenson model of investment takes account of cost-related variables by making the explicit basis of the neoclassical investment model optimization behavior that links the desired level of capital stock to interest rates, taxes and outputs. Investment can be thought of as the optimal adjustment of capital stock in this model. Within this framework, investors achieve the optimal level of capital stock by maximizing discounted profits over infinite time periods. However, since capital equipment is durable, firms could find themselves in a situation where they cannot sell unwanted capital equipment.

Berndt (p.p243-244) explains that the simplifying assumption of a perfect market for used capital goods and all inputs and outputs is a way to get around the difficulties of the present value optimization problem when taking into account uncertainties associated with lifetime of capital equipment and input prices and demand for outputs in the future. This assumption allowed Jorgenson to see firms as renting capital to themselves during each period and the rental price was referred to as the user cost of capital. Jorgenson also assumed that adjustment from current to desired levels of capital stock were instantaneous and costless. Therefore, in the neoclassical model of investment there is no need to consider expectations and there is no uncertainty about the future because investors are concerned about optimizing in only one period,

Berndt (p.243) says that a major weakness of the neoclassical investment model is that it does not rationalize moves towards optimal capital stock. Attempts to introduce uncertainty into Jorgensonian models by including ad-hoc lags transformed Jorgenson’s neoclassical model into a modified accelerator model. Gezici (2007, p.28) says that investment came to be conceived as adjustment to equilibrium in these models as their emphasis on explicit adjustment processes increased. The result of this development of neoclassical investment models is that the optimal amount of investment became a decision about the optimal speed of adjustment. Attempts to more rigourously introduce time lags into investment models maintained the assumptions introduced by Jorgenson and, therefore, were also not capable of addressing how expectations and uncertainty affect investment decisions.

## Tobin’s Q models

Tobin (1969) developed an investment model where net investment depends on q, which is defined as the ratio of the market value of a business’ capital assets to its replacement value. The q model of investment provides a way to consider future expectations about a firm’s performance by considering how the market values a firm.

An important critique of q theory is that it assumes efficient markets when even a number of mainstream economic studies have found that financial market valuation of the firm is not a reliable measure of fundamentals of the firm. Summers (1986) and Malkiel (2003) provide reviews of literature assessing the efficient market assumption and find widespread recognition that some of the events in financial markets, such as speculative bubbles, excess volatility and mean reversion, undermine the efficient market hypothesis. Schiller (2003) provides a good review of behavioural finance critiques of the efficient market hypothesis, which shows that actual behavior of economic agents differ from the behavior of rational agents assumed to exist by proponents of the efficient market hypothesis.

## Euler Equation models

Euler Equation models represent developments to address uncertainty through explicitly including dynamic elements and expectations in the optimization problem. Euler equation models use dynamic optimization under uncertainty, due to cost adjustments, to attempt to show a relation between investment rates over different periods. When a firm’s optimization problem is considered, the intuition of the Euler equation investment model is that the marginal cost of current period investment, which includes the cost of investment goods and adjustment costs, is equal to the discounted marginal cost of postponing that investment until the next period. Therefore, firms are faced with comparing the net benefits of investing today relative to investing tomorrow.

The Euler equation investment models depend on some important assumptions, which have been challenged by non-mainstream economists. One of these important assumptions is irreversibility of investment. This assumption allows an infinite number of future periods to be condensed into a single future period. Therefore, the Euler equation model says that a firm will be indifferent to a current period increase in capital stock only if there is an equal decrease in that firm’s capital stock during the next period. This assumption of irreversibility may occur even where sunk, past investment costs are included to take account of adjustment costs in the model’s specification (Chirinko, 1993).

Another important assumption is that economic agents have rational expectations. The assumption of rational expectations means that while the model’s equation is written with an expectations operator, this operator may be eliminated through assuming rational expectations. Therefore, the Euler equation investment models have variables for future periods included through the expectations operator they do not actually tackle the problem of expectations and uncertainty.

## New-Keynesian financing constraints models

Berndt (1992, p.p. 239-240) describes investment models concerned with the impact of the availability of funds on investment behavior as ‘cash flow’ models. These cash flow models, which have internal funds determining investment, are different to the accelerator models (discussed above) where investment depends on the level of output. Since the available internal funds in a period depend on the profits of a firm in that period, cash flow models specify adjustment to optimal level of capital stock as determined by the level of profitability of a firm. Grunfeld (1960) used market value of a firm as a proxy for expected profits, implying that investment decisions are influenced by external valuation of a firm. Berndt (ibid.) says that indications of important imperfections in capital markets cause firms to prefer internal funds rather than the risk associated with increased debt leverage. Berndt (ibid.) discusses a hierarchy of choices facing a firm that wants to invest with available internal cash as the least risky and, therefore, most favoured source of finance for investment. Firms that require more than available internal funds will then choose debt that is preferred to selling equity in a firm to finance investment.[[2]](#footnote-2) Cash flow (measured as a firm’s profits after taxes plus depreciation allowances less dividends paid to shareholders) is used as a variable to indicate internal funds available for investment. More availability of cash flow may indicate the level of profitability, and therefore the likelihood that a firm will attract external funds.

The dominant mainstream theoretical perspective was represented by Modigliani and Miller (1958) who said that the type of financing used by a firm has no influence on the value of that firm, provided there is an efficient market without taxes, bankruptcy costs and asymmetric information. While cash flow investment models, and even other mainstream investment models, included variables representing liquidity of firms facing investment decisions, these models and the empirical work related to investment may not have had broad theoretical support in mainstream economics. It seems that ideas of the cash flow model had a resurgence in the 1980s when New Keynesian economists challenged key assumptions of neoclassical economic by highlighting market imperfections due to asymmetric information and imperfect contracts.

The inclusion of the cash flow variable in New Keynesian investment models indicates a scarcity of external sources of finance for investment (Fazzari, Hubbard and Peterson, 1988). Inclusion of cash flow in investment models is different from the older cash flow models where investors had a hierarchy of preferences with regard to financing sources. Instead, for New Keynesian investment models the scarcity of finance for investment is due to asymmetric information in credit markets. In these imperfect credit markets lenders have difficulty distinguishing between investors who are borrowing for high risk and low risk projects (adverse selection problem). Lenders may also be unable to ensure that funds lent for low risk projects are not used for high risk projects (moral hazard problem) (Stiglitz and Weiss, 1981). The consequence of these asymmetric information problems is that investors borrowing for low risk projects may have to pay higher interest rates to make up for the possibility of default by high risk projects. A further consequence may be that lenders may choose to ration credit and demand higher amounts of collateral. In short, borrowers face a higher cost of capital.

There are criticisms of cash flow as a variable indicating scarcity of finance due to market imperfections (Gezici, 2007). Gezici (ibid., p.36) says, “Critics of the use of the cash flow variable as a proxy for internal funds note that since cash flow might be closely related to operating profits and therefore to the marginal product of capital, it may not be picking up the desired liquidity effect but may be proxying either an accelerator effect or information about future investment opportunities not captured by variables of fundamentals.” An alternative to cash flow as a proxy for scarcity of finance in some New Keynesian literature on investment is net worth of a firm, which is taken to indicate the attractiveness of a firm to lenders. Leverage or interest coverage variables are used as proxies for net worth (Hubbard et al, 1992).

The use of a finance constraint variable with Euler equations has been used by some New Keynesian economists to model investment.[[3]](#footnote-3) However, the unrealistic assumptions of the Euler equation models of investment affect the reliability of this approach. For example, the assumption that investments are reversible that allows the Euler equation models to have only two periods is a serious problem. It constrains the model to investors that have financing constraints in one of the two periods of the model and ignores firms that may have financing constraints over a number of periods. The model is limited to examining only marginal changes so cannot examine non-marginal changes, such as the possibility that a firm that has a finance constraint scraps plans to invest or postpones investment to a later period.

## Uncertainty and Option Value Models

An important critique of the neoclassical and New Keynesian models outlines above is that they do not adequately deal with uncertainty and rely on assumptions of rational expectations and reversibility of investment. A relatively recent development in the literature that attempts to deal with expectations and irreversibility of fixed investment is option value theory (Dixit and Pyndick,1994). This approach uses an analogy from financial markets where options are traded. Investors can never have complete information but may choose to wait for more information before committing to an irreversible investment. Dixit and Pindyck (1994) say:

A firm with an opportunity to invest is holding an "option" analogous to a financial call option-it has the right but not the obligation to buy an asset at some future time of its choosing. When a firm makes an irreversible investment expenditure, it exercises, or "kills," its option to invest. It gives up the possibility of waiting for new information to arrive that might affect the desirability or timing of the expenditure; it cannot disinvest should market conditions change adversely. This lost option value is an opportunity cost that must be included as part of the cost of the investment (p.3).

The treatment of uncertainty is far from adequate in option value theory. Gezici (2007), says:

In the option value models, uncertainty is conceived as risk and its role is reduced to an addition to the discount factor in net present value calculations. The risk premium raises the cost of capital by a fixed amount. In this setting, the risk premium is predictable with a certain probability distribution known by the decision-maker. Once the distribution is known, risk seems to have very little impact on the specification of investment models.

Option value theory seems to ignore Knight’s (1921) argument that risk and uncertainty should not be conflated. Therefore, while uncertainty is a central element of option value theory the models of investment developed have all but removed uncertainty by reducing it to a measurable risk. Therefore, option value theory model does not meet the criteria for a suitable investment model because it is of limited use in most countries where there have been political and economic changes associated with financial integration into the global economy that cause financial and economic shocks and volatility.

## Conclusion (mainstream investment models)

Keynes (1936) stresses the role of expectations and uncertainty and argues that we have to accept that we cannot predict the future. Minsky (1975) re-emphasised the notion of uncertainty into macroeconomic theory with his critique of the interpretation of Keynes’s (1937) *General Theory* by the neoclassical synthesis[[4]](#footnote-4). Minsky (ibid) put forward a reading of Keynes (1937) that brought back uncertainty, including ideas such as Knightian[[5]](#footnote-5) uncertainty, which had been generally ignored by neoclassical economists and absent from the neoclassical synthesis. Crotty (1990, 1993) draws on the post-Keynesian notion ‘fundamental uncertainty’ and provides a good critique of models of investment that not only ignore uncertainty but also assume that investments are reversible. He says:

When capital goods are illiquid the future is unknowable, serious mistakes are possible and the final commitments associated with them are irreversible. Thus, capital accumulation is simultaneously necessary and dangerous for the firm itself: it is necessary to achieve growth and defend its markets and its profits from aggressive competitors, and dangerous because disappointed expectations can make it difficult or even impossible for the firm to fulfill financial commitments. (Crotty, 1993, p.7)

The criteria for assessing suitability of an investment theory in terms of the development of a New Economic Theory should be consider how well the theory and models of investment are suited to analyse a society where there is much uncertainty and conflict due to economic and political change, increased integration into global trade and financial markets and high levels of unemployment, poverty and inequality that exacerbate distributional conflicts. The mainstream models discussed above do not adequately consider structural factors in a society such as inequality and the presence of different classes. At a basic level, the general Keynesian critique that neoclassical and mainstream models do not differentiate between savers and investors and owners and managers of firms is relevant. Keynes (1936) stressed the importance of financial markets and explained that not all savings are automatically converted into investment because people who save are not necessarily the same people who invest. Therefore, not all saving may be used for investment and the level of uncertainty becomes important in affecting how much available funds are used for investment and how much will be kept liquid. Therefore, mainstream models of investment do not adequately take into account uncertainty and irreversibility and are not deemed suitable.

# Heterodox macroeconomic models

## Introduction

The major critique of mainstream investment theory outlined above is that all mainstream approaches do not adequately account for uncertainty and irreversibility of investments. The systematic thinking about economies in heterodox macroeconomics is shaped by the idea of fundamental or radical uncertainty and irreversibility of investment. Other key ideas within this investment theory, such as the separation of ownership and control and recognising the difference between managers and owners in firms, are part of this systematic thinking about the economy.

For example, an important linkage in this systematic thinking about economies is between fundamental uncertainty and irreversibility of investment and the separation of ownership and control that cause managers to prefer internal sources of finance, including profits, for investment rather than external sources. In this world investment is not an automatic optimization process. Managers are conscious of the risks associated with investment in a world of fundamental uncertainty where they cannot predict future states. Managers understand the risk to their firms and their control of those firms when future income is uncertain but they know that they will have regular repayments to creditors of a known quantity. Keynes notion of convention and how it influences decision making when there is uncertainty and irreversibility is based on the perceptions of decision makers. There is a clear psychological element to behaviour of individuals and recognition of the psychology of group behaviour. Therefore, these perceptions are shaped by society and its institutions and it is worth recognizing that many of the institutions that have been developed are to help economic agents attempt to create stability in a world of fundamental uncertainty and irreversibility. This systematic heterodox thinking about society and the economy leads us to considering not only the economic aspects affecting investment but the social structures of accumulation.

It is worth quoting Crotty (1994, p.27) at length here:

The future *is* unknowable; we exist in an environment of true uncertainty. In such an environment, neoclassical theory fundamentally misspecifies agent choice. Fortunately, the price of recognition of the existence and centrality of fundamental uncertainty is not theoretical chaos as neoclassicists would have us believe. The concept of the socially constructed human agent and conventional decision making in concert with an understanding of the institutional foundations of conditional stability create a world with nondeterminist or contingent laws and tendencies, a world that can indeed be appropriated through theory. However, a theory adequate to its task must be institutionally contingent and never lose sight of the dialectical relation between uncertainty and the structures and practices we have created to try to remove its sting.

The theory of the firm that shapes post-Keynesian investment theory is different to the neo-classical models because the goal of the firm for post-Keynesian theory is more than just maximising profits. At the centre of this theory is a realisation, present in the work of Marx (1971) and Keynes (1936) (and their followers), that managers and owners of firms have different roles and interests. This realisation is different to neo-classical theory of the firm where there is a conflation of these roles and interests. Within heterodox economics, managers are salaried employees who make the actual decisions with regard to levels of risk and reward associated with decisions to grow the firm, borrow, invest, employ and overall management of the firm. While owners of stock and other financial assets issued by the firm may have oversight through boards of directors and other governance structures, their role in heterodox theory of the firm is often seen as benefiting from the profits through dividend payments and other returns on their financial assets. While neoclassical theory has an often unstated assumption that firms have manager-owners, the separation of these functions and the rewards linked to these functions are important for heterodox economics. Heterodox economists do realise that managers may own stock in the company and that their remuneration can include stock and stock options, which would make them part of the owner class. However, they separate owners and management.

Literature on financialisation, discussed below, finds that managers have received a larger part of their remuneration in the form of stock-options and other profit related bonuses to align the interests of managers with owners over the past few decades (Crotty, 2003, Lazonick and O’Sullivan, 2000). The shifts in governance during the period of financialisation do challenge heterodox theories of the firm (Stockhammer, 2004). However, it may make sense to maintain a separation between owners and managers at an abstract level even if their material interests have become increasingly aligned as a result of financialisation. With this understanding that there is a separation of ownership and control, heterodox theory of the firm aligns the major goals of the firm with that of managers who are active in the day to day running and long-term investment decision-making of firms. Therefore, the goals of the firm are seen as growth and acquisition of power (Lavoie, 1992). Stockhammer (2002) explains that post-Keynesian theory of the firm was formulated during an age of managerial capitalism. He says, “Developed by Galbraith (1967) and Eichner (1976), and summarized neatly by Lavoie (1992), post-Keynesians have a well elaborated theory of the firm *in the age of managerial capitalism*, but have done little to adapt this theory to contemporary changes in corporate governance (ibid, p10).” The discussion on financialisation and its influence on corporate governance below will address this important issue raised by Stockhammer (2002).

Robinson and Kaldor, who were influential in shaping post-Keynesian economic theory, were influenced by Marx’s perspective that the pursuit of profits and the compulsion to grow are associated with competitive pressures in capitalist economies. Gezici says that for post-Keynesian economics profits are the means to finance the goal of growing the firm. She says that Robinson (1962) argued that “the central mechanism of accumulation is the urge of firmsto survive and grow (p.38).” She says Kaldor (1978) contributed that “the individual enterprise – for reasons first perceived by Marx – must go on expanding so as to keep its share in the market (p.xvi).” Managers have an interest in ensuring that firms survive competition from other firms and they are constrained in their ability to maintain the survival and growth of the firm by the portion of profits they can use to support the accumulation of the firm. However, they may have access to external finance to complement retained earnings from profits for their accumulation plans.

Stockhammer says that for post-Keynesian economic theory inside and outside finance is different. He explains:

This is one of the basic assertions of post-Keynesian economics that has been slowly and painfully rediscovered by neo-classical economists over the past decades after Miller and Modigliani (1958). Following the principle of increasing risk, firms are reluctant to accept high leverage rates since a failure will put the existence of the firm at risk. Banks on the other hand will take current profit and wealth as a proxy for a firm's reliability, and give credit only to firms that are already profitable (Stockhammer, 2004, p.12).

Post-Keynesians have drawn specifically from the work of Kalecki (1937) and his principle of increasing risk, which states that management will be guarded about the risks associated with external borrowing and their caution regarding external borrowing will be high when they already have external borrowing. Gezici (ibid) points out that within this Kaleckian framework, the economic conditions and the business cycle influence management’s thinking on the level of external borrowing that is feasible for the firm. During expansions when banks and financiers are willing to provide finance easily, management also expects demand for their goods and profits to be high and will increase their external borrowing. During downturns in the business cycle, financial institutions will be more cautious about lending and management of firms will also limit their exposure to external finance because their expectations with regard to demand and profitability would be negative.

Stockhammer (2002) says that an important aspect of post-Keynesian theory of the firm is the growth-profit trade off. He says that while one may question the assertion that more investment hurts profits that this contention is a central aspect of post-Keynesian theory (ibid, p.13). Crotty and Goldstein (1992) argue for a growth-safety trade-off that managers face when making investment decision. This formulation draws on the inside-outside finance and Kalecki’s principle of increasing risk where managers want to limit outside borrowing. Gezici (ibid) says that the Crotty and Goldstein (1992) formulation has firm borrowing not constrained by financial market pressures but by managers’ determination to maintain independence from financial market pressures. She argues that this aspect of post-Keynesian theory differs from neoclassical theory’s discussion of finance constraints because management reluctance and apprehension about external finance will always be a constraint on post-Keynesian firms irrespective of financial market conditions.

At a deeper level the notions of uncertainty and irreversibility and understanding how they are linked to the creation of institutions in society leads us to consider the causes of stability and instability in economies. Crotty (1994) argues that the relation between conventional decision making and stability is dialectical. In his view “institutions can never create more than conditional stability (ibid. p.27).” Institutions as socially constructed entities are filled with contradictions and cannot find solutions to instability without creating new forms of instability. According to Crotty, “… they transform the effects of uncertainty and shift them across time rather than permanently eliminate them”. Crotty’s challenge to macrotheory is that if we are to develop a theory that integrates institutional structures and conventional expectation and confidence formation we must be able to explain both why in this world of fundamental uncertainty there is orderly capitalism most of the time and we must explain the causes of periodic crises and crashes (ibid.).” Crotty’s view in conclusion is that “The contradictory and dialectical role played by conventional decision making and uncertainty-reducing institutions makes the pursuit of permanently effective state control of the capitalist economy through traditional macropolicy perpetually elusive (ibid).”

## Demand and aggregate demand

A key difference between mainstream and heterodox accounts of the economy is the role of prices. Prices as signals in markets are fundamental in neoclassical economics. Eichner (1978) explains that the focus on investment in post-Keynesian macroeconomics is different to the focus on price in neoclassical economics. He says, “This follows from an underlying belief that in a dynamic expanding economy (paraphrasing neoclassical terminology), the income effects produced by investment and other sources of growth far outweigh the substitution effects resulting from price movements (ibid, p12).” In other words, changes in demand, whether aggregate demand or sectoral demand, are more the result of income changes than price changes. In contrast to neoclassical theory where it is usual to assume full employment in the long-run as a way of eliminating the income effects.

Lavoie (2006) explains that “According to the principle of effective demand, the production of goods adjusts itself to the demand for goods. This principle is at the heart of all post-Keynesian approaches. The economy is therefore demand-determined, and not constrained by supply or given endowments (Lavoie, p.p.12-13).” Lavoie describes the place of investment within this thinking drawing on Shapiro (1977). He says, “This means that investment is essentially independent of saving; investment and capital accumulation are not tied to the intertemporal consumption decisions of households (ibid)”. Sawyer (2007) argues that a key difference between heterodox and mainstream approaches is “… there are no market forces which could be relied on to propel the level of aggregate demand towards any supply-side equilibrium (or towards any other desired level of economic activity). There is a denial of the operation of relative prices to clear markets or of the real balance effect (in an endogenous money world) as the instrument of adjustment (p.2).”

Sawyer (ibid), drawing on Kalecki, says that aggregate demand sets the level of economic activity in an economy. Aggregate demand is the sum of intended consumer demand, investment demand, government expenditure and the net trade balance. The propensity to consume depends on the source of income (wages vs profits) and investment is affected by profits. Therefore, the distribution of income between wages and profits plays a significant role in aggregate demand outcomes. Sawyer says that aggregate demand determines the level of output in the short run and long run. As a result, the level of economic activity depends on a range factors including the distribution if income.

The Kaleckian approach that has become widely drawn upon by post-Keynesian economists is derived from the widely cited paper by Bhaduri and Margin (1990). Sawyer (2007) provides a good, short explanation of the importance of Bhaduri and Margin’s 1990 paper. He says:

The incorporation of the idea that investment depends on profitability and capacity utilisation by Bhaduri and Marglin (1990) along with the differential propensities led to the distinction which they drew between a stagnationist regime and an exhilirationist regime, now more usually referred to as wage-led or profit-led regimes. The significance of this approach is that it brings income distribution into a central role in the determination of aggregate demand and the level of economic activity. It also serves as a reminder that shifts in behaviour or in structure – in this case in the differential in propensity to consume and the influence of profitability on investment – can have marked effects on approach to policy (p.3.).

Bhaduri and Marglin (1990) develop a synthesis of neo-Marxian and neo-Keynesian theories. They synthesize Keynesian investment theory and Marxian theory of the reserve army of unemployed and class conflict. Their stated aim was “…to release the Keynesian theory of the capitalist economy both from the stagnationist-cooperative strait jacket that has dominated Left Keynesian thought and from the marginal role that the mainstream has accorded Keynesian theory as a theory of no relevance to understanding the functioning of the capitalist economy apart from the short period” (p.153). They stress their support for the Keynesian view that that aggregate demand (AD), particularly investment demand, has an important role to play in the economy as a driving force.

Hein and Vogel (2007, p.3) say that the ‘underconsumptionist alternative of the Kaleckian model, which was introduced by Rowthorn (1981), Dutt (1984, 1987, 1994) and Amadeo (1986, 1987) assume a strong accelerator effect in the investment model. Therefore, changes in income distribution have a distinct influence on the long-run equilibrium of growth because a rise in wages would be associated with increased profits, more capacity utilisation and investment and overall economic growth. Bhaduri and Marglin (1990) show that within a Kaleckian framework, different regimes of accumulation are possible.

They show how a long run view with aggregate demand and aggregate supply curves that evolve over time can be used to illustrate different accumulation regimes that take into account conflict and cooperation between the capitalist class and the workers. The power relation between capital and labour changes over time as the size of the reserve army adjusts to demand for labour. The success of capitalists in one period where they have relatively more power over workers and expect higher profits can turn into one where their increased demand for labour reduces their power over labour, leading to a decline in expected profits.

Marglin and Badhuri (ibid) refer to the power relationship between workers and capitalist as cooperative when capital has more power over workers (and expected profits are higher), and conflictual when capital is less powerful relative to labour (and expected profits are lower).[[6]](#footnote-6) They then consider how the conflictual and cooperative nature of the relationship between capital and labour affects expected profits and economic activity in different accumulation regimes. They argue that the IS curve could slope up or down. When the curve slopes upward an increase in AD is associated with rising profits. They call an upward sloping IS curve an exhilirationist regime. When the IS curve is downward sloping an increase in AD is associated with declining profits. They refer to the downward sloping IS curve as a stagnationist regime. They say that it is hard to separate out all the factors that influence decisions to invest based on expectations of profits and how these are formed (ibid., pp.173-4). They argue that factors of a political, social and cultural character like the state of class relations or the state of confidence in the international financial system cannot be easily separated into neat categories in theorizing how they influence investment.

Within a social structural theoretical framework of long run investment it is not only power relations between capital and labour that is important, but as Bowles, Gordon and Weisskopff (1986) and Weisskopf (1994) argue the power of the capitalist relative to the citizens of a foreign country and foreign suppliers of inputs are also important. It is not only the relationship with foreign suppliers of inputs but also the international role that the capitalists’ home country government plays militarily, politically and economically in the international arena that influences the potential profitability of the capitalists. (This strand of the literature associated with the Social Structure of Accumulation and French Regulation Schools is discussed below).

## Income distribution and class

Kaleckian-based models of distribution and growth are driven by investment (not savings as in neoclassical economics), which (as discussed above) makes demand an important component of post-Keynesian macroeconomics. Hein and Vogel (2007, ) say, “In the models by Kaldor and Robinson, assuming full utilisation of productive capacities given by the capital stock in the long run, firms’ investment decisions, determined by ‘animal spirits’ and the expected profit rate, affect growth and functional income distribution.” However, in these ‘older’ models the wage share is negatively related to increasing capital stock. Most Kaleckian models have a variable rate of capacity utilisation in the long-run. The market power of firms and their power relative to workers influences the mark-up firms can charge and consequently the income distribution.

The valuable contribution by Bhaduri and Marglin (1990) (discussed in detail above) is one that builds on the work of Kalecki, and his colleagues such as Robinson, Kaldor and Steindl. Bhaduri and Marglin (ibid) can more readily be used for empirical analyses of regimes of growth and accumulation during a certain period in a specific country. There have been many empirical investigations of accumulation regimes inspired by Bhaduri and Marglin. Hein and Vogel (2007) provide a comprehensive overview, including a helpful table, of empirical work applying Bhaduri and Marglin’s insights to examine the link between distribution and economic growth and accumulation.

In a study for the International Labour Organisation, Onaran and Galanis (2012) use the single equation estimation technique to examine distribution and growth in sixteen G20 countries[[7]](#footnote-7), including developing countries. It is one of the few studies of this type that include developing countries. Onaran and Galanis (2012, p. 42) find:

Among the developed countries, the US, Japan, the UK, the Euro area as well as Germany, France, and Italy are wage-led. Canada and Australia are the only developed countries that are profit-led; in these small open economies, distribution has a large effect on net exports. Among the developing countries, only Turkey and Korea are wage-led. China is very strongly profit-led due to strong effects on exports and imports. South Africa is also profit-led with a relatively high impact of distribution, which is partly related to a very low difference in the marginal propensity to consume out of profits and wages. Mexico and Argentina have a profit-led private demand regime due to strong effect of profits on both investment and net exports in Mexico, and a very weak effect on consumption in Argentina. India is profit-led, but the effect of distribution is rather low.

A significant result of their study is that domestic private demand is wage-led in all countries examined. They say that the reason for this result is because consumption is much more sensitive to an increase in profit share than to investment. Therefore, an economy is profit-led only when the effect of distribution on net exports is large enough to offset the impact of domestic demand. Onaran and Galanis (ibid) results are in line Bowles and Boyer (1990), who pioneered the single equation technique, who found that domestic sectors in France and Germany were wage-led but results show them to be profit-led when the effects of distribution on net exports are included in the empirical analysis. Ederer and Stockhammer (2007) have a similar result for their study on France as do Hein and Vogel (2008) for Germany and France. Hein and Vogel (2007, p.1) in reference to the similar results from Bowles and Boyer (1990) and Ederer and Stockhammer (2007) say, “These studies, therefore, seem to support Bhaduri and Marglin’s (1990) theoretical conclusion that wage-led growth becomes less feasible when the effects of redistribution on foreign trade are taken into account.”

## Structures of accumulation and regulation

Kalecki (1943) in his discussion on the political economy of full employment provides important insight into the distinction between distributive outcomes and distributional conflicts. He argues that even when capitalists are earning profits under full employment they will reduce investment and work to undermine full employment because it threatens their power in the workplace and in society. Ultimately, the economic interests of the capitalist is not solely about earning profits but their ability to maintain a system that ensures that they are able to continue realising profits and the stability of that system. Full employment increases the power of workers not only their bargaining power in the workplace but also the political power of workers as they are able to build trade unions, political parties and other institutions. The expectation that full employment will reduce the stability of the current system and lead to change will become the primary concern of the capitalist. The accumulation and growth regime will depend on the stability of the underlying institutions, which are affected by distributional conflicts. Therefore, empirical work on growth and accumulation regimes, particularly when developing countries are included in the studies, seems to be missing an important discussion about the stability of social institutions underlying the regime.

Bowles, Gordon and Weisskopf (1986) define an SSA as a set of socio-economic institutions that are a historically specific expression of a capitalist mode of production. A specific capitalist economy will grow well and have relative stability during a period when an SSA is in place. However, an SSA is subject to external shocks and endogenously generated stresses eroding it and undermining its effectiveness in promoting profitability leading to a period of crisis in which political struggles develop over a new institutional structure for successful accumulation. They see history in terms of a series of the rise and decline of successive SSAs. The SSA approach helps to explain long cycles within capitalist economies drawing on Marxian theory as it considers the internal contradictions within a capitalist system and the institutions that help to maintain stability during a certain period of capitalist accumulation.

Kotz, McDonough and Reich (1994) provide a summary of the type of institutions required to maintain an SSA:

The SSA includes political and cultural institutions as well as economic ones. The institutions comprising an SSA include both domestic and international arrangements. The domestic institutions may include the state of labor- management relations; the organization of the work process; the character of industrial organization; the role of money and banking and their relation to industry; the role of the state in the economy; the line-up of political parties; the state of race and gender relations; and the character of the dominant culture and ideology. The international institutions may concern the trade, investment, monetary-financial, and political environments.

The evolution of economies and institutional arrangements over time can be analysed through the SSA approach. In this sense the approach draws on the old intuitionalists such as Veblen and Commons. The historical studies also draw on Marxian tradition of global analysis such as Hilferding and Lenin’s discussions of finance capital and imperialism in the global economy.

The SSA approach has made an important contribution to economic analysis by making this analysis less economistic through contextualizing economic activities and outcomes taking into account ‘non-economic’ factors such as institutions and arrangements. It reinforces the perspective that each economic space and historical period has to be studied taking into account the specific ‘economic’ and ‘non-economic’ factors present. Through examining economies and their institutions the SSA approach shows that economic crises do not represent the end of capitalism. The SSA approach showed that capitalism is a resilient system that goes through changes over time where different institutional arrangements or SSA’s support economic expansion, erode and are replaced by a new SSA.[[8]](#footnote-8)

The approach by the French Regulation School is very similar to the SSA School in explaining expansion and crises in capitalist economies by examining the role of institutions that provide periods of stability to support accumulation and economic expansion. The definition of a regulation regime by Michel Aglietta, one of the founders of the school, is given in the following quote:

The essential idea of *A Theory of Capitalist Regulation* is that the dynamism of capital represents an enormous productive potential but that it is also a blind force. It does not contain a self-limiting mechanism of its own, nor is it guided in a direction that would enable it to fulfil the capitalists’ dream of perpetual accumulation. To put it another way, capitalism has the inherent ability to mobilize human energy and transform it into growth, but it does not have the capacity to convert the clash of individual interests into a coherent global system.” (Aglietta 1998, p.49)

Boyer (2005) says that the goal of the regulation approach is to explain the emergence and subsequent crisis of modes of development in different periods. A mode of development consists of both the ‘regime of accumulation’ and the ‘mode of regulation’. The notion of a ‘regime of accumulation’ is shown to be central to Post Keynesian/Kaleckian theories of growth and investment discussed above. Boyer (ibid) says that the ‘mode of regulation’ is the institutions, norms and practices that provide for the long-run reproduction of a regime of accumulation. The addition of ‘mode of regulation’ to the ‘regime of accumulation’ analyses seems to be an important contribution that leads to analyses that is more rooted in the historical and institutional context being examined. And, as mentioned above adds another dimension to models that take into account distribution and Kalecki’s differentiation between distributional outcomes and distributional struggles.

## Economic growth path and path dependency

Eichner (1978) argues that an essential element of post-Keynesian theory is that it is formulated in a way where even if there are no changes in determinants or parameters, the economic system is seen as expanding (at an uneven pace) “along a secular growth path”. This post-Keynesian view of the economic system in constant motion is very different to the neoclassical economics, be it partial or general equilibrium, where the system comes to rest at some point. Sawyer provides further insight into this aspect of heterodox economics by explaining the interdependence of demand and supply and path dependency.

Sawyer (2009) says that mainstream economics has a central proposition that at both the microeconomic and macroeconomic levels of supply and demand are independent. Mainstream economics separates the factors influencing supply and demand and it is only through the price mechanism that that supply and demand curves interact. He says that mainstream economics follows the classical dichotomy and uses the word ‘natural’ to reinforce the separation between the real sectors of the economy from the monetary sectors Friedman (1968, following Wicksell).

Sawyer (2009) says “The interdependence of demand and supply is closely related with path dependency (p.10).” Sawyer explains that the term ‘path dependency’ refers to two aspects of heterodox economic thought different to neoclassical economics. The first aspect he mentions is that the economic growth path of a country is “built up step by step” not predetermined as in neoclassical growth theory (including endogenous growth theory). He compares this ‘step by step’ process to evolution. The second aspect he mentions is that heterodox economists would use the term ‘path dependecy’ instead of ‘hysterisis’, which indicates a shift from one equilibrium to another even if that equilibrium is influenced by the path the economy has taken.

Sawyer (2009) says it is common place to observe that the level of economic activity is demand determined in the short-run, and that fluctuations in the level of economic activity arise from fluctuations in demand. The Kaleckian analysis views significance of the role of aggregate demand as more extensive than that. Specifically, the lack of unambiguous market based forces leading the level of demand into line with available supply is one basic tenet of a Kaleckian analysis and hence inadequate aggregate demand can be a long term phenomenon. Further, the evolution of the supply potential of the economy in terms of the available work force, the size of the capital and the growth of factor productivity are all strongly influenced by the time path of the level of demand. This is most evident for the growth of the capital stock, where investment expenditure is strongly influenced by the level of economic activity, but it would also be relevant for the evolution of the effective labour force.

There are various paths that an economy can take and as Sawyer puts it, “by which the path of demand opens up the supply future.” There is a specific relevance to this understanding of demand and supply for thinking about a New Economic Theory that moves beyond a fixation on gross domestic product but considers the evolution of economies towards sustainability, economic security and welfare. Sawyer (2009) argues that three mechanisms seem more prominent in this process. He says that current demand influences investment that in turn adds to the stock of capital. He adds that this thinking applies not only to physical capital but to investments in areas such as education and health as well. These areas of demand and the response of suppliers have a huge impact on future issues related to sustainability in terms of livelihoods and the environment.

The second way in which demand affects the growth path is through its influence on the labour force and how “people are drawn into or pushed out of the effective labour supply through demand (ibid)”. Sawyer explains that there are many influences on labour supply, including demographics, migration and changes in social attitudes but argues that “… the evolution of the labour force cannot be understood without reference to demand”. The third path Sawyer highlights is linked to the operation of a Verdoorn law type of effect where there is ‘learning by doing’. Demand has an effect because it affects the level of economic activity that affects the ‘learning by doing’ and related productivity growth.

The discussion of the central role of monetary institutions and financialisation below relates the economic growth path and the crucial role of demand to the functioning of the financial system. Widespread financial liberalization, integration of global financial markets and the resultant shift from an industrial capitalism to a financialised capitalism has had a huge impact on corporate governance and structure as well as the operation of global value chains. These changes in the financial system influences not only the levels of demand but the way in which suppliers, private and public, respond to demand.

## Credit, monetary institutions and endogenous money

Eichner’s (1978) lists as another essential element of post-Keynesian theory the view of the economic system as one where advanced credit and monetary institutions play a fundamental role in the dynamic processes being analysed. Heterodox economists now use the term “endogenous money” to describe the process by which money is created within the private sector when banks provide credit through the creation of deposits. Sawyer (2009) accredits Moore (1988) with making a major contribution towards post-Keynesian economics with his emphasis on money creation processes. Sawyer says that Kalecki (1971), Kaldor (1970), and Robinson (1956) amongst others had intrinsically used what could be described as an endogenous money approach in their work.

In the endogenous money approach the central bank does not establish the supply of money. Sawyer (2009) says that the central bank’s key policy interest rate governs the terms on which it provides ‘base money’ (M0) to the banking system. The stock of money is affected by demand for money and this stock can be increased through demand for credit or diminished through repayment of loans. Therefore, the expansion of the stock of money is determined by the meeting of demand for loans by the banks and the associated expansion of bank deposits. Minsky (1986) says that the financial sector is predisposed to cause bubbles and crashes in and economy. Therefore, endogenous money is related to instability and crises are endogenous to capitalist economies.

Sawyer (2009) adds to the heterodox understanding of investment by showing a link between the endogenous money approach and path dependency in the economic growth path by considering the manner in which banks provide loans and the way that credit is rationed. The way in which banks provide loans will affect economic growth and their discrimination in credit rationing will influence the growth path. Sawyer mentions credit rationing discrimination with regard to gender and ethnicity. This credit rationing could also be influenced by perspectives with regard to economic security, welfare and environmental sustainability. This discrimination can also be between sectors of the economy, favouring of high tech and not low tech industries and choices to lend to big or small businesses. This perspective on the role finance in relation to investment and path dependency is interesting because it takes the discussion of path dependency beyond a focus on technology and the reason for growth in some sectors of the economy and not others. It adds an important (and in my view neglected) dimension where path dependency of an economy includes the effects of world views of those who dominate the financial institutions, including issues central to formulating a New Economic Theory such as global warming, equality and racial and gender biases. The structural influence of banks and other financial institutions on an economy can be seen in who and what they choose to finance and the terms on which they provide finance.

## Market structure

Heterodox economists see the economy as dominated by large corporations. Eichner (1978) says that for post-Keynesian theory the role of multinational corporations and trade unions is essential. Eichner points out that prices in most markets are not the result of competition but are administered. Sawyer (2009) says, “Enterprises make interrelated decisions on price, output supply and employment offers in light of the demand conditions which they face and their own productive capacity (ibid, p.3). He says wages are based on considerations about efficiency wages or are the outcome of collective bargaining. In other words, prices and wages become parameters in determining the rate of savings by businesses and households and revenue inflows and discretionary income of the public sector. Steindl (1952) raises the possibility of stagnation even with healthy profits in an economic structure where large corporations dominate the economy.

# Financialisation

## How can financialisation contribute to a new economic theory?

A New Economic Theory will have to integrate relevant older economic theoretical perspectives into a framework capable of analyzing what many commentators have identified as an important shift in the capitalist system. The change is from an industrial capitalism to a financialised capitalism where increased integration of trade and financial markets globally and widespread liberalization of financial markets have been described as a process of financialisation. Epstein (2005) provides a broad definition of financialisation, he says, “Financialisation means the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies (p. 3)”. Authors such as Dumenil and Levy (2004) and Epstein and Jayadev (2005) focus on the increasing share of income that goes towards the financial sector and the increasing level of financial investment. Froud et al (2001, 2007) consider the impact of the rise of finance and the importance of financial investments on different parts of society, including households, labour, and corporations. They use the term coupon pool capitalism to describe the changes to the capitalist system where economic agents, i.e. households and firms, interac through sale and ownership of financial assets (Froud et al 2001).

Financialisation has also occurred through the liberalization of cross-border capital flows. The movement of particularly short-term capital has had a significant impact on investment choices, accumulation of capital and the shape of economic growth paths. At the same time, there is much evidence that liberalization of short-term capital flows (often referred to as hot money) and increased use of financial instruments such as derivatives and securitized debt increased volatility and systemic risks in financial markets and increased macroeconomic fragility. Overall, the influence of financial liberalization and increased cross-border capital flows has been to shift capital away from investment towards financial markets. Investors avoided long-term, irreversible fixed investments because of the already mentioned increased volatility and risk associated with increased speculative foreign short-term flows. The bubbles in financial markets associated with short-term capital inflows attracted money towards financial market speculation away from fixed, productive sector investments. Short-term flows were not conducive to long-term fixed investments.[[9]](#footnote-9)

There are different interpretations in the literature over whether financialisation is a strategy for redistributing income to a rentier class. Palma (2009) using Foucault argues that neo-liberalism and financialisation are ‘technologies’ of redistributing wealth and income away from the rest of society to rentiers and the one percent who now control a larger share of global wealth. Lapavistas (2009) says that there is no single rentier social layer. He says we have to understand how industry, finance and workers have changed in current capitalism. In other words, we have all become rentiers within the neoliberal system. Neo-liberal policies have led to reduction of welfare and state provision of basic services, including health and education. As a result, financialisation takes the form where households have increasingly had to engage in financial activities to provide these basic services and for risk mitigation through acquisition of private insurance and pension services that had been previously provided by welfare states. The increasing role and influence of institutional investors, such as insurance and pension providers, is also relevant in this discussion. Fine (2009) says that as with Lenin’s shorthand that ‘Imperialism is the monopoly stage of capitalism’ one can say that ‘neo-liberalism is the financialised stage’.

Much of the economic and sociological literature on financialisation has focused on the effects on the capitalist system and capitalist economies at a macro level and on corporations, particularly non-financial corporations, and households at a micro level. The development of a framework for a New Economic Theory as applied to understanding accumulation, therefore, should expand towards understanding the process of neo-liberal globalization as one where there is increased power of the financial sector, more investment in financial assets and a larger share of income going to finance. At the same time, financialisation touches most societies and different groups in societies. The impact of financialisation on capital has led to a larger role for institutional investors and the shareholder value movement and a change in corporate governance towards maximizing shareholder value and a move away from patient to impatient capital.

Froud et al (2000) explain that the notion of shareholder value has become hugely influential in corporate decision making. Lazonick and O’ Sullivan (2000) argue that shareholder value has become the new ideology for corporate governance. They argue that the result of this new approach where increasing shareholder value is the primary goal of corporate governance leads to a shift in the behaviour of corporate managers towards focusing on short-term profits. They describe this shift as a move from patient to impatient capital. The incentives on management (such as stock options) have also directed them towards the goal of increasing shareholder value.

The use of the term financialisation as applied to non-financial corporations and the analysis of macroeconomic investment theory in this paper is much influenced by Crotty’s (2003) insights from Keynes, Marx, and Schumpeter to provide an important theoretical contribution that helps us to understand the change in senior management behaviour and corporate structure from the ‘Golden Age’ to the neo-liberal era. Crotty draws on Lazonick and O’ Sullivan’s (2000) idea that there has been a shift from patient to impatient capital in large non-financial corporations (NFCs). He says “… there has been a shift in the beliefs and behavior of financial agents, from an implicit acceptance of the Chandlerian view of the large NFC as an integrated, coherent combination of relatively illiquid real assets assembled to pursue long-term growth and innovation, to a “financial” conception in which the NFC is seen as a ‘portfolio’ of liquid subunits that home-office management must continually restructure to maximize the stock price at every point in time (Crotty, 2003, p.17).” Crotty (2003) also says that top management’s pay was linked to the long-term performance of their business whereas in the neo-liberal era it is linked to short-term movements in the price of their firm’s stock. With financialisation, there has been a shift where the interest of top management is aligned with the interests of shareholders, especially institutional investors, against the interests of other stakeholders in the firm. For example labour is an important stakeholder that is negatively affected because downsizing is a common strategy used to increase short-term profitability of firms.[[10]](#footnote-10)

Both Froud et al (2001) and Crotty (2003) refer to the fact that non-financial corporations currently face competition and other factors that put downward pressure on their profits at a time when the financial markets demand higher returns on their investment. Crotty calls this problem the “neo-liberal paradox”. The concept of the neo-liberal paradox provides important insights into the behaviour of large businesses today. Crotty (2003) uses Marxian and Schumpetarian theory of competition to complement Chandler’s historical analysis of US corporations to show that non-financial industries in core sectors had enjoyed corespective competition due to oligopolistic market conditions that allowed for relatively high and stable profits. Crotty’s important contribution is to explain the end of corespective competition and the era of high, stable profits during the neo-liberal era. He says:

There are numerous economic and political conditions required to ensure that core oligopolies act in a manner that helps create and reproduce a healthy economy. These conditions include a strong regulatory apparatus, sustained high employment, a labor-friendly government, appropriate tax policies, and strong unions in core industries. In the neoliberal era, by way of contrast, deregulation, increasingly open borders, and the end of a commitment by government to pursue high growth through Keynesian macro policies have destroyed the conditions necessary for corespective behavior.

A result of the breakdown of corespective competition is an end of the oligopolistic market arrangement for the large, core sector NFCs. Crotty describes a process where there has been an outbreak of cut-throat competition, the destruction of secure oligopoly rents, overinvestment and the creation of excess capacity and too rapid introduction of innovation.[[11]](#footnote-11) He describes this process as one of coercive competition where large companies with large capital investments and sunk costs are forced to invest to remain competitive. Since profits have declined, these NFCs have less access to retained earnings for the coerced investments and are forced to turn to financial markets. As a result, financial agents gain more power over the NFCs. The shareholder value maximization approach to corporate governance and the alignment of interests of senior management with shareholders reinforces the short-term focus of the NFCs.

Nolan (2003), while not explicitly referring to financialisation, also has an important contribution to make towards understanding how the shareholder value movement has influenced global corporate restructuring. He explains the increased concentration of global markets since the 1990s. He says that the internationalisation and restructuring of firms during the 1990s set off a huge increase in mergers and acquisition activity. According to Nolan (2003) “…in the 1990s, the global business revolution produced an unprecedented concentration of business power in large corporations headquartered in high income countries”.

Nolan (2003) says that demands of institutional investors for increased shareholder value forced large global corporations to restructure. The investors believed that firms that focused on their core business provided higher levels of shareholder value. They believed that these corporations had more focused management. They also believed that brand recognition and dominance was especially important in globalised markets. A focus on core business meant that the large share of a firm’s total cost that was spent on global marketing campaigns would be more effectively spent if they focused on promoting fewer global brands. Therefore, an increasing number of global core or lead businesses restructured to narrow their business activities.

Millberg (2008) argues that financialisation has affected global commodity chains (GCCs) and the structure of these linkages. He says that rentiers in developed country financial markets through their power as shareholders in lead firms in GCCs have influenced the functioning of GCCs by pressuring them for higher short-term returns. This pressure has led lead firms to use their dominance in GCCs to extract high returns by squeezing firms in the rest of the GCCs. Millberg argues that even though there has been a large amount offshoring that has shifted production out of the US, US investors have still managed to achieve high returns through investing in the US-based corporations that dominate GCCs.

The discussions of financialisation over the past few decades, referred to above, explain a complex process that has been uneven across different countries related to the social, political and economic role and influence of finance. It shows an intersection of the effects of liberalization of financial markets in individual economies and the effects of increased integration of global financial markets. It also shows how the ideology of corporate governance has shifted towards shareholder value and how that has shifted NFCs towards increasing the share of income and profits they receive from financial activities and speculation in financial markets. It has also considered the restructuring of global corporate structure and power relations within global value chains. These developments provide us with much insight into the current conditions influencing investment and investment decisions at a macroeconomic and microeconomic level. Overall, the increased power of institutional investors and the shareholder value movement have created what Crotty (2003) describes as the neoliberal paradox for NFCs as they face increased competition in product markets while they face increased pressure from shareholders for higher short-term returns. The next section discusses how economic analysis using formal economic models incorporates financialisation into those models. It builds on the theoretical discussion of heterodox economic models and macroeconomic investment models in earlier sections.

## Investment models and financialisation

The earlier discussion of heterodox economics and macroeconomic models aimed to show that these models were different to neoclassical economic models because they are not ahistorical and they take into account aspects of institutions and their evolution. I pointed out that the influence of Keynes and Kalecki has been important in shaping economic theory where irreversibility of investment and fundamental uncertainty were not assumed away and where distribution and distributional struggles shaped outcomes. The role of demand, the competitive structure of the economy, the importance of path dependency and the recognition that capitalist economies are monetary economies were all central to shaping the theory and the conception of economic models of investment based on that theory.

The discussion below is about the use by heterodox economists of econometric models to quantify the impact of financialisation on investment. As discussed above these models draw on key insights of post-Keynesian economics with regard to distribution and distributive struggles, the growth and profit trade-off and the preference for internal finance (i.e. Kalecki’s (1937) ‘principle of increasing risk’. The influence of Kalecki (1954) and the macroeconomic model based on his work by Bhaduri and Marglin (1990) is clear. Most of the models of investment that take account of financialisation are adaptations of the Bhaduri and Marglin investment model. In a sense, many of these investment models that include financialisations as part of their explanation build on the theory and techniques developed in the studies that apply Bhaduri and Marglin’s model to see whether countries have profit led or wage led accumulation regimes.

One of the earliest macroeconomic investment models with econometric estimations that included an independent variable for financialisation was Stockhammer (2004). As mentioned above, Stockhammer pointed out that the post-Keynesian model was developed in the age of managerial capitalism. Drawing on the arguments about financialisation from authors such as Crotty (2003) and Froud et al (2000), he argues for a change in post-Keynesian theory of the firm. This updated theory would have to recognise that rise of the shareholder value movement has led to a shift in the behaviour of management towards a stronger preference for profits than growth and the long-term survival of the firm. In this new era there will be low investment at the firm level. Stockhammer’s model incorporates the shift in NFCs as a result of financialisation that management show a preference for profits when there is a choice between growth and profits for the firm.

Stockhammer (2004) develops a post-Keynesian macroeconomic investment model with accumulation as the dependent variable as a function of capacity utilisation, profit share, the relative cost of capital, which are variables commonly used in estimating investment, and he adds a variable that he calls rentiers share of non-financial business (RSNF) to represent financialisation. RSNF is calculated by taking the interest and dividend income of the non-financial business sector as a proportion of the firm’s value added. Stockhammer explains his investment model:

This specification is inspired by the reformulation of post-Keynesian investment function by Marglin and Bhaduri (1990), but contains the neo-classical approach (pioneered by Jorgensen 1963) as a special case. Keynesians argue for the importance demand effects and the role of profits –as source of internal finance and as proxy for profit expectations-, whereas neo-classical economists emphasize the role of the relative cost of capital and accept the role of output. (Stockhammer, 2004, p.19)

Stockhammer estimates the model for Germany, France the UK and USA. Stockhammer finds that the growing shareholder value orientation of firms has a negative impact on accumulation for the USA and France and a small impact on the UK but he finds no impact on Germany. He interprets the positive results for France and the USA as a result of these countries having been more financialised. He says that the lack of impact on Germany was because the process had started late in Germany. He interprets his regression results for the low impact of financialisation on accumulation on the UK as a result of poor levels of accumulation in the UK.

Studies after Stockhammer’s (2004) paper included other independent variables to represent financialisation. Hein (2007) includes the ratio of debt to capital, Ryoo and Skott (2008) utilise debt to capital and retained earnings to capital. Arestis et al (2012) add variables to take specific account of convention and uncertainty, including deviations between current rates and ‘normal’ rates in financial and real markets, including, exchange rates, the oil price and the stock market index Van Treeck (2008) divides total profits of a firm into retained earnings, dividend payments and interest payments. He finds that the rentier’s share, which includes interest and dividend payments, is significantly negatively related to accumulation. The extraction of interest and dividend payments by the rentier reduces the amount available for retained earnings and thus a firm’s internal funds available for fixed investment.

Hein (2012) builds a Kaleckian stock-flow consistent model of investment that allows him to consider the short and medium-term with respect to capacity utilization rates, profits and capital accumulation. His model also takes account of stability of the financial structure of the corporate sector. It build on the accumulation regimes approach and finds that with growing shareholder power there are three possible new macroeconomic regimes associated with financialisation: ‘finance led growth’, ‘profits without investment’ and ‘contractive’ regimes’ (Hein, ibid, p.4). He shows that only the ‘finance-led growth regime’ yields a stable financial structure of the corporate sector and that the other two are unstable (ibid.). He says, “… it should be noted that this regimes requires a very special parameter constellation: only weak negative effects of increasing shareholder power on management’s animal spirits, a low rentier’s propensity to save, a low profit share, a low elasticity of investment with respect to distributed profits and internal funds, and a high responsiveness with regard to capital utilization (ibid, p63).” He finds that the unstable constellations are more realistic. Hein says that there may be some policies and other forces in the economy that could possibly increase stability of the ‘profits without investment’ and ‘contractive’ regimes’ but that his modelling results show considerable potential medium run instability arising out of corporate financial structure and capital accumulation (ibid.).

Fazzari and Mott (1986) is an important paper where a post-Keynesian microeconomic model that includes variables for liquidity and sales is used to compare their independent effects on firms’ investment decisions. Their model takes into account capacity utilisation (proxied by sales), the availability of internal finance and interest payments. Ndikumana (1999) builds on Fazzari and Mott’s (ibid) use of a flow measure for interest payments to represent a constraint on cash flow by introducing both stock and flow variables to examine the effect of a firm’s debt on investment. Ndikumana’s results were that both stock and flow measures of debt had a significant and negative effect on debt. Fazzari and Mott (1986) and Ndikumana (1999) do not include financial revenues, which represent financialisation, in their microeconomic investment models. There are a few (three that I am aware of) studies of financialisation that build on Fazzari and Mott (1986) and Ndikumana (1999) that use post-Keynesian microeconomic models: Orhangazi (2008), Demir (2009) and Onaran and Tori (2016).

Orhangazi (2008) using data at a firm level for US manufacturing firms in a dynamic panel estimation approach finds that when larger firms benefit from financial profits these profits ‘crowd out’ accumulation of fixed capital. His study used financial income and payments and the debt level as independent variables. He finds that smaller firms may benefit from increases in financial income indicating that financial income plays a dual role of crowding out and supplementing internal finance. Orhangazi’s (2008) study claimed to be the only study that took into account microeconomic factors in studying financialisation at the time. Demir (2009) also uses microeconomic analysis for Argentina, Mexico and Turkey that takes into account the different rates of return of financial and fixed assets in a portfolio choice model. Demir includes independent variables that proxy for risk and uncertainty, credit extended by the banking sector and real GDP. Demir finds that higher returns to financial assets are negative for fixed investment. Onaran and Tori (2016) use a dynamic panel data model to look at the effects of financialisation on firm-level investment in UK based publicly listed NFCs. They define financialisation as increased reliance on external finance and increased dependence on financial activities rather than fixed investments and argue that this form of financialisation had an important role in reducing fixed investment in NFCs in the UK. Similar to Orhangazi’s study of the US they find a dual role for finance where rentier income in the form of dividends and interest payments reduce internal finance for investment and there is crowding out of fixed investment because of increased financial investments.

# Conclusion

This paper has provided a broad survey of the macroeconomic literature on theory and macroeconomic models of investment. It argues that models in the neoclassical tradition (including new-Keynesian theory) are generally inadequate for the purposes of the development of a New Economic Theory. The mainstream models abstract from time and are, therefore, unable to adequately take into account uncertainty and expectation formation that are key considerations for investment. The mainstream theories and models generally ignore the path-dependence of accumulation and the development path in a society. They also do not adequately consider institutions, how they evolve over time and contribute to changes in systems of accumulation.

This paper argues that heterodox macroeconomic models that draw on a post-Keynesian perspective provide a better framework for developing a New Economic Theory because of the treatment of space, time and issues related to expectation formation and uncertainty. The new theoretical framework requires a structural approach to economic analysis that takes into account the realities of a certain economy and time period. Therefore, within this new framework, macroeconomic theories should be developed in conjunction with information and knowledge from other academic disciplines. Heterodox economic theory further provides us with a framework that draws on the Social Structure of Accumulation and the French Regulation schools for understanding how capitalist economies change over time and shift from one form of system of accumulation or regulation to another. It considers the shift from an industrialised capitalism to the current financialised phase of capitalism and shows how heterodox theory and models are to adapting to take this important global change into account. The development of a New Economic Theory will benefit from these developments in heterodox macroeconomic theory of investment.

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1. Corresponding author: Seeraj.Mohamed@gmail.com [↑](#footnote-ref-1)
2. Myers (1984) developed the pecking order theory of finance based on a similar view that firms have a hierarchy of preferences with regard to source of financing . [↑](#footnote-ref-2)
3. See for example Hubbard et al (1992), Whited (1992), Gilchrist and Himmelberg (1998), and Bond & Meghir (1994). [↑](#footnote-ref-3)
4. Neoclassical synthesis was developed by [Hicks, J.R.](http://en.wikipedia.org/wiki/John_Hicks) (1937). and popularised by Samuelson (1955). [↑](#footnote-ref-4)
5. Knight (1921) distinguished between risks, which he said is often meant to refer to quantities that are measurable, and uncertainty, which is not measurable. [↑](#footnote-ref-5)
6. The IS curve is flatter when there is a cooperative relationship and steeper when there is a conflictual relationship between capital and labour. [↑](#footnote-ref-6)
7. They include the European Union, Germany, France, Italy, UK, US, Japan, Canada, Australia, Turkey, Mexico, South Korea (henceforth Korea), Argentina, China, India, and South Africa. Because of pre-independence data limitations for eastern European countries when they refer to the EU, they mean the 12 West European Member States of the euro area. [↑](#footnote-ref-7)
8. See the contributions in the edited volume by McDonough, Kotz and Reich (1994) for more in-depth discussion of SSAs and discussions of SSAs in different countries [↑](#footnote-ref-8)
9. See Mohamed (2011) for an analysis of the South African economy taking into account financialisation and the deleterious impact of uncontrolled short-term capital movements on the country’s economic growth path. [↑](#footnote-ref-9)
10. Froud et al (2001) explain that in coupon pool capitalism the differences within the working class are deepened because some workers would own stocks or be invested in financial assets while other workers would not have stocks. Workers who keep their jobs (or have permanent jobs) and own stocks benefit from downsizing while those who lose their jobs (or employment security and benefits) and do not own stock suffer from the downsizing. [↑](#footnote-ref-10)
11. Crotty argues that the end of corespective competition has led to increased pressure on corporations to bring new products and innovations to market quicker. As a result, the technology rents associated with innovations and new technologies have been reduced as the period for extracting these rents have contracted. [↑](#footnote-ref-11)