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Renewed Perspectives in Business Cycle Theory:
An Analysis of Three Heterodox Approaches

Senior Project submitted to
Division of Social Studies
of Bard College

by

Sophia Burress

Annandale-on-Hudson, New York
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Table of Contents

| | |
|--|----|
| Abstract | iv |
| Introduction | 1 |
| Chapter One: The Histories of the Theories | 6 |
| Chapter Two: The Austrian Business Cycle Theory | 18 |
| Chapter Three: Hyman Minsky's "Financial Instability Hypothesis" | 32 |
| Chapter Four: The Geoclassical Cycle Theory | 45 |
| Chapter Five: Analysis | 58 |
| Conclusion | 87 |
| References | 90 |

Abstract

Since the collapse of the housing market in 2007-2008, economists have been faltering to provide basic answers to why and how it happened. Turning back to the history of economic thought, this project examines three models of business cycles: the Austrian business cycle theory, Hyman Minsky's Financial Instability Hypothesis, and the geoclassical cycle theory. Hypothesizing that mainstream economics has rendered its models irrelevant by abstracting from important concepts such as time and uncertainty, I propose that economics does not need to reinvent itself, but rather revisit its past. Using both logic and historical evidence to evaluate the three theories, I conclude that the geoclassical cycle theory is the best explanation of the both the 2008 crash and historical episodes of boom and bust.

Introduction

“Ideas matter, and without an understanding of the economic ideas in play during the recent crisis, it’s impossible to understand how we got into this mess and, more important, how we can get out” (Roubini & Mihm, 2010, p. 39).

Setting the Stage: The Crash of 2008

A brief summary of the crash of 2008 in the United States begins with housing prices rising an average of 73% from 1999-2006 (Gaffney, 2009, p. 6). Built on top of precarious credit markets and financial innovation, the bubble in real estate expanded untenably. Robert Reich (2010) writes in *Aftershock*, “By 2007 the richest 1 percent took in 23.5% of national income,” up from 9% in 1970 (p. 6). This savings glut, exacerbated by a negative balance of payments, found its proverbial home speculating against real estate, adding fuel to the fire. The financial industry took this opportunity to innovate in the mortgage market to exploit rising profit margins. When housing prices appeared to level off in 2006, the subprime mortgage boom set in to sustain Wall Street for a few more years. Meanwhile, the Federal Reserve maintained expansionary monetary policies through 2004. However, even when Greenspan increased the targeted federal funds rate, long term rates stayed at historic lows. The global savings glut from home and abroad kept the mortgage market flush with cash.

Homeowners sat back and watched as their wealth increased; all of sudden it was possible to take out home equity loans to pay for vacations, college education, new cars. Debt levels rose to finance consumption on the expectation that rising home prices would magically eliminate the discrepancy between income and expenses. In 2006 there were \$11.8 trillion dollars in outstanding mortgages, or about 90% of the U.S. GDP (Hudson, 2006, p. 42).

Beginning in 2007, and in full swing by 2008, worries of over-leveraging and declining housing prices had caused the world economy to fall “into the vortex of tightening credit as a result of mortgage delinquencies and foreclosures and the corresponding loss of bank assets”

(Cobb, 2009, p. 7). The unemployment rate rose to 8.9% in April of 2009 from 5% a year earlier (Gaffney, 2009, p. 27). By the fourth quarter of 2008, vacancy rates were at all time highs, net worth had plummeted by 31%, and corporate profits had dropped off by 17% (Gaffney, 2009, p. 28). Comparisons to the Great Depression signified the extent to which financial markets threatened the stability of the entire economy. The purpose of this project is to sift through the isolated facts to compose a story that answers how and why this happened. What drove real estate speculation and financial innovation? How did that translate to labor markets throughout the world?

The need for a comprehensible account became apparent as the crisis unfolded throughout 2008. For all the literature available on financial panics, the inability of mainstream economics to foresee, predict, or advise on the implications of the housing bubble whose crash overwhelmed the economy, is egregious. Fred Harrison (2005), in *Boom Bust: House Prices, Banking and The Depression of 2010*,¹ compares the failure of economists to interpret asset price appreciation with the mechanical failure at NASA to issue warnings of a massive hole in the ozone layer. The computer was recording the data but subsequently disregarding it because it deviated so far from normal levels. Harrison (2005) writes, “The scientists chose to ignore as unimportant the numbers that were too far from what they regarded as the norm...a similar problem arises with the way social scientists apply their knowledge of the working mechanisms of capitalism” (xiii). When housing prices were soaring by 70%, the conventional wisdom failed to respond to such deviations. It has become clear that this was not an unforeseeable accident, but a failure of the self-proclaimed scholars of our economy.

What may be excusable in bankers, and even politicians, is indefensible from professional economists. This project is inspired by that flagrant failure of economists to

¹ Harrison predicted the character of the collapse in 2005 but was incorrect about the date.

constructively contribute to an understanding of our economy. In the face of this failure, this project takes a critical look at three “heterodox” theories of financial crises: the Austrian business cycle theory, Hyman Minsky’s Financial Instability Hypothesis, and the geoclassical cycle theory. What appears to be fate—an unchangeable course of history—is dissected into a comprehensible account by each theory. In part a reproach to neoclassical theory, and in part an exploration of the history of macroeconomic thought, this project is a query into the applicability of theories that mainstream economics has regulated to obscurity. The aim of the project is to shed light on an entire section of economics that has until recently garnered little respect in the eyes of those who inform policy-making.

In contrast to popular literature on the crisis, an economic analysis uses the rigor of logic to systematically document the trajectory of incentives and decisions. Abstracted from the personalities of Wall Street and Washington, economic theories paint a general picture. A theory, moreover, is not merely a prediction in the years preceding an economic collapse. It integrates empirical observations with coherent logic that stands alone independent of current events. The Austrian business cycle theory, Financial Instability Hypothesis, and geoclassical cycle theory do just that. Developed throughout the 20th century, these theories were a part of economic thought long before the housing bubble threatened our economy.

The Current Economic Paradigm

The general wisdom in the weeks and months after the crash was that no one, that is, not even any economist, saw “it” coming. Anecdotes abound in the introductions to newly published books. *Crisis Economics: A Crash Course in the Future of Economics* opens with vice president Dick Cheney, no less, claiming that “no one was smart enough to figure [it] out” (Roubini & Mihm, 2010, p. 1). Slowly but surely, books started to trickle, then pour off the presses.

Numerous authors, with different angles on how our economy's collapse took shape and ultimately brought down "too big to fail" institutions, entered popular culture. *Manias, Panics, and Crashes: A History of Financial Crises* by Charles P. Kindleberger, first published in 1978, put out its 5th edition in 2008. Integral to each were criticisms of the current paradigm.

In what is sadly not a parody, Roubini and Mihm (2010) write of mainstream economics, "[They] claim that there is no such thing as a bubble: markets are perfectly efficient, and if housing values double or triple in the space of a few years and then crash back down to earth—well, that's just the market responding to new information" (p. 38). The Efficient Market Hypothesis, as it is known, proclaims that an asset cannot be over or under valued because "the market is a perfect reflection of the underlying fundamentals" (Roubini & Mihm, 2010, p. 40). Using the Efficient Market Hypothesis as a starting point, economists have been absorbed in buttressing their claims with highly mathematical models that carelessly abstract from reality. As will be emphasized throughout the project, neoclassical models overlook institutional differences, "exiling" these analyses "to the academic sub-basement of 'institutionalism,' claiming that a sphere of study that is not mathematized cannot claim the mantle of scientific method" (Hudson, 2009, para.6).

At the expense of engaging the obvious facts, economists have been lost in their models, comforted by empty assumptions. Kindleberger (2008), in *Manias, Panics, and Crashes*, criticizes the "rational expectations" assumptions, writing that economic models expect "investors to react to changes in economic variables as if they are always fully aware of the long-term implications of these changes, either because they are clairvoyant or because they have Superman-like kryptonite vision" (p. 38). The unwillingness to accept that uncertainty pervades market decisions, that investments today depend on the variable expectations of tomorrow,

characterizes neoclassical models. The resulting loss to the economics profession has been incalculable.

Outline of the Project

Side by side, the theories investigated here are a commitment to the fundamental principles of economics, while simultaneously displaying heterogeneity in their approaches. While employing a theory, the economists who have developed these models stay tethered to empirical observations. Minsky highlights the financial determinates of investment while the Austrians look at the real factors that contribute to savings and investment. Geoclassical economists have broadened their theory from Henry George's insights on the disruptive role of land speculation by adopting key elements of Austrian capital theory and explicitly integrating credit and banks. Throughout this project is the undercurrent that historical data and real complexities need to be confronted.

The project begins with an analysis of the development of ideas through history. Merely by including a discussion of the history of economic thought we have left the realm of neoclassical economics. A concise exposition of each theory, beginning with Austrian economics, which forms a significant basis for both Minsky's work and the geoclassical theory, follows. Finally, there will be an in-depth analysis of each theory's inner validity and of its consistency with reality, concluding with policy implications.

Chapter One: The History of the Theories

An analysis of economic theories needs to begin with an historical approach to set the stage. Economic thought out of historical context appears unanchored. Examining the background of theory, and the particular characters that participated in its creation, gives the reader a broader perspective with which to evaluate each approach. The geoclassical tradition comes from humble beginnings; its founder Henry George was a self-educated man trapped by poverty for most of his life. Working within the classical tradition of Smith and Ricardo, George developed his revolutionary insights on political economy. Mason Gaffney and others have since augmented George's work to create a unified vision of the economy. The Austrian school of thought has a long and distinguished history including many formidable names in economics (Carl Menger, Eugene Böhm-Bawerk, Friedrich von Hayek, Josef Schumpeter). Their rich and varied work adds to many fields of economics, not least of which is business cycle theory. As we will see, Austrian insights have contributed to the other business cycle theories in this project. Finally, Hyman Minsky, educated at the University of Chicago and Harvard, built his Financial Instability Hypothesis on the work of John Maynard Keynes and other contemporary economists. Placing each theory within its historical framework provides an overarching viewpoint that brings depth and grounding to complicated analyses.

I. Henry George and the Founding of Geoclassical Economics

Henry George, despite his interest in political economy, was far from a natural suspect to become one of the foremost economists of his day. Born in Philadelphia in 1839 and chased by extreme poverty throughout much of his adult life, George lived far outside the ivory walls of American educational institutions. Dropping out of school at age fifteen, his formal education was almost nonexistent in comparison to his contemporaries throughout Europe. Moving to San

Francisco, George eventually entered into journalism where he began to study the great economists of the time and formulate his thoughts on the state of the economy.

His seminal work, *Progress and Poverty*, was published in 1879 in the middle of strong labor unrest, which helped to strengthen its impact. The primary thesis, the equity, efficiency, and legitimacy of the public collection of land rent, was built on the classical tradition that came before him. Working within a dynamic equilibrium model with three factors of production, George expanded on the theories of David Ricardo and John Stuart Mill. George Geiger (1993), in *The Philosophy of Henry George*, emphasizes George's singular capacity to theorize on his own, writing, "Certainly the suggestions of the English economists, and especially the rent concepts of Ricardo, prepared the way for the discussion and often the acceptance of George's system, but that was solely because his work [fit] in with much of the thought of the classical economists, rather than that it was any direct outgrowth of it" (p. 211).

George (2008) was moved to study the economy because, as he writes in the introduction, "the enormous increase in productive power...has no tendency to extirpate poverty or to lighten the burdens of those compelled to toil. It simply widens the gulf..." (p. 8). As the wealth of society grows, the presence of degrading poverty also increases. In order to answer this question of why "material progress does not merely fail to relieve poverty—[but] actually produces it," George studied the classic problem of the distribution of wealth (George, 2008, p. 9). By deducing the laws of wages, interest, and rent, George came to his conclusion that the privatization of a public good, that is, land, was the primary cause of poverty. He proposed that because the value of land is the product of the surrounding amenities—society at large (while wages and interest are the result of work of the individual), a community can be justified in taxing its returns.

George's theory of land rent taxation was based in large part on the principle of justice that he felt to be inherent in the public collection of rent.² By first proposing the claim that one man owns the product of his labor because of his natural "right to himself," George deduced that man cannot rightfully claim ownership to something which he has not produced (George, 2008, p. 334). It follows that because no man created the earth, no man can claim exclusive ownership of its gifts. Levying a tax on the value of the land, exempting improvements, is thus just because each person has an equal claim to land's returns.

Using these conclusions, George was one of the first economists to attempt to explain "the primary cause of recurring periodic paroxysms of industrial depression" (chapter title in *Progress and Poverty*). George theorized that rising land prices lower the returns to labor and capital until production ceases and the economy enters into a depression. The growth of population and income, along with technological innovations, initiates the demand to bring more land into use, or to increase the intensity of land use. Because land is fixed in supply, its price will necessarily increase when economic activity increases. When rent is privatized, the expectation of higher future rents will induce the landowner to increase the asking price above its current return. This speculation is a positive feedback loop: naturally rising rent creates the expectation of further increases, pushing up demand and therefore affecting the current rent. As landowners raise rent, and receive more and more of the returns to production, capital and labor reduce their portion and are literally forced off the land until at some point production slows. George (2008) gives three causes that will "cooperate to produce a new equilibrium:" land prices decline, labor and capital increase in efficiency to pay the high rents, and/or labor and capital "become reconciled to engaging in production for smaller returns" (p. 265). While George's

² He writes, "The conflict that is sure to rage is not so much to the question, 'Is it wise?' as to the question, 'Is it right?' ...I bow to this arbitrament and accept this test." (George, 2008, p. 333).

theory was the best at the time, it does not explain the fact that land prices crash before production slows. In the fourth chapter on the geoclassical cycle theory we will see how economists have expanded George's initial observations into a coherent theory.

Geoclassical Cycle Theory Today

The success of the early Georgist movement seems to stem as much from the force of George's personality as from his ideas and writings. He was a gifted speaker and easily won audiences both here and in the UK. Geiger (1933) describes George as "trying to take each [audience member] by the coat lapels and convince him individually of the great truths he felt to be surging within him..." (p. 59). George's success in New York City's mayoral elections in 1886 and 1897, despite losing marginally in the first and dying a few days before the election in the second, are a testimony to his ability to capture the minds of many without party support or adequate funding (Geiger, 1933, p. 68).

Beginning in the mid-20th century with Mason Gaffney, George's work has been extended by incorporating Austrian capital theory, historical work, and independent theorizing. The belief that institutions and complex variables such as time and knowledge affect business cycles is throughout the extension of George's work. As we will see, Gaffney complements George's insights while retaining his essential connection to real world phenomena. The addition of historical data that correlates the business cycle with land price appreciation and the integration of Austrian capital theory build a strong foundation for the geoclassical theory. The use of mathematics to formalize and synthesize George's points has also added to the validity of the theory. In addition to Gaffney, other contemporary economists such as Michael Hudson and Fred Foldvary have added their unique perspectives to the Georgist cycle theory.

II. The Austrian School

Carl Menger, born in 1840 in Austria, is the undisputed father of Austrian economics, and one of the independent founders of marginalism. His *Principles of Economics* is a testimony to the marginalist and subjectivist tradition which has become Austrian economics. Because Menger refused to allow his *Principles* to be republished or translated in his lifetime, his ideas were popularized for an American audience in the late 19th century by his students, Eugen von Böhm-Bawerk and Friedrich von Wieser. Böhm-Bawerk and Wieser, however, truncated much of what made Menger distinctive in order to participate in the growing neoclassical community. It would not be until well into the 20th century that Ludwig von Mises and Friedrich von Hayek, among others, would pick up on Menger's insights and resurrect them anew to formulate a general business cycle theory. Mises and Hayek together form the basis of the current Austrian business cycle theory.

One of Menger's most iconic contributions to the Austrian school was the *Methodenstreit*, a debate with Gustav Schmoller, of the German historical school, on the appropriate methods with which to study economics. Menger insisted that a theoretical structure is essential for economic study, while Schmoller believed that because of the complexity of the economy, observations and statistical methods were of the utmost importance. The occasionally hostile debate, during which both economists conceded the validity of the other, is viewed by many economists as a waste. Bruce Caldwell (2010), however, argues in *Hayek's Challenge* that it was the event that defined the Austrians as a distinct school of thought. The idea that deductive reasoning is the best way to approach economics has remained central to the Austrians. Furthermore, distrust of statistical analysis defines the Austrians and separates them from the current economic paradigm.

Böhm-Bawerk, writing at the turn of the 20th century, was one of the first economists to develop a robust capital theory. Karen Vaughn (1994) in *Austrian Economics in America* writes that Böhm-Bawerk attempted to formalize his theory by “reintroducing Ricardian elements...such as a classical wages fund and an average period of production” (p. 35). Vaughn (1994) goes on to show that Menger was wholly against this development, calling it “one of the greatest errors ever committed” (p. 35). Today many Austrians believe that Böhm-Bawerk did a disservice to capital theory by avoiding Menger’s subjectivist approach. In “Austrian Capital Theory: The Early Controversies,” Roger Garrison (1992) states that those “who applaud the Austrian resurgence...who believe that the economy’s multistage structure of production is trivialized by the ‘average period’ are likely to agree with Menger and to see Böhm-Bawerk’s error as ‘one of the greatest’” (p. 153). Vaughn also demonstrates that while Böhm-Bawerk did emphasize ideas such as time and process, because of his formalism his ideas were debated squarely within the neoclassical tradition. Later Austrians would revise Böhm-Bawerk’s formalistic capital theory to fit into a subjectivist framework.

Hayek, writing on the business cycle during the Great Depression, was an Austrian who revived Menger’s subjectivist approach to capital. G. R. Steele (1993), in *The Economics of Friedrich Hayek*, writes that in opposition to Keynes who overlooked “the importance of the composition of those unused and underused resources,” Hayek felt that the structure of production was an essential explanatory factor of the boom/bust (p. 162). The continuation of thought from Menger through Hayek and to today makes it clear that the Austrians emphasize the importance of capital in the economy.

Ludwig von Mises complemented the work of Friedrich Weiser and influenced Hayek through his work on monetary theory. Mises recognized that money was useful mainly because it

reflected relative scarcities and the changing desires of market participants. Vaughn (1994) writes of Mises' position, "the level of prices themselves [is] not nearly so important as the process by which prices are formed and the flexibility with which they can change to reflect new circumstances" (p.89). Mises finds discoordination in the market system to be the result of "bad banking institutions" or poor government policies (Vaughn, 1994, p. 90). To Mises, business cycles had exogenous causes that mislead entrepreneurs to alter capital investment. The change in relative prices by "misguided credit policies" affects which investments are most productive and therefore the structure of production—concepts that were first developed by Böhm-Bawerk (Vaughn, 1994, p. 90). The Austrian business cycle theory continues to emphasize this connection between monetary fluctuations and capital investment.

Hayek's Cycle Theory

The Austrian theory of the business cycle extends and draws heavily from Hayek's 1933 *Monetary Theory and the Trade Cycle*. Caldwell (2005) reconstructs Hayek's methodological argument into four fundamental claims. The first proposition is that one must employ a theory in order to explain business cycles (a claim that dates back to Menger), and the second is that one must use an equilibrium approach. Hayek insisted that the use of equilibrium theory was a simplifying but necessary assumption, which must be used with care. In order to avoid abandoning the concept of an equilibrium, Hayek argued that a theory of business cycles must be monetary because money is the only element that can "cause the 'closed' system of equilibrium to break down" (Caldwell, 2005, p. 160). The final claim is that any monetary change can not be general but must change relative prices in order to affect the real economy and alter the structure of production into unsustainable investments.

Hayek's cycle theory is the culmination of the work of many preceding Austrians including Menger, Weiser, Böhm-Bawerk, and Mises. However, Hayek did not think that the precipitating cause of the cycle necessarily needed to be of monetary origin; Caldwell (2005) quotes Hayek writing, "Nor, in practice, is this even generally the case" (p. 161). Hayek believed it was the elasticity of our credit system that allows disturbances in the economy to become amplified. Current Austrian economists do not agree with him on this count. Today the accepted view is that government intervention affects the money supply, which then creates the impetus for the business cycle.

Entrepreneurial Theory

In addition to the bare methodological framework that describes only the most general pattern of the business cycle, Austrian economists insist that the individual, the entrepreneur, is an integral participant in the business cycle. Israel Kirzner and Josef Schumpeter are two Austrian economists who are known for their entrepreneurial theories in dynamic equilibrium models. Schumpeter was the "enfant terrible" of the Austrian tradition, often explicitly disagreeing with its basic tenets by endorsing both formalism and positivism (Caldwell, 2005, p. 130). Vaughn (1994) writes of Schumpeter's theory: "Entrepreneurs destroyed old patterns of behavior as they introduced their creations into the system. Hence, entrepreneurship was inherently innovative and therefore destabilizing..." (p. 143).³ In contrast, Kirzner's theory, in keeping with a stabilizing equilibrium model, emphasizes entrepreneurs as economic actors who see profit opportunities that others miss. Because profit is a disequilibrium phenomenon, entrepreneurship is a stabilizing force that balances the economy. As time progresses, entrepreneurs will consistently move the economy towards equilibrium. Austrian economics

³ Schumpeter's theories would heavily influence Hyman Minsky and his work on the Financial Instability Hypothesis.

follows Kirzner's theory, disagreeing with Schumpeter's vision. The tension between Kirzner and Schumpeter will become obvious in the Chapters Two and Three on the Austrian business cycle theory and Minsky's Financial Instability Hypothesis.

What becomes clear as one works through the literature on the early Austrian economists is that their insistence on free markets is not because they feared the government, but because they had a genuine appreciation for the complexity and unassisted working of the market. Hayek, an iconic Austrian, was not surprised that economies periodically crashed, but that they managed to function at all. Vaughn (1994) captures Hayek's position writing, "...neoclassical economics has mis-specified the economic problem: It assumes perfect knowledge in markets when the question that one really wants to answer is how does anyone come to know what it is we assume in the first place" (p. 56).

III. Hyman Minsky and the "Financial Instability Hypothesis"

Minsky has enjoyed a resurgence of popular interest since the 2008 financial crash appeared to validate his Financial Instability Hypothesis. Fully developed in the 1986 book *Stabilizing an Unstable Economy*, Minsky's theory of over-confident bankers exploiting endogenous profit opportunities has remained controversial within mainstream economics. Only when the unregulated mortgage market threatened to take down all of Wall Street did Minsky's insights resurface in current economic research.

Born in 1919, Minsky was heavily influenced by the Great Depression while coming of age and cites it as his motivation for becoming a professional economist. His father was a member of the Socialist Party, another influence which can be seen in his later inclination towards progressive social policies. Dimitri Papadimitriou (1992) writes, in "Minsky on Himself," that Minsky graduated from the University of Chicago in mathematics, and that his

interest in economics was sparked there by participating in seminars with scholars such as Lange, Knight, Douglas, and Simons. After serving in World War II, Minsky went to Harvard for graduate school, studying under Alvin Hansen and Josef Schumpeter, among others. The work of John Maynard Keynes formed Minsky's basic understanding of economic phenomena. Minsky, however, never accepted the "conventional and almost mechanical interpretation of countercyclical fiscal policy" that dominated Harvard-Keynesianism during his graduate studies (Papadimitriou & Wray, 1998, p. 200). He kept his intellectual ties to the University of Chicago and retained important connections to professors he knew there, specifically Henry Simons and Oskar Lange. Papadimitriou (1992) outlines their contributions to Minsky's thought, explaining Hansen's theories on the efficacy of aggregate interventions, and Simons on the importance of state market structures (p. 19). Those early influences form the fundamental grounding for Minsky's later work.

Minsky felt indebted to his predecessors, standing on the shoulders of Keynes and Schumpeter. In *Stabilizing an Unstable Economy* he builds from Keynes' theory of investment, while reflecting Schumpeterian and generally Austrian influences through the insistence on the importance of time and heterogeneous capital investments. In "The Economic Contributions of Hyman Minsky: Varieties of Capitalism and Institutional Reform," Papadimitriou and Wray (1998) write, "[Minsky's] work represents one of the most important links between Post-Keynesians and Institutionalists" (p. 201).

Minsky knew that institutions were an integral part of the economy. Papadimitriou and Wray (1998) write, "[Minsky] would ask: what sort of economic theory can be applied equally well to a tribal society, a peasant economy, a small government capitalism, and a big government capitalism with complex financial arrangements?" (p. 201). The use of institutions and

government to “act as circuit breakers...to contain the evils that market systems can inflict,” is a reflection of Minsky’s Keynesian approach to macro-economic stability (Papadimitriou & Wray, 1998, p. 201). However, his insistence on the importance of institution-specific theories leads him to adopt a very Austrian-friendly capital theory. The importance of long-lived capital assets to financial innovation is critical to the Financial Instability Hypothesis. Minsky stops short of making a connection between the low price for capital in financial markets and the effects of a change on its relative price on real production, but he clearly sees beyond the neoclassical conception of capital as a lump-sum investment. Contributions from Austrian economics helped to formalize Minsky’s thoughts on the interrelations between institutions and investment that neoclassical economics assumes away.

The presence of the profit-seeking entrepreneur, developed by Schumpeter, heavily influences Minsky’s understanding of market processes. Beginning with his first publications, Minsky emphasized the dynamic role of institutions and profit motives to the economic structure, “demonstrating how innovation allows business activity to expand even in the absence of expansionary monetary policy” (Papadimitriou & Wray, 1998, p. 203). To Minsky, capitalism was an economic system that was always evolving in response to endogenously created variables. The entrepreneur is the destabilizing element of an economy with advanced financial arrangements. The conflict between Minsky (and Schumpeter) and Austrian economists, who feel that entrepreneurs are an equilibrating force, is clearly evident here.

Minsky rejected the assumed optimality of endowments and lack of interpersonal comparisons in neoclassical analysis. In the introduction to *Stabilizing an Unstable Economy* Minsky (2008) states that “economic policy must reflect an ideological vision; it must be inspired by the ideals of a good society” (p. 9). The institutions and policies of a society must be

designed in accordance with notions of efficiency, liberty and justice. Consequently, economic theory must also reflect those beliefs.

§§§

When the histories of these three independent theories are taken into account the extent to which they move together is striking. Each draws explicitly or implicitly from Austrian theorists such as Menger and Böhm-Bawerk, and each takes a similar approach to the current mainstream paradigm. Their resistance to neoclassical economics highlights their interconnections and unites them against an indoctrinated point of view. While each theory makes distinct contributions, an evaluation in light of the past emphasizes that they have more in common with each other than at first glance.

Chapter Two: The Austrian Business Cycle Theory

Austrian economists have developed a theory of business cycles that proponents consider one of the best explanations of cyclical variations in economic productivity. At its base the Austrian theory is about monetary fluctuations in both the impulse for and propagation of the cycle, but the unique characteristic that distinguishes it from other schools of thought is a result of the attention paid to capital investment in the real economy. Moreover, it claims to unite the often conflicting short run and long run models of macroeconomics. John P. Cochran (2001), in “Capital-Based Macroeconomics: Recent Developments and Extensions in Austrian Business Cycle Theory,” writes, “The long run is the series of short-run adjustments. The Austrian model thus provides a single model of the short run, medium, and the long run.” (p. 23). Since the burst of the housing bubble in 2008, there has been a resurgence of interest in the theory because the distinctive features of Austrian economics insist on a new perspective of how and why economies consistently experience boom and bust.⁴

Underlying Assumptions

In Austrian economics, knowledge is imperfect and dispersed throughout the economy, with some entrepreneurs aware of information that others do not have access to and vice versa. Underlying economic realities are relayed to investors through different indicators such as the price level, wage rate, and interest rate. Using this information entrepreneurs make decisions they think will be profitable. Over time those investors who consistently make poor decisions will be forced out by competition; it is the collective wisdom of investors and the competitive market system that leads to a stable economy in the long run.

⁴ See Tempelman, 2010

Austrian theorists argue that business cycles are caused not by general overproduction or under consumption, but by mismatched consumption and investment. William Anderson (2009), in “Say’s Law and the Austrian Theory of the Business Cycle,” argues that Say’s Law, developed by French economist Jean-Baptiste Say in the early 19th century, is a necessary but not sufficient condition of the Austrian business cycle theory. Say’s Law points to the intrinsic connection between aggregate demand and supply of goods in an economy. Paraphrasing, Anderson (2009) writes, “At its most simple point, it is an economic tautology: one cannot consume without first producing, and what one produces becomes a basis for determining what one consumes” (p. 58). Workers labor in order to consume, not for the sake of production. It follows that if the economy is producing in tandem with the preferences of its consumers, production and consumption will be aligned and there can not be disequilibrium.

The intentions and preferences of both consumers and investors, in conjunction with the time element of production, are critical to Austrian theory. A subjectivist approach to capital theory explicitly includes the fact that production satisfies individual, changing desires for final goods. Garrison (1992) writes, “The economic significance of [capital investment] can be understood only in terms of present ‘human purposes’ and future ‘wishes and needs’” (p. 142). In addition, capital production cannot be understood with a static model. Garrison (1992) argues that the understanding that time is major part of the production process has been minimal in neoclassical economics since John B. Clark’s assertions that production and consumption happen simultaneously, thereby abstracting from subjective preferences. In reference to Clark’s iconic example in *The Distribution of Wealth* of a forest used for timber production, in which Clark asserts that the time it takes for a tree to mature is irrelevant because cutting and planting can take place at the same point in time, Garrison reframes the argument by highlighting that time

can only be considered unimportant when the purposes of the individual actors are ignored. In one instance there is planning for perceived future needs, in the other there is fulfillment of current consumption. By assuming that the subjective desires of market participants are fixed, the time element is “simply obscured” but not rendered irrelevant (Garrison, 1992, p. 143). In reality, investment today will not necessarily fulfill the desires of tomorrow.

High and Low Order Capital

Austrian economists highlight the time element of capital by disaggregating it from a lump sum investment. Instead, capital can be of “higher” or “lower” order. High-order capital is investment in projects that are far away from consumption—infrastructure or basic research, for example. Low-order capital is very close to consumer goods; business inventories are one example. Following the progression from high to low, “first-order” goods are consumption goods. How “far away” capital investment is from first-order goods is determined in part by the amount of time it takes for a final good to be produced. Economies whose production processes are characterized by a large amount of high-order investment are said to be more “roundabout,” meaning that their production is longer and more in depth. Countries develop their economies by choosing investments that enhance the scope of their production process, allowing for the production of consumer goods that require more capital input.

High order capital, because it is invested for long periods of time, is relatively “fixed” and turns over slowly by nature; low order capital “circulates” and turns over quickly. This can be intuitively understood by using the Austrian concept of a “continuous-input point-output” model of investment and consumption.⁵ Consumer goods, by definition, are consumed during one point in time; their economic life is short. Capital goods “near” consumption (low-order

⁵ The model can be expanded to continuous-input—continuous-output but without adding any important insight to the theory.

capital) have longer economic lives by degree; the “further” away from consumption goods, the longer the expected life of the capital investment. This range of investment is a continuous process. The implication is that fixed capital investments will have effects on economic production for many years after their completion.

The Link between Investment and Savings

Consumers have positive time preferences if, all other things equal, they prefer consumption today over consumption tomorrow. Negative time preferences are possible theoretically but rarely, if ever, encountered empirically. Therefore, if consumers are saving today, it must be because they expect to be compensated in the future with more. As a result, consumer preferences for future consumption, and therefore current investment, are assumed to be manifest in their savings level.

The natural rate of interest, first introduced by Knut Wicksell, is the interest rate that balances savings and investment in the economy. A high natural rate of interest implies high time preferences (oriented towards current consumption) and low savings. A limited amount of investable funds will prompt entrepreneurs to find investments that produce returns quickly, i.e., low-order capital “near” first order consumption goods. If preferences change and the natural rate of interest is lower, it will reduce borrowing costs, allowing entrepreneurs to invest in high-order capital. This creates an endogenous equilibrium where investment over time is in line with consumption preferences over time.

It follows that for the economy to invest in projects that are capital-intense, profitable, and in line with general preferences, consumers must be forgoing current consumption in order to save. If, however, the supply of money is in flux then the price of financial capital is subject to change even though consumer preferences have not.

Central Bank Interference and Capital Malinvestment

Remember from Chapter One Hayek's methodological reasoning that only a monetary explanation can break the "closed system" of an equilibrium model of the business cycle. Today the Austrian position is that expansionary central bank policy expands credit by increasing the money supply and lowering the equilibrium interest rate, thereby affecting the relative price of interest-sensitive capital investments. How entrepreneurs interpret the underlying economic reality in the face of new price incentives, and therefore how resources are invested in the economy, determines the path of boom and bust.

The actual market interest rate of capital is determined by both the amount of money in the economy and the natural rate of interest. When the supply of money is increased by a central bank, it is generally introduced through open market operations that work in credit institutions. The increase in the supply of money pushes down the equilibrium market rate of interest below the natural rate of interest. In reference to the basic model of supply and demand for money, with an inelastic supply of money and decreasing demand curve, an increase in the money supply shifts the vertical line to the right, reducing the interest rate. However, because market participants do not have perfect information, Austrian economists argue entrepreneurs will misinterpret the change in interest rates as a change in the real capital markets. Thus, Cochran and Glahe (1994) explain in "The Keynes-Hayek Debate: Lessons for Contemporary Business Cycle Theorists" that the "new" money is lent out at a lower rate, which "causes projects that were previously viewed by entrepreneurs as unprofitable to now appear to be profitable, and investment [will] increase" (p. 77).

Instead of a rise in the overall price level and a nominal increase in the interest rate to reflect general inflation, entrepreneurs will observe a change to the price of capital, making

longer, capital-intense, projects *relatively* more profitable. Real resources will be reallocated accordingly, although there has been no change in consumer preferences to warrant those new projects. New projects, as well as existing projects as they are renewed, will be affected by the change in the cost of borrowing. The Austrians call this “malinvestment” and “overinvestment.” The distinction is subtle but it rests on the fact that some investment will just be ahead of demand (overinvestment), while some will be completely sunk into uneconomic projects (malinvestment). Neither is desirable, but to the extent that the malinvested capital is unrecoverable, it is a larger detriment to society and the underlying cause of the downturn.

Effects of the Lower Interest Rate on Savings and Consumption

In addition to the effects on investment decisions, the lower interest rate will reduce savings. When the market interest rate decreases, the marginal saver begins to consume more, reducing the amount of savings in the economy by a move along the savings supply curve. In Figure 1 below, this is depicted in the bottom graph. The new equilibrium rate (i^1) simultaneously reduces savings (increases consumption) and increases investment. This “overconsumption,” in Austrian parlance, draws down on low-order and first-order goods. The cost of borrowing for entrepreneurs, however, is maintained by the central bank through open market operations at the lower level *as if* the savings curve had shifted in the economy,

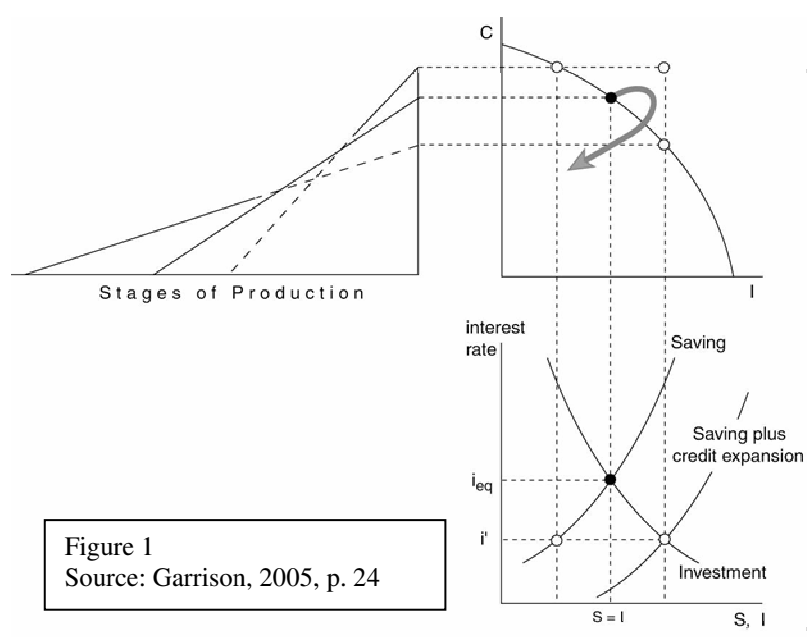


Figure 1
Source: Garrison, 2005, p. 24

encouraging development in high-order goods. This discrepancy in the economy is the fundamental instability of expansionary monetary policy.

Using the concept of the Hayekian triangle, we can see how the economy is pulled in two different directions—towards both investment and consumption. In Figure 1, the graph on the upper left hand side of the diagram represents a Hayekian triangle. It shows how the production process relates directly to the output of consumer goods. The horizontal axis represents the stages of production, with the leftmost area referring to the investments “farthest away” from consumption goods. The vertical axis represents the amount of consumer goods. It is a continuous-input—point-output construction; production takes time but consumption does not. The hypotenuse “reflects”⁶ the rate of return of capital in the economy; a steep slope indicates production of a lot of consumption goods and reflects a high natural rate of interest. The horizontal axis, production, will be relatively short in comparison to the amount of consumption goods. A low natural rate of interest with many capital-intense projects is reflected by a flatter slope, indicating fewer consumption goods and a longer production process. The graph in the upper right-hand corner is the sustainable production possibilities frontier.⁷ The economy is on a continuum that depicts the tradeoff between consumption and investment. Connecting the hypotenuse of the Hayekian triangle to the sustainable production possibilities frontier indicates how much consumption there is in the economy, which then corresponds to the intersection of savings and investment in the loanable funds graph below. When the central bank forces down interest rates (see the bottom graph, “saving plus credit expansion”), the effects of lowered saving (a movement along the initial “saving” curve) and increased current consumption translate

⁶ Garrison (2001) in *Time and Money* writes, “Reflects is as strong a connection as can be made here. With a continuous-input construction, the slope of the hypotenuse reflects more than the interest rate. The value differential across any given stage is partly attributable to inputs being added in that stage and partly attributable to the change in temporal proximity to final output.” (p. 50).

⁷ The arrow shows the path the economy will take during a boom/bust—first pulled beyond the sustainable frontier, and then back, ultimately far inside of optimum output.

to the sustainable production possibilities frontier and over to the Hayekian triangle. The economy is pulled towards both consumption goods and capital investment. The Hayekian triangle effectively has two different hypotenuses—one with a large slope and one with a smaller slope—with a dip in production where they meet. Capital “in the middle,” that is, capital maintenance like repairs to machinery and regular upkeep—will be sacrificed to projects on either end of the production process.

The change in investment represented by the Hayekian triangle can be understood more clearly by explicitly disaggregating capital to examine how changes in prices will affect investment throughout the structure of production. When a lower interest rate reduces the amount of savings and increases the quantity demanded for current consumption, industries closely related to consumption are affected. Although they may not be “consumption industries,” their proximity in the production process to the desired first-order goods will increase demand for their products as well. This is termed “derived demand” in Austrian economics. In industries that use high-order capital, the effect of a lower interest rate is a decrease in the cost to hold that capital. Business inventories are the most obvious example of the “carrying cost” of capital, but the more capital-intense the industry, the larger the benefits of the reduced cost. Austrian economists term this the “time-discount” effect. This effect is what helps to pull the slope of the Hayekian triangle out toward high-order capital goods, while the derived demand effect increases investment in industries near consumption.

The Length of the Boom

Garrison (2001) argues that the general over-investment and over-consumption which pulls the economy beyond its sustainable production possibilities frontier is crucial to explain how the boom perpetuates itself. He acknowledges that reduced savings and increased income

from wages in the investment sector will be spent immediately. However, to the extent that the central bank keeps interest rates low and there is scope for the economy to over invest in *all* industries, the boom will continue. Garrison (2005) writes in “The Austrian School,” “Credit expansion papers over the credit shortage that would otherwise exist” (p. 31). In *Time and Money* he says, “money—because of the looseness that is inherent in the nature of indirect exchange—plays a key enabling role” (Garrison, 2001, p. 68). For the boom to persist it is central that the role of money in an economy allow for misallocations to be concealed by general over-production for a period of time. Another reason comes from the critical (though perhaps implausible) assumption in Austrian theory that entrepreneurs are not able to foresee or adapt to monetary policy. The complexity of the process prevents individual entrepreneurs from being fully informed of their role in the malinvestment and hence adjusting their behavior.

Relationships in the Real Economy and the Turning Point

Austrians argue that the effects of monetary policy can be sustained only so long before relationships in the real economy take over. Because money enters the market through credit injections, the boom is biased toward investment projects. Credit is first extended to entrepreneurs who invest, and then to wage-earners who spend their income. To the extent that interest rates are kept low so that high-order capital investments are relatively more profitable, entrepreneurs will continue to favor them. However, effects in the real economy will increase the derived demand effect and the flow of expenditures will be greater towards first order goods.

During the course of the boom consumer prices will have to increase because of the increased demand that is not met by a corresponding increase in current consumption goods. Furthermore, the lack of capital maintenance will impede the production of consumer goods. As profit margins in consumer industries increase, resources will be bid away from other areas of

production. The competition for resources in all sectors of the economy will push up prices beyond profitable levels for capital-intensive projects. “Plant and equipment [will] become idle because the needed complementary resources are not available at prices that justify continued production” (Cochran & Glahe, 1994, p. 79). In other words, the real opportunity cost of capital in those malinvested industries will become apparent.

The results are layoffs and capital liquidation or reallocation. Reallocation of capital takes time according to its specificity. For example, a truck used in a construction company is easily sold to a different firm, but the timber in a house will be “tied up” for years. Because capital has been wasted in unprofitable projects, there is a lack of complementary resources to re-employ labor immediately. Although the main turning point of the boom is due to scarce resources and the increase in their relative prices, the economy does not have to be operating at full employment for a credit-induced expansion to be detrimental. If a central bank expands monetary policy when the economy is not growing, or even when it is shrinking, in order to stimulate growth, the policy will still affect relative prices and therefore entrepreneurial expectations for the profitability of capital investment. To the extent that investment is not determined by consumer demand, the growth will be unsustainable in the long run.

The Depression

The length of the depression is determined by how long it takes to reallocate capital and by the amount of capital that has been completely wasted. Garrison (2001) writes, “Almost inevitably, some of the malinvestment in early stages of production would involve capital that is sufficiently durable and sufficiently specific to preclude a quick resolution” (p. 74). One of the main misunderstandings throughout critiques of the Austrian business cycle is the assertion that there is no explanation in the theory for significant unemployment. Gordon Tullock (1987) in

“Why the Austrians are Wrong about Depressions,” writes that after the interest rate has increased again, “there is now more equipment...than there would have been had the government not depressed the interest rate. Thus, the demand for labor to work with it will be higher than it would have been had these investments not been made” (p. 75). In a footnote he notes that some capital may be labor-saving and thus depress employment, but that does not wholly invalidate his point. The error in his logic stems from an oversight of one of the most fundamental points in Austrian theory. Because the government affected the relative price of capital, entrepreneurs invested in capital projects that were not warranted. Gaffney (2009) emphasizes that capital does not always increase employment. “Capital is capable of complementing labor, but the extent to which it actually does so depends entirely on how it is invested” (Gaffney, 2009, p. 76). The presence of “more of this equipment than there would have been” creates employment only during the boom when the project stills appears to be profitable (Tullock, 1987, p. 75). Once the lack of demand and increase in relative prices reveals that those investments were bad decisions, the capital is no longer complementary to labor.

Paul Krugman (1998) in “The Hangover Theory” argues that the only explanation Austrian economists present for decreased employment during a depression is structural unemployment as workers switch industries. He goes on to say, “But in that case, why doesn’t the investment boom—which presumably requires a transfer of workers in the opposite direction—also generate mass unemployment?” (Krugman, 1998, para. 6). While trying to denounce the Austrian theory, Krugman describes the previous investment boom as both “perfectly good productive capacity” and “bad investments,” without apparently realizing that he is referring to the same thing. The point the Austrians highlight is that investment during the boom *did not* create “perfectly good productive capacity;” the capacity is economically worthless

because there is no demand for it. Again, the real wealth in those “bad investments” is sunk and the economy no longer has the resources to operate at full employment.

Austrians categorize the subsequent depression as “secondary” because it results as a consequence of the primary problem of expansionary monetary policy. Unemployment in malinvested industries will have negative income effects that permeate the economy. Investors lose confidence and liquidity preferences increase. As market participants become risk averse in the face of poor economic conditions, the downward spiral continues. Krugman (1998) writes in the same article, “A recession happens when, for whatever reason, a large part of the private sector tries to increase its cash reserves at the same time...if the problem is that collectively people want to hold more money than there is in circulation, why not simply increase the supply of money?” (para. 7). This again abstracts from the major insights of the Austrians. The depression is caused not by “whatever reason” but because of specific investment decisions that have wasted capital. The increase in liquidity preferences is not the main problem (which Krugman implies, but then disregards) and increasing the money supply will not fix the underlying distortions.

Austrian economists are adamant that more expansionary monetary policy cannot sustain the boom indefinitely. Cochran and Glahe (1994) write, “The [boom] could be maintained for a longer period only if credit (and the money supply) increases at a progressive rate producing an accelerating rate of inflation.” (p. 80). In order to stay ahead of the change in relative prices the central bank would have to increase credit faster than market participants change their expectations. If hyperinflation ensues, money loses its utility as a useful store of value or means of exchange. In general, however, inflation and deflation are secondary concerns in the Austrian theory. A change in the overall price level is not needed for a credit-induced boom to create

distortions in the economy. If the boom is partly supported by real growth, the subsequent downward pressure on prices may be completely, or more than completely, offset by expansive monetary policy. Similarly, while deflation as the result of real growth accompanied by a stable money supply is not considered problematic, if it is caused by monetary contraction it will “put undue burdens on market mechanisms” (Garrison, 2005, p. 40).

Policy Recommendations

Austrians argue for limited policy intervention once a boom is recognized as unsustainable. One of the first points that Garrison (2009), in “Interest Rate Targeting During the Great Moderation: A Reappraisal,” emphasizes is that during a recession policy makers do not understand the nature of the problem and therefore their measures will be ineffective at best. In response to current Fed policy, Garrison (2009) worries that the uncertainty surrounding new policies will only increase anxieties in the market. Government attempts to lower the interest rate and increase credit in the economy will be met with resistance from bankers and entrepreneurs who have neither the financial capital to support investments, nor the expectations that any investment would be profitable. On the other hand, if the policies are successful, it will only recreate the conditions necessary for the next business cycle. Paul Krugman, in an editorial seven years after his initial critique of the Austrian theory, used this argument to explain monetary policy after the dot-com crash. “Interest rate cuts led to soaring home prices...the job losses would have been much worse if the stock bubble hadn't been quickly replaced with a housing bubble. So what happens if the housing bubble bursts? It will be the same thing all over again, unless the Fed can find something to take its place.” (Krugman, 2005, para. 4, 13). Austrian theorists insist that replacing bubbles only prolongs the unsustainable growth and sends mixed signals to investors.

Looking forward, Austrians see the policy prescription for business cycles to be prevention. Cochran and Glahe (1994) write, “A crisis can be prevented by not allowing the boom to proceed too far. This is the most important role of policy.” (p. 81). Because the interest rate is determined by complicated market forces and is such a crucial indication for investment, Austrian theorists worry that a central bank will never be able to successfully target the natural rate. Garrison (2009) therefore argues that the benefits and costs of decentralized banking should be evaluated. “At the very least, a better understanding of the workings of a decentralized monetary system would help identify the perils and pitfalls of continued centralization.” (p. 199). Cochran (2001) states that sound, not stable, monetary policy would enable growth without causing instabilities.

Chapter Three: Hyman Minsky's "Financial Instability Hypothesis"

Hyman Minsky is famous for articulating the belief that stability in the financial industry is only a transition towards a boom that will crash. Growing up during the Depression and witnessing the distress in the late 1960's and 70's, Minsky hypothesized that the conditions of instability were generated during the seemingly calm moments on Wall Street when bankers became comfortable and turmoil was receding into the past. Minsky fully developed his Financial Instability Hypothesis to add to John Maynard Keynes' theory of investment by asking *how* capital assets are financed. He finds that the specific cause of instability is that "in such a capitalist economy financing arrangements are likely to appear in which debtors pay debts not with cash derived from income production but with cash derived from issuing debt" (Minsky, 2008, p. 222). When an economy has an innovative financial sector and is producing capital assets with significant gestation periods, endogenous forces will push the economy into instability. Minsky (2008) recognizes that while *laissez-faire* is useful for many markets, stability can be maintained only if our policy makers and economists realize that "capitalism is flawed precisely because it cannot readily assimilate production processes that use large-scale capital assets" (p. 6).

Standard theory and current Keynesian interpretations, Minsky argues, operate within the heroic assumption of perfect knowledge and outside of moving time. Investment, the driver of the economy, is reduced to household saving propensities. He writes, "Current theory makes an economy a lifeless arena...each and every participant is powerless; the market is a thoroughly imperial and majestic instrument of control" (Minsky, 2008, p. 115, 118). The "science" of neoclassical economics has eliminated considerations that are essential to economic activity like uncertainty, investment, and finance. Furthermore, the role of money, capital, and savings in standard theory are inadequate to explain the most important phenomena in our economy.

Minsky and Keynes

Minsky understands capital investment through the lens of Keynes' 1936 *The General Theory*. People can choose to hold money and assets close to money such as Treasury bonds, or they can invest in capital production. When the interest rate indicates that the marginal return to capital investments is higher than the return to money, investment rises. Future expectations and preferences for liquidity play interconnected roles in determining whether to invest. If future expectations are low, the desire for liquidity to create a buffer against worries of defaults will lower investment. However, when expectations for economic progress are high it implies that future returns to capital are expected to be large. In this situation liquidity is not perceived as particularly necessary because expectations on the return to capital are strong; as a consequence, investment grows. Minsky's critique of Keynes is that the decision to invest needs to be accompanied by a theory of how that investment is financed. Because debt structures become so integrated during an investment boom, with the payment of one person's debt needed to complete a long chain, the implications for default, and destabilization, are considerable.

Capital Assets

Minsky (2008) begins by broadly stating:

Capital assets can be produced; and the production of capital assets is called investment. The price buyers are willing to pay for investment is derived from the income that the resulting capital asset is expected to yield. p. 192

Minsky names those returns to capital "quasi-rents," a term first used by Alfred Marshall to distinguish the short-run returns to capital above interest and depreciation because of an unexpected increase in demand. As will be discussed in Chapter Five, Minsky uses the term ubiquitously for all returns to capital. For now, however, we will ignore the implications of this decision.

Minsky (2008) highlights the fact that returns to long term capital assets are “inherently conjectural and subjective” (p. 229). An investor can never be completely certain that his project will fulfill a demand and create sufficient returns. Moreover, the length of production for capital assets enhances those inherent uncertainties. Because the nature of many capital goods in a highly developed society is to be long-term, investments today are contingent upon returns expected in the relatively distant future. The more time involved in production, the more complex, and possibly unstable, the arrangements surrounding the investment are likely to be.

The Determinants of Investments

Minsky uses a two price system to analyze the determinants of investment. In “Minsky’s Analysis of Financial Capitalism,” Papadimitriou and Wray (1999) explain that the prices for current output, that is, “consumption, investment, government, and export goods and services... [are] essentially set as a markup over labor costs” (p. 9). This structure of prices (the purchase price of output), combines with financing costs, most importantly the interest rate, to determine the supply of investment funds. The demand side of investment is determined by prices in the asset market—the second price system. What an investor is willing to pay for capital assets, and hence future expected profits, are the primary variable in the asset-price system.⁸ Papadimitriou and Wray (1999) note that “of course, the alternative to newly produced capital assets is existing second-hand capital, however, in practice, capital assets are generally firm-specific and...not usually an important source of competitive pressure” (p. 9). When external funds are required to finance investment, the demand for investment needs to exceed the supply price for production to occur.

Borrowers’ and Lenders’ Risk and Margins of Safety

⁸ The price of current output will necessarily affect expected profits for capital, showing that the two price systems are intimately connected.

The determinants of investment are complicated by the uncertainty that pervades long term economic investment. In addition to the factors that affect the supply and demand for investment are the perceived risks of financing. Minsky uses Keynes' terminology and calls this the "borrower's and lender's risk." Lender's risk is captured in the interest rate and other restrictions put on loans. Borrower's risk, in contrast, is the amount of money, or "margin of safety," that a borrower places aside in order to cover possible contingencies. Wray and Tymoigne (2008) in "Macroeconomics Meets Hyman P. Minsky: The Financial Theory of Investment," explain, "The margin of safety provides a cushion...to ensure that debt contracts created to finance the position in the asset can be serviced even if revenues turn out to be less than expected" (p. 9). The sizes of margins will vary according to the perceived economic risks. If investments are profitable and behavior is rewarded, then the resulting optimism will reduce both margins and interest rates over time.

Financing Options

Investment is financed with a combination of cash, internal, or external funds. Cash is a stock of funds that consist of reserves on hand that are not needed for current projects. Internal funds are the cash flows to current investments such as business inventories; in other words, gross profits after taxes. The final resource for investment is external financing, which are loans from banks or other financial institutions. Minsky (2008) writes that internal funds and cash stocks are only enough when "debts are small and the government is running a large deficit, there is a surplus on current account on the balance of payment, or there are surplus financial assets in business portfolios that can be run off to finance investment" (p. 212). In basic macro theory, this is shown in the equation that equates injections with leakages in the economy: $I+G+X=S+T+M$; the injections: investment, government spending, and exports, equals

withdrawals: savings, taxes, and imports. Rearranging, $(G-T)+(X-M)=S-I$. Here is possible to see how a government deficit or an excess of exports will imply that savings, and therefore internal funds, are greater than current investment. When government deficits decrease or the balance of payments change, external funding will be necessary to finance investment.

Hedge, Speculative and Ponzi Financing

The iconic center of Minsky's instability hypothesis is his taxonomy of various financing schemes—hedge, speculative, and Ponzi financing. Hedge financing is the safest of the three, and it rests solely on the performance of the economy. It is when a debt contract is created for which the borrowers expect to be able to pay both the principal and interest through the returns on their investment. Because hedge arrangements will fulfill their debt obligations using current returns to capital, they are “vulnerable only to cost escalation or to revenue declines,” in other words, changes in the real economy (Minsky, 2008, p. 232).

An example of a hedge financing unit is a coffee shop that needs to cover current investment costs in order to finance an addition to their building. The time to completion is three months, and the costs of construction are \$100,000. When the addition is finished the company expects to be able to expand services to increase revenue by \$30,000 each year for the first five years of operation. If the company takes out a five year loan with 10% interest to cover the cost of construction, then yearly payments will be \$25,410.⁹ It is clear that the company is expecting to have enough revenue from the returns on their investment (\$150,000) to pay both the principal and the interest on the loan (\$127,050), in addition to a margin of safety to cover unforeseen changes in their output (\$22,950 or \$4,590/year).

⁹ Capital Recovery Factor Equation: $(i(1+i)^n)/((1+i)^n - 1)$, where n =years and i =the interest rate. Solving for $i=.10$ and $n=5$, $CRF=.2541$; $.2541*\$100,000=\$25,410$; $\$25,410*5\text{yrs}=\$127,050$

Speculative financing is when the debt needs to be renewed because revenues will only cover the interest charges of the loan. Long term capital investments only create returns over sufficiently long periods of time. The beginning of instability is when short-term debts are used that come due faster than the actual returns are realized. In these situations expectations are that future returns will be able to repay the entire debt commitment; it is “short financing of long positions” (Minsky, 2008, p. 231). Using the example above, now the coffee shop takes out a one year loan at 8% interest to cover \$100,000 worth of construction costs. However, the revenues, or returns, expected from the restaurant are still only \$30,000 in the first five years. The firm will be short almost the entire principal (\$78,000) when the loan comes due and will need to renew a large portion of the debt. Continuing this process, the firm will pay off its debt in five years, but its interest costs will be \$20,865.30 as opposed to \$27,050 in the previous example.¹⁰

Like a hedge unit, if revenues decrease the company will have to renew a larger portion of the debt, eliminating all savings in interest costs. What separates a speculative scheme is that increases in the interest rate will also affect the health of the firm. In this way it is subject to changes in the financial market as well as the real economy. If either the interest rate increases or revenues decline enough, the speculative position will become a Ponzi financing scheme.

A Ponzi scheme is such that in addition to needing to renew debt as in speculative financing, it is necessary to increase debt in order to cover even the financing costs. Again, the expectation is that once the life of the capital is exhausted the entire debt can be repaid.

Papadimitriou and Wray (1999) write that while speculative schemes are often a conscious choice on the part of the borrower, Ponzi schemes happen accidentally as the economy is pushed

¹⁰ This is not a “pure” speculative scheme because some of the principal can be paid off each time the loan comes due. However, this financing option is contingent on the firm’s ability to renew its maturing debt; if it cannot, the firm will have to sell assets or file for bankruptcy.

toward instability. “The shift towards speculative positions, or fragility, occurs intentionally...while the shift from speculative toward Ponzi finance is mainly unintentional” (p. 10). An example would be if the coffee shop began their investment project expecting it to be like the speculative situation above. However, two years later interest rates increase and revenues start to decline because high coffee prices are pushing people to stay home. Now, instead of renewing \$54,240 worth of debt in year three at 8% interest, the firm can find a loan only at 20% and their revenues have decreased to \$10,000. Their debt payment at the end of the year will be \$65,088, which is so much that the firm will have to increase the principal on its debt from the previous year. This is obviously an unstable position for both the firm and the lending institution involved. The firm is completely dependent on the willingness of the lender to roll over its debt. Otherwise capital sell-off or bankruptcy is the only way the firm can fulfill its commitments.

What should be clear from the examples above is that the capital necessary to support these financing options is a fixed capital investment with slow recovery of the principal. In hedge financing the loan periods match the expected returns to capital. In the speculative and Ponzi schemes the loan comes due before the return to capital has recovered the principal. This emphasizes Minsky’s point that his cycle theory explains economies with long-lived capital assets. However, the following chapters will challenge the claim that capital assets are the basis for speculative lending. Geoclassical economists argue that land, with an infinite life, is the best, although not exclusive, asset for speculative or Ponzi financing.

The Move Toward Instability

While financial investments in the aggregate are intimately tied to the health of the underlying real assets, Minsky (2008) asserts that financial stability is determined by “the size

and strength of the margins of safety and the likelihood that initial disturbances are amplified” (p. 233). After a financial crash margins are high, but over time as investments prove profitable businessmen and entrepreneurs lower their margins. The movement towards higher ratios of external to internal financing depends on the willingness to reduce margins of safety—or, on the expectations that the margins will increase because the value of capital assets are growing. Once this occurs, the possibility that one default can multiply, or “amplify,” to affect the whole economy, grows as the debt structures become integrated so that every firm relies on the payments of another.

The specific incentive that pushes entrepreneurs to seek profits from hedge and speculative financing is the discrepancy between short term and long term interest rates. Minsky argues that after a financial crisis banks are in a position of relative stability because government deficits prop up “income, employment and business profits...so that business profits increase relative to business investment” (Minsky, 2008, p. 234). In addition, large amounts of government debt in banks’ portfolios insulate the financial sector. In this situation liquidity is prevalent and short term interest rates are low, driving more entrepreneurs to look for capital investments. In addition, excess amounts of liquidity placate bankers into believing that instability is highly unlikely. Slowly bankers will start to innovate and exploit the interest rate differential by financing long-term investments with short-term debt.

Significant discrepancies in short and long term interest rates will not necessarily immediately result in speculative financing. Minsky lists several general reasons that will slow the adoption of risk. First, it takes time for investors (borrowers) to move away from the relative assured returns to money and short-term debts towards long-lived capital assets. Bankers (lenders) keep their lending restricted, especially after recent financial panics, in keeping with

the prevailing conservatism of the time. Minsky, citing Keynes, notes that after crashes bankers limit lending much longer than borrowers refrain from obtaining loans. Furthermore, it takes time for bankers to develop the institutions and instruments necessary to exploit the interest rate differential. This combined reluctance demonstrates lender and borrower risk because the current profit opportunities are not sufficient to compensate for the perceived risk.

A further “frustration” in the development of financial instability is when “bankers respond to optimistic views about the viability of debt structures by financing positions with an increase in their own liabilities—money” (Minsky, 2008, p. 236). The increase in demand deposits allows entrepreneurs to fund investments without recourse to unstable financing options. When overall investment increases, both the prices for capital assets as well as the returns to that capital also increase, generating internal revenues to finance investment that slows down the need to adopt external financing. However, rising revenue streams amplify the perceived debt-carrying capacity of an economy making it likely that speculative finance will develop. Minsky (2008) concludes, “once a shift towards...external and speculative financing develops, market reactions validate the decision to engage in such financing” (p. 237).

Instability in the Economy

Once the economy has shifted towards external financing, strong expectations increase perceptions of profit opportunities. In addition, payments to suppliers have a multiplier effect that increases demand for consumer goods before there is a corresponding increase in production capabilities.¹¹ The profit margin in these areas rises, furthering optimistic forecasts of economic growth.

Minsky is not specific about what will cause perceptions to change, but the beginning of the downturn comes when the supply of funding slows and the interest rate rises. He writes,

¹¹ Compare to “overconsumption” in Chapter Two.

“Rising interest rates diminish or eliminate the margins of safety that makes the financing of investment possible” (Minsky, 2008, p. 239). Because the cost of long-term assets increases quickly with increases in the interest rate, any rise in rates will eliminate expected returns, “transform[ing] an initially viable project into one that must be aborted” (Minsky, 2008, p. 241).¹² Another possibility that Papadimitriou and Wray (1999) offer is that income flows to capital assets are less than expected. When this happens borrowers are either not able to meet their payments or they reduce spending, affecting the incomes of those who depend on those flows. This will probably lower future expectations, causing the interest rate to rise.

As it becomes apparent that capital gains are diminishing, a herd-like mentality ensues and financiers demand higher safety nets that borrowers cannot provide. During the boom the margins of safety were slowly eroded, with many projects financed by Ponzi and speculative schemes; there is little excess liquidity to cover unexpected changes in the economy, and the little there is, is stripped in order to supplement debt payments.

Minsky’s theory of financial instability focuses on the lending practices leading up to a crash. Once financing becomes scarce and interest costs rise to eliminate expected earning of capital assets, those assets, which form the collateral of the loan, decrease in value (i.e. debt deflation) and the economy enters a recession. Minsky does not elaborate on the character of the events after asset prices fall. Minsky may have thought the connection was obvious, and it is possible to extrapolate from real events that falling asset prices reduce the ability of businesses to employ labor and continue production, reducing supply and demand for both real and financial investments. However, the question arises, why are completed capital assets left idle? The lack

¹² This is the exact phrasing that many Austrian economists use to describe the effect of rising interest rates on capital investment.

of theory extending the financial crisis to the rest of the economy will be examined in more detail in Chapter Five.

Policy Recommendations

Minsky proposed various specific measures to promote a number of overarching goals. He strongly believed that policy could promote rising living standards and full employment. However, Minsky was cautious about policy panaceas. “It should be stressed that a program for full employment, price stability, and greater equity is not a simple one-shot affair. There is no magic economic bullet; no single program or particular reform will set things right forever” (Minsky, 2008, p. 326). As Minsky emphasized later in his career, he saw capitalism as ever-evolving, with the reforms of the Roosevelt era incapable of meaningfully addressing today’s problems. Because Minsky saw capitalism as dynamic, he did not think that policy reforms would be sufficient to solve the problems of capitalism. The prescriptions Minsky does offer largely follow Keynesian logic and use government as a support and supplement to the private sector.

Using statistics from the recent past, Minsky (2008) concludes that the government should be about 20% of GNP (p. 333). During recessions, spending above this amount will boost business profits, while during economic boom times running surpluses will dampen inflation. He argues that the government should institute employment programs similar to the “New Deal”—effectively creating an “employer of last resort,” that enables everyone to have access to work. Minsky sees this as efficient way to raise the minimum wage and reduce the need for welfare. In terms of taxes, Minsky advocates for a ubiquitous value-added tax, as opposed to Social Security and corporate incomes taxes, because it adds to costs equally.¹³

¹³ This analysis ignores the implications of exempting natural resources (including land) from taxation. A value-added tax may not tax the initial resources which are extracted, and to which value is added. This will bias the

Lastly, Minsky is in favor of excise taxes to accomplish social policy objectives like reducing natural resource consumption.

In order to reform the financial industry Minsky argues for regulation and greater supervision through the use of the central bank's discount window. He approves of the idea of "to-the-asset" financing regulations that the "real bills" doctrine promotes. He writes that when banks are forced to contain their lending to self-liquidating loans, in other words when "the proceeds of a loan [are] used to finance the acquisition of a specific stock of goods, and the sale of those goods...yield[s] the funds to repay the debt," the health of a bank is more assured, if only because the banker can clearly see the process by which the loan will be repaid (Minsky, 2008, p. 229). When the economy shifts toward long-lived capital assets, the financial sector needs to create sufficiently long-term loans as well, or risk speculative financing. The stability of hedge financing can be supported by the Federal Reserve by making "to-the-asset" financing a requirement for use of the discount window.

Minsky counsels that the Federal Reserve utilizes the discount window instead of relying on open market operations to control bank reserves. He argues that because central bank regulators insure depositors, they need to substitute for "depositor surveillance." Minsky (2008) writes, "Where depositors are uninsured, depositors will walk away from banks with low equity ratios and suspect assets" (p. 282). In our economy where not only deposits are insured, but it is extremely hard for the average person to effectively monitor banks, it is imperative that central authorities "constrain bank asset-equity ratios and asset structures" (Minsky, 2008, p. 282). Because of the nature of the discount window, authorities would have better access to bank

economy towards more resource-heavy industries and decrease the relative cost of land, arguably not what our threatened environment needs. The role of taxes on land will be discussed in depth in Chapter Four.

operations, and therefore be better equipped to regulate the asset structure and capital-equity ratios.

Lastly, Minsky is an advocate of reducing the size of corporations, and specifically banks, because “bank size determines, to a large extent, the size of customers” (Papadimitriou & Wray, 1998, p. 213). By allowing and encouraging a system of many local banks that can offer a wide range of services, Minsky hopes to simultaneously promote opportunities for entrepreneurs while preventing the establishment of mega-banks. Keeping both banks and corporations small also promotes employment because “smaller firms tend to use more labor-intensive techniques merely because their ability to finance position in long-lived and expensive capital assets is lower” (Papadimitriou & Wray, 1998, p. 214). In addition, smaller banks have other benefits such as high capital-to-asset ratios and stronger competition.

With all these reforms Minsky emphasizes that changes in institutional constraints would create incentives for the private sector to innovate and circumvent new regulations. Minsky’s overarching criticism of current policy is that profit-driven bankers will always innovate faster than regulators can write the rules. By advocating that banks be regulated towards assets with minimum equity absorption ratios he hopes to prevent destabilizing financing schemes. Greater surveillance would prevent situations in which the central bank is forced to act as lender of last resort, which inevitably sets the stage for the next “burst of expansion” (Minsky, 2008, p. 281). However, he believes capitalist economies with complex and long-lived capital assets are inherently unstable; government and policy have positive mitigating effects but cannot eliminate instability permanently.

Chapter Four: The Geoclassical Cycle Theory

Geoclassical economists take their inspiration from the economist Henry George.

Writing in the late 19th century, George captured the attention of the public by singling out the role of land in the economy. His initial theory of the role of land speculation in financial crises prompted later economists to expand and further his insights. The current geoclassical theory of boom and bust places land speculation at the epicenter of the boom; the resulting capital and financial investments have far reaching consequences that demand attention. To understand the geoclassical theory is to see how excessive land speculation distorts investment and financial decisions in fundamentally unsustainable ways.

The Theory of Henry George

Chapter One outlines George's basic theory of financial crashes. In short, rising land prices inhibit production by diverting resources away from productive investments. Capital and labor get squeezed out, accepting lower and lower returns until production ceases, causing the depression. While George's theory was one of the most insightful explanations of the role of land in business cycles, it overlooked the empirical evidence that land prices crash before production slows. Until Mason Gaffney's work beginning in the mid-20th century, geoclassical economists reiterated George's theory of business cycles. Taking the kernel of George's theory on land speculation, Gaffney expanded George's work into a coherent explanation of real estate cycles.

The Role of Property Rights and Taxes in Markets

In his 2009 book *After the Crash: Designing a Depression-Free Economy*, Mason Gaffney provides the most complete exposition to date of the geoclassical theory. Throughout the book Gaffney explicitly exposes the role that current taxes play when individuals are determining whether or not to invest in land. Because markets work within the structure of

property rights and tax incentives, the land cycle cannot be explained without considering those impacts. Throughout both George's and Gaffney's writings is the view that when private individuals receive the returns to land, social values are compromised and the economy is pushed into periods of boom and bust. The economy does not become destabilized because land is valuable, but specifically because that value accrues to private individuals.

The Growth of Speculation and its Effects on Capital Investment

Gaffney (2009) begins his explanation saying, "The optimism generated by prosperity carries the seed of its own destruction because it encourages landowners to demand too much, to overprice their land and its rent," very much in line with George's theory (p. 34). Gaffney introduces an algebraic expression for the valuation of land, equating the cost of holding land with its returns, to explicitly show how it is priced. The term i is the interest rate, V is the value of land, R is the current annual rent, and a is the expected appreciation rate. Combining those terms, iV , the opportunity cost of land (because it is the possible returns to competing investments) is equal to $R + aV$, the expected return (the current cash flow plus the expected future appreciation of land). Rearranging, we get $V=R/(i-a)$, signifying that the price of land is fully determined by current rent, the interest rate, and expected appreciation.

Because more land cannot be produced, its price can remain higher than the real return for a number of years. This phenomenon is not necessarily destructive, but landowners tend to act like a cartel and create a price umbrella for the selling price of land. The high prices bring marginal land into cultivation. Speculative pressure from the "cartel" of landowners pushes businesses off the best land and prevents optimal efficiency. Business owners who cannot afford land in the central business district, for example, move outward into the suburbs. The result is increased costs and lowered worker productivity on the marginal land.

This distortion of decision making is the beginning of the cycle. When the price of land is pushed above its current rental return, it has ripple effects on the use of resources in the economy. As land values rise, both land owners and business entrepreneurs profit from the growing economy but efficiency is compromised. Because previously sub-marginal land has been brought into production, worker productivity is reduced and the marginal rate of return on capital decreases. For example, a coffee shop located near a housing development requires basically the same amount of capital and labor as one situated in a city, but there are added costs of transporting materials to the outskirts, and decreased numbers of customers. When the marginal rate of return on investments is lowered, profits decrease, and the willingness and ability of the business owner to reinvest in capital improvements decreases. In this situation, overpriced land values prevent reinvestment of capital and reduce economic productivity.

A simultaneous consequence of the lowered marginal return to real capital investments is that land becomes a more attractive investment. In an economic environment where idle landowners can benefit from increasing land values, businesses which employ capital and labor lose their appeal. In the equation, $V=R/(i-a)$, this is depicted by a decrease in the interest rate which pushes up the value of land (as i decreases, V multiples in value).

During speculative periods the price of land is above its current return. Referring to $V=R/(i-a)$, when a is greater than zero, the value of land is greater than the return, R/i (as a increases, the denominator approaches zero and V approaches infinity). When land trades at inflated values, it is merely a transfer of wealth from society's perspective. Gaffney (2009) explains that if land is sold and those gains are consumed, that consumption has no associated production. "Therefore, it must draw down existing stocks of capital" (p. 35). Instead of saving out of labor and capital income, people rely on the inflated value of their property to support

their consumption. The effect is that while the buyer sees his purchase as an investment, in reality his savings are going to the individual landowner (for consumption) and are siphoned away from productive investments in the economy. The immediate result is a further decrease in working capital.

Yet another effect of rising land values is an increase in investments that substitute away from land. From society's perspective, this is almost wholly wasted investment. The previous effects, decreasing marginal returns to capital and the use of land gains for consumption, squeezed out productive capital investment in the economy. Conversely, substitution towards capital and away from land when land has become overpriced leads to wasteful capital outlays. This type of investment, however, is not only "land-saving;" it is also, as Gaffney (2009) explains, land-enhancing, rent-leading, land-linking, and claim-staking capital (p. 36).

One example epitomizes Gaffney's point. The CityCenter complex, located in Las Vegas, Nevada and funded by MGM Mirage and Dubai World "is the biggest construction project in the history of Las Vegas" (Goldberger, 2010, para. 3). The project began in 2004, at the very height of the boom, and includes, "three hotels, two condominium towers, a shopping mall, a convention center, a couple of dozen restaurants, a private monorail, and a casino" on a sixty-six acre site (Goldberger, 2010, para. 3). When the market crashed the project was almost abandoned entirely and threatened to bankrupt MGM Mirage. Since its opening in 2010, it has struggled economically. Clearly, the CityCenter project was rent-leading and land-enhancing. It was developed at time when the assumption was that land values would continue to rise and Las Vegas—a city in the middle of a desert—would continue to flourish. Just as important to the actual CityCenter project are the (land-linking) surrounding infrastructure outlays by the government. Highways, airports, and interregional water systems, are imperative to support a

city like Las Vegas, never mind the demand needed to sustain a development like CityCenter. Gaffney's argument is that expectations of rising land values make many unsustainable long-term capital investments appear economically viable. The logic of investing in these capital investments is that the future land prices are expected to compensate for the current investment. The negative effect is that capital is being invested in sub-marginal uses because of the anticipation of future land gains. Current investment is sacrificed to what will turn out to be largely unsuccessful ventures.

A primary significance of more capital in this last example, and less in productive enterprises, is that not all capital employs equal amounts of labor. Gaffney (2009) writes, "The kind of capital that substitutes for land is mostly fixed capital, which turns over much slower than average" (p. 36). Gaffney (2009) explores the various myths about capital investment and explains how we can improve employment by investing in circulating capital. He shows that current economic thought assumes that all capital "mixes" equally with labor and ignores the "valence," or turnover rate, of capital. Capital that is sunk in fixed investments (tall buildings, infrastructure, etc.) employs a limited number of workers compared to circulating capital that turns over within months, days, or even hours, like business inventories.

For example, in 2008 National Public Radio reported that every one billion dollars spent by the government on infrastructure stimulus would support 35,000 jobs; that is about a \$28,500 cost/job (Horsley, 2008). During a recession, however, the economy needs to use that money to invest in short-term capital investments that turn over quickly, automatically supporting more employment. Gaffney (2009) writes, "If the objects are attached to a site, as the most durable ones are, labor is applied onsite in a bulge, one-shot payroll. There is no fund quickly recovered to reinvest to sustain the payroll" (p. 102). Obama's stimulus plan is a prime example of

investment in fixed, slow-to-turn over capital goods that uses relatively little labor. Once the money is spent, sunk into projects that will not turn over for decades, there is no capacity for that capital to continue to employ labor.

Gaffney shows that investments in capital with long-term “service” lives do not just displace on-site labor in favor of labor used in the production of the capital. Even assuming that capital is entirely the product of labor (which it obviously is not since the materials and fuel for the equipment uses natural resources), as service life increases more of the investment goes to interest payments. For example, the monorail in Las Vegas cost an estimated \$650 million (\$166 million/mile) (MegaRail, n.d.). If the payment was a 30 year loan at 8% interest, the yearly payment is \$57,739,500; the total cost of the loan is then \$1,732,185,000.¹⁴ The fraction of wages would be \$650m/\$1.7b, or just over 37%. The remaining 63% of the cost is towards the interest. If the loan period changes, the percentage of interest costs change accordingly. For example, a 35 year loan of the same size and interest rate would be 33% and a similar 25 year loan would be 43%.¹⁵ When the life of the capital asset is longer, and the turnover slower, more of the returns are interest and less are wages. This highlights the fact that the systematic investment in long-term capital when land prices are high reduces opportunities for labor.

The Role of Taxes

Although land speculation worsens the situation, taxes on labor and capital produce incentives to invest in fixed capital. Taxes on labor are significant and increase the cost of employment over the wage-rate by the amount of the tax; this distorts the level of employment businesses choose. Gaffney (2009) summarizes, “Businesses respond to this upward pressure on

¹⁴ Capital Recover Factor: $(i(1+i)^n)/((1+i)^n - 1)$, where n=years and i=the interest rate. Solving for i=.08 and n=30, CRF=0.08883; .08883*650m=57,739,500; 57,739,500*30yr=1,732,185,000

¹⁵ Note that this can be depicted in the CRF equation: as n approaches infinity, CRF approaches i, indicating that as the length of the loan increases, payments go towards interest costs, decreasing the fraction to wages.

labor costs by using more land and by investing in longer-maturing capital than the market would otherwise impel them to do” (p. 107). The main reasons for this bias are the many opportunities for tax evasion for land and capital that are not available to labor. Additionally, the specific “loopholes and abatements for capital...are geared to favor capital of longer life” (Gaffney, 2009, p. 113). Gaffney goes into considerable detail outlining the way that taxes predispose investors towards fixed capital.¹⁶ The final implication, however, is that the current tax structure is implicitly biased against investments that increase employment. Changing the structure around land ownership and investment must therefore be combined with corresponding modifications to the tax incentives on labor and capital if the economy is going to approach full employment.

Why Speculative Land Prices Are Not Stable

In short, the geoclassical theorists highlight the loss of reinvestment in productive capital that employs labor, in addition to the waste of resources that *could* employ labor. To the extent that the economy reorganizes around the speculative belief that rising land prices will continue ad infinitum or at least level off at permanently high prices, it is blinded to the waste of real resources that prevents full employment. Gaffney shows, however, that high land prices are predicated on the belief that they will continue to rise. Using equation $V=R/(i-a)$ and rearranging the terms, we get equation (2): $V=(R+Va)/i$. Va is the expected growth of V , the value of land. It is obvious then that if a falls, V must also fall precipitously. For example, if R equals 100, i is 5%, and a is 3%, then solving for V we get \$5,000. Reducing a to 1% and plugging these values into equation (2), the selling price of land drops to \$2,500. The consequence is that expectations of future rents need only decrease minimally, and not even completely (a can be positive), for land values to plummet and set the economy into a tailspin. Rents can rise continually only

¹⁶ See Gaffney, 2009, p. 106-122

algebraically; the sprawl of economic development and waste of both capital and natural resources are fundamentally unsustainable and prevent expectations from remaining permanently high. Only if a remains low and prices rise gradually, will the growth be stable.

The Role of Financial Institutions

So far the geoclassical story has concentrated on the effects of speculative land values on the real economy. However, the sudden collapse that characterizes the boom/bust cycle is the result of the way that financial institutions lend funds during the boom. In contrast to appearances during financial panics, banks are essential to the health of an economy. Gaffney (2009) writes that they are not necessarily “too big to fail” institutions that work behind closed doors, but rather “creators of liquidity” (p. 159). Their social function is to mediate between savers and investors in an economy by “borrowing short and lending long” so that entrepreneurs have access to credit. The destruction of confidence in the banking system, banks’ role in land speculation, and the cycles of booms and busts are not necessarily inherent. Gaffney argues that by understanding and properly regulating banks away from using land as collateral we can prevent the credit freezes that stall businesses and obstruct social investment.

Taking collateral, accepting demand deposits, and lending at interest are essential banking functions that allow entrepreneurs to get access to funds. There are limits imposed on how much banks will leverage. Some are regulatory, like the Federal Reserve controls such as reserve requirements; others are market based, like the need to retain asset values and consumer trust in the institution. Nevertheless, there are tendencies that push individual banks to risk the collective good of social trust.

Banks are able to reduce costs by creating relatively large, long-term loans. Creating and overseeing loans is costly because it requires staff. Individual banks find that they can profit by

making large loans, so the total number of loans is smaller and the average check sizes are greater, and by making long-term loans, so that the need to initiate new loans is lower. These choices lower personnel and processing costs which are the major expenditures of a bank. Land, along with fixed capital investments, tends to become the prized collateral for new loans, especially during speculative booms when rising land prices are expected to finance the loan. The chief problem with this strategy is that volatile land prices put banks at risk of default and therefore insolvency. Moreover, these investments tie up circulating capital in projects that do not employ labor. When every bank tends away from lending for productive social investments in order to profit, the banking sector as a whole is compromised and the likelihood of illiquidity and insolvency increases.

Gaffney (2009) argues that keeping “a substantial part of bank assets in short-term loans that are financing the working capital of businesses and that are therefore automatically self-liquidating in a few months” is a bank’s primary form of liquidity because the Federal Reserve dictated reserve requirements are “dead” in the vault (p. 170). Land, in contrast to short term loans to businesses, is illiquid by nature because of the length and size of the loans. Furthermore, from a societal perspective land is never self-liquidating; it only changes hands. When land is appreciating the cash flow is not enough to cover the interest charges. Using the equation above ($V=R/(i-a)$) and rearranging back to its original, intuitive form, $iV=R+aV$, it is possible to see that R , current rent or cash flow, is less than the interest costs (iV) by the amount that the value is appreciating (aV). This means that in a rising market mortgage holders must use savings from wage income in order to pay their loans, effectively using liquid capital to finance an already illiquid investment.

Because banks are generally highly leveraged, the greater the percentage of assets composed of land, the more sensitive a bank is to a drop in prices. During speculative booms, the capital ratio of a bank, its “net worth divided by the sum of the assets, weighted by the risk that they will not perform,” drops precipitously without a corresponding increase in equity (Gaffney, 2009, p. 179). In this situation, a small number of defaults can result in insolvency.

As the land bubble deflates (or more accurately, pops), banks accelerate the fall by refusing to lend against land during the downturn. In addition, their reluctance to “mark to market” and take a loss does not improve their finances, but merely prevents public acknowledgment that their assets have lost value. Banks choose to increase their reserves on hand in order to improve their capital ratios. In this scenario, banks cannot create new loans and perform their socially important function of providing liquidity because their assets are effectively frozen in overvalued land. This, combined with the waste of capital during the boom, worsens the depression. Workers cannot find employment because working capital has been malinvested during the boom, and businesses cannot get credit because banks are in the process of re-capitalization. Households that depended on the wealth embodied in their homes, or in retirement savings invested in mortgages, are reeling from the drop in land prices. In the normal course of events the government intervenes in order to prop up banks and re-inflate prices. The underlying issues are ignored. The institutions that enabled the unsustainable boom remain in place.

Policy Recommendations

To solve the structural flaws in our economy, Gaffney proposes a series of solutions, including a 100% land value tax coupled with the complete removal of taxes on labor and capital. For the banking system he resurrects the “real bills” doctrine, which regulates banks

away from land and toward self liquidating loans. These proposals work in tandem to stabilize the economy.

The first reform that Gaffney analyzes is the implementation of a land value tax. In terms of reducing the business cycle, the land value tax would simultaneously prevent the individuals from speculating while sharing the gains from land with the whole community. The selling price of land is determined by the future stream of revenue. If a property tax on the value of unimproved land is 100%, the future costs of holding land (the taxes) will eliminate the selling price, but not its value. Instead of allowing landowners to sit idly while their land rises in value because of the surrounding activities, a land tax would encourage them to use the land *now* to its highest capacity. This will encourage activity in the city where the value of the land (and hence the taxes) is the highest and discourage premature development in the suburbs, therefore increasing economic productivity and renewing city centers.

Taxes on labor raise wage costs for employers, biasing businesses away from labor and towards capital. While not directly connected to reducing economic fluctuations, unemployment is a perennial problem that is worsened by land speculation and capital waste. The ability of a land value tax to supplement, or eliminate, taxes on active factors of production is a key policy to enable smooth growth and economic efficiency.¹⁷

A component of Gaffney's solution is improved assessments for the property tax. The current assessment is not accurate or frequent enough. In addition, by using the "land-residual" method of calculation (valuing the building first and identifying the remainder as the value of the land), it underestimates the value of land. There exist myriad other problems that prevent correct assessment and thus compromise the efficiency of the tax.¹⁸ Furthermore, the current property

¹⁷ See Gaffney, 1970 on "The Adequacy of Land as a Tax Base"

¹⁸ See Gaffney, 2009 p. 49-54

tax is split (although not equally) between capital (buildings) and land, with the effect that construction costs are unnecessarily high, reducing the total amount of capital invested. Gaffney (2009) writes, “Every individual site considered in isolation is less intensively improved...What is marginal to the owner is of more than marginal value to the health of the neighborhoods...” (p. 40). One especially egregious example of this is the choice to use an inner city plot as a parking lot. To the landowner, the gain is marginal as to whether to build a structure to rent to businesses or merely pave the lot. To the community, including those potential business owners and workers, the parking lot is potentially a blight and waste of productive space. The entire neighborhood or city center is not developed to its potential because of distortionary taxes. The taxes encourage the builder to lower costs by both prolonging the life of the building and reducing its durability (Gaffney, 2008, p. 43). As we saw above, capital turnover is essential to full employment. Shifting the property tax towards the value of unimproved land and away from capital will simultaneously dampen land cycles while promoting efficient use of capital.

The last proposal Gaffney recommends is the resurrection of the “real bills” doctrine. “Real bills” proposes that banks be regulated away from using land as collateral. As explained above, the negative consequences that result when banks choose to lend against land are directly related to the problems that arise during periods of boom and bust. A land value tax would reduce the selling price of land, reducing the need for entrepreneurs to be highly capitalized in order to start a business. Instead of needing the bank to help front the entire cost of land before the business has even opened, the taxes for the use of the land would be in relatively small installments. By insisting that regulators steer financial institutions towards short-term, self-liquidating loans the “real bills” doctrine will help to mitigate reoccurring liquidity problems.

Throughout his analysis, Gaffney is insistent that the business cycle is not inherent to capitalist economies. If we decide to change our institutions and misguided policies, the perennial problems faced by our economy will dissolve. Through diligent revision of accepted economic wisdom, Gaffney (2009) depicts a practical way “out of the present morass and [saves] us from the next one” (p. 203).

Chapter Five: Analysis

Taking a bird's eye view, this chapter begins with an analysis of what unites the Austrian, geoclassical, and financial instability theories. Because each is far outside the mainstream, they are independently critical of neoclassical economics. Beginning with an overview of this criticism, I then go on to evaluate general institutions and themes that the theories have in common. From there, it is possible to draw out the distinctions that separate the analyses. Specifically, I highlight Minsky's use of quasi-rents and the Austrian insistence on the evils of government policy. Using supplemental statistics and analyses of the current crisis, I expose gaps in the applicability of the Financial Instability Hypothesis and the Austrian approach. Finally, after examining some similarities in the turning point of the business cycle, I conclude with an examination of policy and my judgment of the validity of the geoclassical cycle theory.

I. In Contrast to Neoclassical Economics

Each theory of business cycles investigated here contains within its corpus a diatribe against the prevailing standard analysis. For varying reasons, and yet with a surprising coherency, each theory purports to highlight essential aspects of the economy that neoclassical theory ignores. A common theme among the authors is the obfuscating abstraction of the neoclassical synthesis.

In the introduction to Gaffney's *After the Crash: Designing a Depression-Free Economy*, the editor, Clifford Cobb (2009), writes, "Because land remains an obscure and insignificant feature in mainstream economic theories, those same theories cannot analytically account for recessions or depressions caused by real estate bubbles" (p. 8). From the beginning of neoclassical analysis land has been subsumed into capital; however, as Austrian economics emphasizes, neoclassical analysis only allows for homogenous lump-sum capital investments.

Standard analysis conceals not only the role of land, but even the factor of production it obviously deems more important. The effect of real investment on the economy is obscured because the variable “K” cannot account for the different ways that specific types of capital influence the trajectory of the economy. The logical inner consistency of neoclassical analysis is meaningless when basic components of economic life like land and capital are rendered unrecognizable.

While the geoclassical theory emphasizes the role of property and tax institutions, Minsky focuses specifically on the role of our financial institutions. In his book Minsky (2008) writes, “It may be that what the neoclassical theory ignores, namely institutions, and in particular financial institutions, leads to the observations it cannot explain” (p. 112). Credit creation changes budget constraints and introduces uncertainty into the market analysis. Minsky (2008) argues that “present prices are not parameters for decisions” when considering capital assets and financing decisions that necessarily depend on changing future expectations (p. 120). Consequently, the “beautiful” conclusion of market preferences and prices determining equilibrium is misguided by assuming static demand and supply curves. The introduction of financial institutions breaks down the connections within neoclassical equilibrium.

In distinct contrast to standard neoclassical economics, all three theories agree that to abstract from the importance of time is to do a disservice to our understanding of financial crises. Using a static analysis of a phenomenon that is so heavily influenced by credit and capital markets will not provide a satisfactory explanation. The incorporation of time explicitly allows for uncertainty about the future, and therefore the possibility of positive quasi-rents or land value appreciation. In the following discussions of capital, interest rates, and credit the importance and complications of time will be evident to an understanding of the business cycle.

Hayek's biographer and an Austrian economist himself, Bruce Caldwell (2005), writes that the loss of the importance of history of economic thought does a great disservice to the paradigm. "A science ignorant of its history," he writes, "is a science more likely to be arrogant as well as ignorant....It is also a science more likely to be led astray, more prone to divagations that a knowledge of history might have prevented" (p. 403). Caldwell is critiquing neoclassical economics on larger and more surreptitious grounds. His comment is exemplified by the recent movement within economics, appropriately named "Post-Autistic Economics," that argues for a more pluralistic approach grounded in historical and empirical observations. A history of the movement explains, "[neoclassical economists] have increasingly formalized their theory, making it progressively irrelevant to understanding economic reality" (Post-Autistic Economics, n.d.). The intrusion of facts, to say nothing of the lack of the history of economic thought or competing paradigms, is unwelcome and avoided at all costs by standard analysis.

What has been lost in the past decades of economic research and thought is a generation of economists who can understand the world without recourse to irrelevant theories. In order to formalize economic logic, complex phenomena have to be reduced to simplistic mathematical equations. Even when this has been possible, the results are often inadequate. Economics has tried to become a "legitimate" science at the expense of a common sense understanding of the world that intakes and processes new (and historical) information. Theory has been allowed to dictate how economists see, instead of the other way around. The theories examined here attempt to reframe economic analysis by taking a renewed perspective on both the facts and limiting assumptions in neoclassical theory.

II. The Importance of Institutions, Credit, and Expectations

Each theory relies on a set of institutions that establishes the context in which the cycle takes its distinct form. For example, the significance of the private collection of land rent (geoclassical), or the central bank (Austrian), or an innovative financial sector (Minsky), is that without such institutions the respective theories would not offer relevant explanations of how economic agents act. When analyzing the usefulness of each theory we need to ask whether the dynamic set of institutions corresponds to our reality. Are cycles possible without reckless financing? Is it plausible that business cycles before there were central banks were unrelated to our current financial panics? Would the public collection of rent prevent the real estate cycle? These questions propose essentially the same question, namely, does the respective theory sufficiently explain the pattern of depression and expansion that our economy has experienced consistently for decades?

All three schools agree that the expansion and contraction of credit is an essential aspect to the business cycle. There is a general understanding that without a financial sector to extend funds to investors, the economy could not sustain unwarranted investments for such significant lengths of time. Minsky's theory is distinct from the geoclassical and Austrian theory because he does not explore any changes to the real economy. Therefore, the importance of monetary changes and credit to his theory cannot be understated. Gaffney's analysis of credit is a nuanced look at how lending against land is specifically dangerous to the health of the banking system. Henry George was aware of the importance of credit to the cycle, noting that without it the tendency for land prices to rise in a growing economy would just be a constant, steady, push limiting production. Friedrich Hayek theorized that without at least monetary complicity in the cycle there could not be booms and busts. His view diverges from the current Austrian theory because he did not believe the instigation of a cycle was necessarily monetary. Caldwell (2005)

writes, “Thus, Hayek accepts many of the ‘causes’ listed by non-monetary theorists as actually having precipitated the cycle. His point is that such things act as ‘causes’ only because we have an elastic credit system” (p. 161). The expansion of credit in each theory threatens the stability of the economy. The divide among the theories as to exactly why and how credit expands provides the basis for exploring the distinctions in their interpretations.

The role of expectations is fundamental to the propagation of the cycle and features slightly differently in each theory. In common is the belief that entrepreneurs and investors act rationally. Essentially Minsky and geoclassical economists come to a similar conclusion: investors find ways to exploit rents or profits and periodically (and predictably) these activities lead to a crash. Minsky attributes the gains to “quasi-rents” from capital and dubious financial schemes, while geoclassical economists implicate land rents and the resulting capital investments. The Austrian theory differs from Minsky and the geoclassical formulation by insisting that there is an outside shock to the economy that unnecessarily changes expectations. When the central bank lowers interest rates independent of the real economy, entrepreneurs alter their behavior and the structure of production is unsustainably lengthened. However, a boom is by definition “an upsurge in activity,” not merely a shift in production from short term to long term capital assets (Merriam-Webster Dictionary). The hope “to get something for nothing” abounds during upswings in asset bubbles. By maintaining that there is no inherent opportunity for destabilizing rent seeking during boom times, the Austrian position is easily attacked, as we will see.

III. Capital and Minsky

In a developed capitalist economy, it is little wonder that the role of capital would receive prominent placement in cycle theories. Each theory has significant ties to contributions of

classically defined “Austrian” economists, Menger and Böhm-Bawerk, on capital theory. Because Gaffney draws on Austrian insights, his analysis of capital can be viewed in accordance with the Austrian theory. This means that both theories converge on the position that capital is heterogeneous and will have different impacts on economic activity, depending on its specific characteristics (long or short term, fixed or circulating, etc.). Malinvestment of fixed capital is understood by both to have negative impacts that take time to correct, and in some cases are completely wasted. The two theories also insist that although credit is an essential element of the business cycle, the depth of a recession is determined by the extent to which real resources have been diverted from productive investments.

Minsky, who benefitted from Joseph Schumpeter at Harvard, integrated the specific implications of long-lived, heterogeneous capital assets. Although he acknowledges the particularities of capital, he diverges from the Austrian and geoclassical conception. Minsky’s analysis of credit markets does not make any strong connection to the real economy; he finds the consideration of capital useful only in so far as it pertains to credit expansion. Capital is not “malinvested,” but rather long-lived capital is problematic because of the probability that it will be financed with short-term liabilities. His treatment of capital does not connect financial valuation with how specific investments will affect the real economy.

From the Austrian or geoclassical perspective, a serious question for Minsky’s analysis is how speculative and Ponzi financing leads to the destruction of real wealth. The presence of excessive borrowing and unstable financing does not automatically lead to wasteful capital creation. Gaffney explains that during a stock market crash there is no destruction of real wealth, just a transfer from “present owners to potential buyers” (Monroe, 1998). Geoclassical and Austrian economists insist that the depression is due to malinvestments—empty office buildings,

vacant suburban developments. As a result of the 2008 crash, the delinquency rate in residential and commercial real estate loans increased from 1.87% in the first quarter of 2000 to 9.58% in the third quarter of 2010, while the delinquency rate for credit cards was virtually unchanged throughout the period, increasing from 4.35% to 4.59% (there was a slight increase during the recession to a high of 6.51% before declining again) (Federal Reserve Board Statistical Release, 2011). This statistic indicates that loans for a specific real asset are the primary problem. Stock market crashes destroy confidence and make business risky by the looming possibility of credit contraction, but without a theory connecting credit to the real economy, Minsky leaves large questions such as the length and depth of the business cycle unanswered.

Minsky's use of "quasi-rents" in capital production and financing are an intriguing connection to the real economy. As will be shown below, they appear similar to the geoclassical conception of land rents. However, Minsky's use of the term is confusing and its minimal importance in his theory is troubling. Based on this evidence, Minsky's Financial Instability Hypothesis does not stand up to analysis. Michael Hudson, an economics professor at the University of Missouri-Kansas City, demonstrates this by providing his own analysis of the role of debt during an asset bubble, which supports the geoclassical position.

Investment and Quasi-rents

For Minsky, capital investment is set by the intersection of supply and demand for capital. As explained in the third chapter, supply for investment is determined partly by current output prices and partly by financing costs, most importantly the interest rate. The demand for investment is determined by the expected profits and therefore an investor's willingness to pay for an asset. When demand exceeds the supply price investment occurs.

In order to understand the demand curve for investment it is necessary to focus on Minsky's discussion of "quasi-rents" and the returns to capital. Alfred Marshall coined the term in the early 20th century to identify capital returns in the short-run. According to Marshall, quasi-rents occur after production has been completed if demand for a capital investment is higher than anticipated. As a result, the price for the output of the capital asset increases and the returns above interest and depreciation costs are considered quasi-rents. Quasi-rents are not expected because by definition they result from a limited supply of some capital asset; if the demand had been fully anticipated a competitive market would have produced enough of the asset to eliminate extra returns. Quasi-rents are also not a stable or sustainable phenomenon, but specifically attributed to the short-run. In a competitive market over time, capital production will increase and quasi-rents will be eliminated.

Minsky (2008) defines quasi-rents similarly to Marshall, writing, "Such a price in excess of out-of-pocket costs is due to the scarcity of the output and therefore of the capital assets needed to produce the output" (p. 200). When demand for capital output is more than the existing stock of capital can accommodate, there exist quasi-rents. Minsky also notes that quasi-rents are a "gross profits" concept, meaning that they are calculated independently of any other costs or profits of a firm. For instance, capital can be earning quasi-rents but because of other expenses the company as a whole may not be earning positive returns.

Minsky (2008), however, makes a confusing twist by writing, "As quasi-rents are identified with profits, then capital assets yield profits because the output they produce commands a price that exceeds unit out-of-pocket costs" (p. 200). At this point it is necessary to define the term profit. Profit can be separated into two distinct usages. One is accounting profit, which refers to revenues minus explicit costs. The other is economic profit, which is similar to

accounting profit but subtracts the opportunity costs of all factors of production. In a competitive market economic profit is continually competed to zero as opportunities become apparent to other entrepreneurs. Accounting profit, in distinct contrast, is a normal occurrence in businesses that are performing well, in so far as they own some of the inputs. In this sense, “capital assets yield profits because the output they produce commands a price that exceeds [explicit] unit out-of-pocket costs” (Minsky, 2008, p. 200). When Minsky (2008) makes a statement like, “Capital assets are valuable *only* because they earn profits,” he must be referring to accounting profits, which include returns on invested capital (p. 200). Zero economic profit is an equilibrium condition, and capital assets continue to have value when this is the case. Moreover, returns to investment above depreciation and interest are not necessarily economic profit. In particular, risk premiums, monopoly profit, and asymmetrical information will lead to returns that are not economic profit in the strict sense. By equating the terms quasi-rent and profit it becomes difficult to extract what Minsky means when he uses one instead of the other.

While Minsky clearly understands Marshall’s initial definition of the term, his use of the term stretches to include all returns to capital. Minsky (2008) writes in a following chapter, “The cash flows that a set of capital assets collected in a firm are expected to yield will be called quasi-rents” (p. 228). Quasi-rents are first revenues minus explicit costs in the short run, then they morph into profits, and finally into all returns to capital. Minsky expands the definition until the term is unrecognizable from what Marshall had in mind (returns above interest and depreciation). The only comprehensible way to understand the role of capital in the Financial Instability Hypothesis is to accept that quasi-rents, profit, and ultimately all capital returns are indistinguishable. He writes, “Capital assets yield quasi-rents because of the way the economy actually functions, not because of an abstract productivity of capital assets” (Minsky, 2008, p.

200). Minsky is not theorizing about “an abstract productivity of capital,” but simply taking into account that returns to capital are imprecise in real production. The problem is that in trying to be explicitly aware of the difficulties of theorizing about an uncertain and complicated real world where production takes time and returns are uncertain, Minsky’s broad and indistinct use of terms merely confuses the reader.

Quasi-Rents and Risk

Insofar as Minsky is actually concerned with quasi-rents as defined by Marshall, they are important because they affect both the demand and supply for investment funds. Supply will be increased if the output price of capital is positively affected by higher demand for the product. Demand is affected because entrepreneurs are attracted to areas of the economy that seem to be producing higher returns. However, although those effects hold true, quasi-rents are not specific to business cycles—they can occur independent of general upswings in the economy. As a result, Minsky’s theory is based on changing risk perceptions.

The change of lender’s and borrower’s risk perceptions is the main trigger that leads to exploitation of unstable financing options and therefore a crisis. The use of external funds, and specifically speculative and Ponzi schemes that depend on a sustained differential between short term and long term interest rates, is directly related to the willingness to incur more risk in investments. As time goes on after a financial collapse, bankers and investors become more complacent and trusting in the financial sector—their perception of risk decreases. “Cassandra-like warnings that nothing basic has changed...are naturally ignored in these circumstances” (Minsky, 2008, p. 237). Papadimitriou and Wray (1999) write, “To a large extent, borrowers and lenders operate on a basis of trial and error; if a behavior is rewarded, it will be repeated. Thus stable periods naturally lead to optimism, to booms and to increasing fragility” (p. 10) The

underlying element in Minsky's cycle is therefore lemming-like behaviors; the pursuit of profit is encouraged by seeing risk-taking result in payoffs.

Business cycles, and the 2008 crash in particular, are more complicated than an excess of risk, and Minsky's discussion of quasi-rents is an attempt to address an important link to the real economy that explains the complexity of the boom. Minsky's use of quasi-rents only makes sense if it is applied to a business cycle like the most recent experience when a particular asset (e.g. houses) is connected with changing risk perceptions. The opportunity for "malinvestments" comes from the uncertain quasi-rents that entrepreneurs were hoping for. For example, the average number of starts of new houses from 2000-2005 was almost 180,000; from 2006-2009 that average had dropped to 115,000 (U.S. Census Bureau, 2011). From this perspective it is clear that demand for houses was rising and developers expected to yield returns that were previously unheard of. However, as touched on above, quasi-rents are probably not a structural element of the business cycle because they are by definition almost a surprise. Quasi-rents, that is, unexpected increased returns to capital output, did not, and could not support the boom in home values. Minsky's use of quasi-rents is an attempt to provide an outlet for this speculation. By blurring the returns to capital, all speculation can be in capital assets.

The land underneath the capital is the more logical, and actual, basis for the sky-rocketing prices. Demonstrating this phenomenon, Fred Harrison (2005) compiled data of land and housing prices in the UK for 1980-1998 to depict the 1990 crash. Housing prices were about 25% higher than 0% appreciation in 1989 and had dipped about 10% below 0% appreciation by 1990; land prices, in contrast, were a full 80% above 0% appreciation in 1987 (two years before the peak in housing), and dropped to almost 40% below 0% appreciation in 1990 (Harrison, 2005, p. 35). Surely some of the increase in housing prices was the result of quasi-rents, but they

clearly lagged behind the rise and fall in land prices. Moreover, land prices were more volatile than the change in housing.

Land Rents versus Quasi-Rents

Geoclassical economists would partly agree with Minsky on the nature of rent seeking (economic rent for geoclassical and quasi-rents for Minsky) that characterizes boom periods. However, geoclassical economists argue that the rent of land, which is not the result of work of the landowner, is a much better basis for both the pursuit of economic rent and the incentive for capital malinvestment. Cobb (2009) writes, “When real estate prices rise and fall, that actually represents a change in the price of the *land*, not the associated buildings” (p. 4). Geoclassical economists argue that because of the nature of capital there are limits to the amount of speculation it can support.

There are three main characteristics of capital that limit its value and therefore its ability to be the source of speculation. First, as it becomes evident that there are profits to be made from capital, more firms will enter the market to produce the capital asset, driving the price back down. Capital assets require maintenance and upkeep to avoid depreciation, diverting returns from the owner. Lastly, they obsolesce and have a limited useful life expectancy that prevents the speculative price from rising above its limited future returns. This becomes obvious if an example, such as a house, is used. The value of the building is constrained first by the cost of comparable new houses, second by the fact that without continual maintenance the roof will fall in, and lastly because styles and tastes will change making this particular style of house potentially obsolete (houses can have exceptionally long lives, if properly maintained, compared to other capital assets like computers or even cars). However, none of these exist for the land

underneath the house; because land has no cost of production, its value is limited primarily by expectations.

Excessive financing on land is a better explanation than Minsky's proposed capital-assets. Because land is needed for every economic activity, in a prospering economy when population, income, and capital are rising, expectations are high for land values to rise. On the other hand, expectations can change at a whim, making land prices more volatile than capital assets.¹⁹ Those two elements combine to explain the volatility and regularity of real estate cycles that have their foundation in speculation. An innovative financial sector is problematic in its own right, but geoclassical economists disagree that reforming banks should be the only concern of policy makers. While, most economists are quick to blame Wall Street for its derivatives and securities, Gaffney (2009) explains, "the more important question...is who or what creates the *conditions* under which imprudent and fraudulent behavior by banks and regulators take place" (p. 156). Without public collection of rent the underlying spark to real estate investment booms will remain.

Empirical Research on the Role of Land in Business Cycles

In order to support their relatively radical claim that land speculation is the source of the majority of business cycles, geoclassical economists have gathered historical data on the role of land in the business cycle. Unfortunately, because theoreticians have disregarded the importance of land markets, it is also largely missing from our statistics. Neoclassical economists merge capital and land into one factor of production, and thus research on land as an independent factor has been limited. The result of these biases is the lack of strong statistics on the value of land. Michael Hudson (2001) examined this in his paper, "Where Did All the Land Go?" He points to the statistics in the early 1990's when the Federal Reserve Board published estimates for land

¹⁹ See chapter four for a discussion on the role of expectations and land prices.

values. In 1993, the value of land “held by all non-financial corporations had a negative value of \$4 billion” (para. 4). This obviously nonsensical number was due to primarily to a specific type of assessment method, “land-residual,” that overvalued the building.²⁰ The flawed methodology has not been revised and no statistics on the value of land in the U.S. are currently published.

Nevertheless, economists have attempted to work with what data is available. In recent years, Edward Leamer (2007) has compiled a vast amount of research on the importance of the housing market to the business cycle, correlating all but two of the business cycles since 1950 to an upswing in residential investment. He notes that residential investment is a small fraction of total GDP growth over the past half century (about 4.2%) (Leamer, 2007, p. 9). In reference to the business cycle, however, residential investment’s importance grows dramatically. Only twice since post-WWII has the housing market collapsed without a recession—1951 and 1967 when the Korean and Vietnam wars intervened, respectively. The two business cycles not correlated with residential investment were in 1953 and 2001. Leamer attributes the 1953 downturn to a reduction in Department of Defense spending at the end of the Korean War, and the 2001 crash to the internet bubble. While residential investment is not equitable with land, it is one of the closest proxy variables that can substitute for the lack of reliable statistics.

In addition to recent work, economists have correlated historical land bubbles with financial panics. As will be explained below, central banks and regulations have done little to influence or mitigate the cycle in the 19th or 20th centuries. Fred Foldvary (1997) compiled a table on data from 1818 through 1989 indicating the regularity with which land value peaks in the U.S. have corresponded with depressions (p. 532). The only disruption to this pattern was during the world wars of the 20th century. Gaffney (2008) relies on Homer Hoyt’s (1933) *100 Years of Land Value in Chicago 1833-1933* to supplement his theoretical analysis. While Hoyt

²⁰ This was mentioned in Chapter Four, and is expanded in Gaffney, 2009, p 50-54.

found a general “Chicago” real estate cycle, Gaffney argues that it is not even specific to Chicago.²¹ He shows that depressions in 1798, 1720 (the South Sea or Mississippi Bubble), and 1634 (the Tulip Mania) were all connected to euphoric beliefs around land price appreciation (Gaffney, 2008, p. 4). The land cycle is neither new nor innovative. What has changed in recent years is the ability of financial firms to dress up their part in the cycle.

Michal Hudson and Minsky

Michael Hudson, who predicted the crash in his 2006 article “The New Road to Serfdom: An Illustrated Guide to the Coming Real Estate Collapse,” takes a unique perspective on financial crisis. Hudson takes issue with what he calls “junk economics,” which “rationalizes debt-leverage asset-price inflation as ‘wealth creation’” (Hudson, 2010, para. 18). Much like Minsky, Hudson’s analysis of the role of savings and debt begins with an interpretation of Keynes. While Minsky was interested in the role uncertainty played in financing, Hudson examines the way the FIRE (finance, insurance and real estate) sector affects savings. He argues that because Keynes did not distinguish “between direct investment in tangible capital goods and loans that [become] the debts of the economy’s non-financial sectors,” he could not analyze how savings drained the economy by creating debt (Hudson, 2004, para. 30). Keynes was worried that as income grew, the propensity to save would increase, diverting more and more income from current consumption—the paradox of thrift. Hudson (2004) takes this analysis further by analyzing the implications of the financial sector’s “distinct propensity of their own to save all their interest and dividends” (para. 24).

The problem Hudson highlights is that today most savings are lent out, becoming a corresponding debt. We have a decrease in net savings—real capital investment, and an increase

²¹ Gaffney (2008) lists Arthur H. Cole, Philip Cornick, Lewis Maverick, Frederick Lewis Allen, Harry Scherman, Carter Goodrich, Ernest Fisher, Homer Vanderblue, Herbert Simpson as other scholars that have investigated “national waves” of real estate cycles (p. 1).

in gross savings—the amount of money available to invest in financial instruments. Hudson (2004) notes that “the value of...financial transactions each day exceeds that of the entire annual U.S. national income” (para. 13). The enormous amount of credit created by gross savings accrues interest charges at exponential rates. However, the returns to financial investments are not costs of production, but rather transfer payments that accrue to firms because of our current institutions. Hudson’s central point is that these transfer payments divert income from the economy, are saved at the extremely high rates characteristic of financial institutions, and then recycled into new debt. The growth of credit then bids up the price of a fixed supply of land, creating an asset bubble.

In “The New Road to Serfdom,” Hudson (2006) shows how in the bubble economy preceding 2008, “debt [became] equal to wealth” (p. 39). Bankers convinced potential homeowners to stretch their monthly payments, regardless of whether those payments would pay down the principal of the loan (interest-only loans, or even negative amortization, were popular at the height of the boom).²² The promise was that home values would grow to not only pay for the mortgage, but finance consumption as well. Debt would translate to wealth as we slept—and for a while it did. Hudson notes that the median price for a home increased from \$109,000 in 1995 to \$206,000 in 2005. He wrote in 2006, “Many...owners are spending tomorrow’s capital gain today by taking out home-equity loans. For families whose real wages are stagnating or falling, borrowing against higher property prices seems almost like taking money from a bank account that has earned dividends” (p. 41). This is the same phenomenon explained in Chapter Four; growing land values are used to finance current consumption, drawing down capital stocks and, as emphasized here, generating unsustainable debt when those property values crash.

²² Note that interest only and negative amortization loans are speculative and Ponzi schemes, respectively, in Minsky’s theory.

Minsky's analysis provides an extension to Hudson's explanation of the fundamental problems of a large financial sector. However, Minsky limits the usefulness of his theory by restricting his analysis to the financial side of the business cycle. As shown by the empirical research in the previous section, real assets, and specifically land, are crucial to an understanding of the business cycle. Over-leveraging was a blatant problem leading up to the 2008 crash, but it was formed by the institutions that allow the financial sector to drain resources from the economy and only worsened by excessive speculative and Ponzi schemes. What Minsky's analysis fails to highlight is the systemic paths into land prices that debt takes. Isolating the role of debt in land speculation then allows for long-lasting policy prescriptions, which Minsky cannot provide.

IV. The Austrian Approach

The Austrian theory is general and meant to highlight perverse policies that cause cyclical variations in an otherwise stable society. While overinvestment is a key feature, it is malinvestment that distinguishes the Austrian theory from other monetary explanations of the business cycle. Austrian economists do not attempt to predict the type of malinvestment or the specific character to the boom and bust. Garrison and Callahan (2003) write, "we can say that maintaining an artificial interest rate, like all price-fixing, will have unintended consequences that the price fixer can do little to control. But the particular consequences always involve particular historical circumstances" (p. 68).

Because the strength of free markets rests on the rationality and combined wisdom of its participants, Austrians argue that credit creation and malinvestment must have an exogenous cause. However, the reliance on the government to spark the credit creation and "fool entrepreneurs" into malinvestment has weak supporting evidence.

In the *NY Times Review of Books*, Paul Krugman and Robin Wells (2010) cite the low interest rates the Federal Reserve enacted during the dot-com bubble as an explanation for the current business cycle. Their major objection to this explanation is that the poor economic indicators through 2005 make it “hard to see, even in retrospect, how the Fed could have justified not keeping rates low for an extended period” (Krugman & Wells, 2010, para. 10). Although this may be true, it does not negate an argument that the Fed, even with the best of intentions, created or enlarged a bubble in the housing market.²³ In fact, it corroborates many Austrian theorists who argue that policy intervention will only prolong malinvestments and spur another bubble. Garrison (2005) writes, “there may be some scope for postponing the market correction—but only by worsening the root problem of intertemporal discoordination and hence increasing the severity of the eventual downturn...attempts to prolong the boom through continued increase in credit can fuel an asset bubble” (p. 39).

Austrian economists argue that because interest rates were prevented from increasing in the early 2000’s, entrepreneurs continued to look for long-term fixed-capital investments.²⁴ For Krugman and Wells to argue that the economy was not recovering quickly enough for the Fed to raise interest rates is immaterial to the question of whether it created the housing bubble. If the Austrians are right that the mediocre recovery and subsequent bubble were both the result of government intervention, then the question of whether it was a good policy lies in the trade-off between the prolonged bubble and our current recession, which Krugman and Wells do not raise.

The Interest Rate and Investment

²³ Ironically, Krugman seems to be ignoring his own insights in his 2005 article in the *NY Times* that the Fed created a bubble in housing to “replace” the internet bubble (Krugman, 2005). If Fed officials had been looking at asset price appreciation, they would have been able to “see” the coming collapse and possibly change their policies.

²⁴ It is important to note that land is an even “better” asset than long-term capital when interest rates decrease. The interest rate is the holding cost of land. When that decreases, the costs of land also decrease. Using the equation from Chapter Four, $V=(R+Va)/i$, as i approaches 0, V goes to infinity.

The Austrians highlight the difference between the “natural” and “money” rate of interest. The natural rate reflects preferences in the economy based on the rate of real savings, while the money rate is the actual market rate and is subject to change because of exogenous changes in the money supply. The interest rate is the primary indicator entrepreneurs use to determine savers’ preferences and hence set investment in the economy. If that interest rate is artificially altered by a change in the money supply, capital creation becomes malinvestments and the economy heads towards a recession.

Minsky’s theory of a structure of interest rates, ranging from low short-term rates for liquid assets to higher long-term rates for capital assets, contradicts the Austrians’ position that government policy causes instability by positing that businessmen will innovate and find opportunities *within* the market to expand credit. For Minsky the structure of interest rates is necessary to show how entrepreneurs would be able to find profit opportunities by exploiting the difference between the rates to finance long term assets with short term debts. The Austrians are blind to Minsky’s theory because of their starting simplifying assumption that there is one interest rate that completely determines investment.

At the base, the difference between Minsky and Austrian economists on this question can be traced to the influences of Schumpeter and Kirzner, respectively. Chapter One outlines the entrepreneurial theories of each, and it was clear that while Kirzner thought entrepreneurs helped produce a stable, competitive market, Schumpeter saw entrepreneurs as a possible threat to the economy. Obviously, entrepreneurs can do both. Today we are well aware of the dangers of the financial innovation with CDO’s, derivatives, securitizations, etc. in the mortgage market, and yet the economy thrives through daring entrepreneurs tapping into new markets (facebook, etc.),

which Schumpeter was quick to acknowledge. The problem occurs when Austrian economists relegate all entrepreneurial error to exogenous causes.

Related to this is the perennial dilemma that Austrian economists confront concerning government “tricking” entrepreneurs through credit expansion. Why should rational investors fail to anticipate the coming bust when the central bank pursues an open and explicit policy of monetary expansion? If firms are aware that consumer preferences have not changed when the central bank changes the money supply, there is no scope for widespread malinvestment that characterizes business cycles; everyone will know to invest in consumption industries. The increased lending will flow through the central bank, be lent out to investors, and become earnings. Increased income will then allow consumers to purchase the increased consumption goods they just produced. This seems like a particularly glaring problem because booms and busts are such regular occurrences in economies. For the Austrian business cycle theory to explain a downturn caused by central bank policy, it remains imperative that entrepreneurs rationally use credit in systematically destructive ways. If entrepreneurs are not fooled, there is no reason for an entire investment industry to be malinvested.

The Importance of Government to Excessive Credit

Austrian economists, however, continue to be dogmatic in their aversion to government intervention in financial markets. They contend that without a complicit central bank, Minsky’s bankers could not expand credit to innovative entrepreneurs. A central bank is necessary to ensure that when banks need to borrow excess reserves that action does not drive up interest rates, which would inhibit further expansion. Murphy (2009), in “Correcting Quiggin on Austrian Business-Cycle Theory,” insists that bank expansion beyond real savings, which does not result in an increase of the interest rate, is always supported by the government: in the course

of daily transactions, the interest rate would naturally be driven to reflect the amount of real savings.

To make this clear, consider Bank A, which has \$100 in new reserves from Joe's demand deposit. Bank A then lends out \$90 to Bob at 5% interest, maintaining its 10% reserve requirements. However, before Bob repays his loan, Joe takes out his \$100. Bank A needs to borrow \$90 in order to fulfill its liability to Joe. Without a central bank, Bank A will go to Bank B and take out a loan of \$90 at 3% interest (it is slightly lower than the normal rate of 5% because Bank A and B have a relationship). When Bob repays his loan, Bank A is able to repay Bank B. However, because Bank A had to pay Bank B interest on the money it needed to cover the intervening period, its revenues from Bob will be lower than initially anticipated (by 2%). Bank A will need to raise the interest rate it charges on future loans to cover this expense. Thus, Austrian economists argue that without a central bank providing cheap credit to cover this type of problem, the interest rate will increase, reducing demand for loans and limiting credit. Additionally, without government pledges to support banks if they become illiquid, banks will be more cautious with how much they lend, "naturally" leading to higher reserves in bank vaults.

Austrians argue that coupled with implicit government backing, the financial sector has been allowed to expand credit beyond the amount of real savings in the economy. Murphy (2009) writes, "Were it not for favored legal privileges granted to banks, the practice of fractional-reserve banking would be "regulated" by market competition." The argument is that because banks can depend on the central bank to extend funds at low rates if necessary, they are more likely to make risky decisions.

A strong argument against the Austrians' reliance on government intervention is the presence of cyclical booms and busts before the institution of a central bank. When pressed on

the question of cyclical downturns before the Federal Reserve, Austrian economists will often point to the many ways that governments have always supported banks. Unfortunately, there is little historical evidence of the stability or instability of free banking because banking has always been subject to comparatively strict government regulation even when there has been no central bank. For example, during the period from 1837-1862, known as the “free banking era,” the government “supported banks” by suspending specie payment during the Panic of 1857.

Calomiris and Schweikart (1991), however, write in, “The Panic of 1857: Origins, Transmission, and Containment,” that the source of the panic “revolves around the financing of western railroad and land speculation in eastern financial markets.... To understand the panic's origins, one must begin with the economic and political history of the speculative boom and bust in investments in the West during the 1850s” (p. 809). The implication is that government policy was secondary, if at all relevant, to the initial credit expansion. Considering that Henry George’s analysis of the depression in the 1870’s follows the same line of argument as Calomiris and Schweikart (1991), the Austrian argument weakens further.²⁵ Similar depressions followed 20 years apart from each other throughout the 19th century, irrespective of government policy.²⁶

Early Austrian economists emphasized an elastic credit system that was negatively influenced by central planning, but it was primarily the character of credit creation that defined the business cycle. The argument that government policy worsens the situation is not the same as the government causing the underlying problem. The initial incentive to extend credit has been apparent since at least the tulip mania in the 17th century, and government policy has been anything but consistent.

²⁵ Foldvary (1997) writes that the “land grants by the federal government...contributed to the depression of the 1870’s [and] was therefore not a purely endogenous market process but induced to a great extent by the shock of infrastructure subsidies by government, and speculation at the urban terminus of the railroad...”

²⁶ See section “Empirical Research on the Role of Land in Business Cycles”

International Bubbles and the Global Savings Glut

When implicating government policy as a primary factor of financial crises it is important to consider that the crash of 2008 was not limited to the United States (Krugman & Wells, 2010). Monetary policy was less aggressive and less pervasive in Europe than the Federal Reserve's policies, but the housing bubbles across the Atlantic were comparable, or worse, than the states'. The synchronicity of the housing bubble across relatively independent economies, at least insofar as their monetary policy is concerned, places serious doubt on the Austrians' explanation of causation. Moreover, when the central bank did increase short term rates in 2004, the long term rates, which Austrian economists emphasize affect relative prices for capital, did not change. This presence of a global savings glut that fed capital into the housing bubble further erodes the Austrian argument. Krugman and Wells (2010) write, "These capital inflows also drove down interest rates—not the short-term rates set by central bank policy, but longer-term rates...." (para. 15). An important point is that even when the central bank wanted to limit monetary expansion, it did not have the tools to curb credit, indicating that other factors were more influential.

As shown above, Hudson argues that the global savings glut was due primarily to the FIRE sector confiscating savings and translating them into debts. The ability of interest payments to rise exponentially, returns that real capital investment cannot compete with, parasitically drains the economy. The result is more and more savings poured into a limited asset—land. Hudson's point is that, "The real economy is unable to grow at a rate required to support the growth in debt service" (Hudson, 2010, para. 100). He argues that any increase in the ability of the mortgage-buyer to pay, most importantly tax breaks, will be translated into yet larger loans and interest payments. The tax shift away from property towards wages and

consumption, spurred by the diffusion in homeownership but really for the benefit of the FIRE sector, further reduces the ability of the average person to pay his mortgage loan.

This diversion of income back into the FIRE sector only inflates the asset bubble and prevents real investment; essentially there is a leakage out of the circular flow of the economy. Real wages have stagnating as a result of this interruption of Say's law, explaining the growing inequality in our society and the increase in financial capital to fund the asset bubble. The negative balance of trade and inflow of capital from international markets only worsened a domestic problem. Thus, the cause of low long term interest rates, even when monetary policy tightened, is found in the interactions in the real estate and financial markets, not government policy.

While the Austrian business cycle theory draws from the insights and work of many brilliant economists, it is not an adequate explanation of our current recession, or any past episode of boom and bust. Although malinvestment and real opportunity costs are central to business cycles, the role of monetary policy has minimally, if at all, factored into changing expectations and financial over-leverage.

IV. Changing Expectations and the Crash

The end of a bubble appears in the economy as an unexpected crash, but as Roubini and Mihm (2010) write, "what inaugurates a financial crisis is rarely something dramatic or out of the ordinary, merely a leveling off, a movement sideways, a few unsettling signs" (Roubini & Mihm, 2010, p. 89). Foldvary (1991) explains that rising costs during a boom lay the foundation for the coming crash. He writes that the "inflection" point of the cycle is most instructive, that is, when the increase in investment changes from a positive second derivative (growing at an increasing rate) to a decreasing second derivative (growing at a decreasing rate). He writes:

Hence, the seeds of the depression are laid in the middle of the boom when the second derivative turns negative. This accords with the generic theory of one possible cause of the downturn as an increase in costs, which would occur during the boom, reducing profits until the boom comes to a halt. para. 38.

Increasing costs figure prominently in the Austrian theory: the opportunity of cost of real resources overtakes expansionary monetary policy. The geoclassical theory follows this same logic, positing that unsustainable investments will change expectations, causing land prices to fall. Minsky is not quite as explicit, but he writes that increases in interest rates will render speculative and Ponzi schemes untenable. On this particular issue, the theories complement each other. Each theory emphasizes an important element, and none is necessarily incompatible with another. The geoclassical explanation, however, is the most complete. Underneath rising interest rates or opportunity costs is changing expectations of how current investments will fare in the future. From the time the second derivative switches sign, capital malinvestment, Ponzi schemes, or land speculation is unsustainable; what changes to prompt a crash are the expectations that it can continue.

Roubini and Mihm (2010) capture the mood of the situation in early 2008 writing, “The thinking was that irrational panic was driving markets.... Once investors regained their sanity, it was thought, prices would return to their normal levels” (p. 98). Obviously, that was not the case. In 3 years median new home prices had lost 56% of their value, or \$44,000 (U.S. Census Bureau, 2011b). The real costs of investment could not be avoided. Rising interest rates and increases in prices for real resources will influence expectations (and vice versa), but it the very expectations themselves that cause the precipitous drop in prices that characterized the 2008 crash. When expectations fall even slightly in response to real indicators, land prices fall dramatically, fulfilling investors’ worst fears.

V. Policy

The policies of each theory are obviously related to their conception of the sequence of events during a financial crash. Because the Austrian business cycle theory implicates an exogenous cause, their policy recommendations revolve around removing that element. They argue for the elimination of both the central bank and governmental regulations on financial institutions, theorizing that market forces will contain bankers. Decentralizing banking, however, focuses too narrowly on the financial sector (not to mention ignores historical instances that demonstrate its folly). In their limited interest in central bank interference, Austrian economists have not been able to see the larger picture around business cycles. Gaffney (2009) shows that the tax policy has played an arguably larger role in capital malinvestment, which is the actual basis of instability. Moreover, a critical investigation reveals that monetary policy has not been an instigating factor of at least the majority of large cyclical variations in production. Since theorists rejected Hayek's important insight that monetary causes are "rarely" the initial factor of a crisis, Austrians have lost a central connection to the real economy, and their policy recommendations have suffered as a result.

Minsky and Gaffney are more directly aligned in their policy prescriptions than their business cycles theories would initially suggest. The vision of a capitalist economy working for citizens rather than against them is a common element. Both acknowledge that large corporations and banks reduce employment and thus argue for limitations on their growth. Gaffney (2009) uses statistics to show that "the larger the corporation, the higher the proportion of its income comes from land and capital rather than from labor" (p. 93). Minsky argues that the ability of large firms to finance and utilize capital assets reduces the percentage of labor employed. Both comment on the negative effect of tax structures that bias investment and businesses away from labor and toward capital assets.

A striking parallel between the two economists is the belief that reforms like the “real bills” doctrine will regulate banks by instituting a direct relationship between lenders and borrowers. Gaffney (2009) writes that “real bills” is meant to maintain “banks’ liquidity by regulating them away from volatile real estate collateral and derivatives there from,” thereby ensuring that pay-back periods are not excessively long or subject to volatile fluctuations (p. 170). Minsky (2008) recommends the “real bills” doctrine because “cash flows to fulfill the contractual commitment [are] clearly visible.... Furthermore, these transactions [are] to take place quite soon,” (p. 229). The distinction between Minsky and Gaffney is that Minsky recommends “real bills” solely because it streamlines the lending process by avoiding complicated financial agreements on long-term capital assets. He does not see the fundamental instability inherent in using land as the basis for a bank’s asset composition. Gaffney, however, takes the analysis one step further by insisting that land is the “longest-lived,” most volatile, illiquid asset, and therefore the worst option for a bank’s balance sheet.

The clear disparity between Minsky and Gaffney can be found by comparing their conclusions. Gaffney (2009) writes, “By adopting a unified framework that encompasses land, capital renewal, and banking, economics could lead us out of the present morass and save us from the next” (p. 203). Minsky (2008) says, “What is needed is a restructuring of the economy.... Such a restructuring will enjoy only transitory success. After an initial interval, the basic disequilibrating tendencies of capitalist finance will once again push the financial structure to the brink of fragility” (p. 370). It is as if Minsky is implicitly agreeing with Gaffney—financial reform will work for only so long.

Gaffney (and most geoclassical economists) believe that a primary flaw in the Keynesian, and hence Minskyian, approach, is that it assumes “economic causation runs largely from

financial factors to real events, rather than vice versa” (Gaffney, 2009, p. 171). Stepping back from the financial sector, Gaffney (2009) pleads that economists recognize that “the real economy matters” (p. 55). In other words, while credit is essential to the story, it is detrimental to ignore the real factors that ultimately initiate credit expansion. Gaffney argues that if politicians choose to adopt policies that curb overpricing of land, and the subsequent fixed capital investments, capitalism will not be subject to swings in credit and production. The point is that Minsky’s policies do not address the underlying fundamentals that drove the economy into a recession. Without recognizing the principal causations of the business cycle, all policies will be inadequate.

Perhaps most compelling about geoclassical policy reform are the implications beyond the elimination of the business cycle. Gaffney (1994) writes of George’s land tax:

George would cut the Gordian knot of modern dilemma-bound economics by raising demand, raising supply, raising incentives, improving equity, freeing up the market, supporting government, fostering capital formation, and paying public debt, all in one simple stroke. It is quite a stroke, enough to leave one breathless. p. 41

This is because land taxes, which cannot be shifted, induce the landowner to use land to its highest capacity, or sell to someone who will. The increased employment of labor and capital raises aggregate demand, which is fulfilled by the increased supply produced from using land in its best use. The taxable capacity of land and other natural resources limits the need for taxes on productive labor and capital. Moreover, the tax is “progressive because the ownership of land is so highly concentrated among the most wealthy...and efficient because it is neutral among rival land-use options” (Gaffney, 1994, p. 41). Government can finance public services without driving away labor or capital, which can migrate when taxed, unlike land. Geoclassical tax policies also address pressing environmental issues. By increasing the cost to hold land in the city center, where land values are the highest, land taxes curb urban sprawl. Focusing

development in cities preserves the surrounding nature, limiting environmental destruction. The geoclassical theory synthesizes and reconciles where other theories insists on an impasse—for equity, compromise efficiency, for environmental preservation, compromise free markets. Austrian economics and Minsky have no comparable policy platform. More than the elimination of the business cycle, the geoclassical tax shift implies an integration of incentives and harmony of interests where today we experience needless conflict.

Conclusion

Austrian economics has largely been ignored by mainstream economists. Nouriel Roubini, one of the most prominent economists to forecast the financial crisis, writes one line in *Crisis Economics* explaining the causes of a business cycle from the Austrian perspective. Roubini notes the distinction between “sustainable” and “unstable” expansion without explaining the reasoning beyond the claim that only expansion fueled by savings is real growth. The reason to highlight Roubini out of all the characterizations of Austrian theory is not because he eventually finds something of value in the theory, but because he, like many others, has failed to see a major, if not the major, contribution of Austrian economics to business cycle theory. Its central feature, malinvestment, distinguishes it from almost all other macroeconomic theory. What the theory demonstrates is not that central bank policy will create a business cycle (although perhaps it will influence it), but that any systematic investment that does not put capital to its best use will prevent full employment and, if it becomes scarce enough, create a depression.

What Roubini and most other economists focus on from the Austrian theory is the insistence that monetary policy creates unsustainable booms. This, however, may be partly because Austrian economists have made that their focal point. Garrison (2001) writes, “Despite our explicit focus on saving, investment, consumption, and production time, the theory of boom and bust is, root and branch, a monetary theory” (p. 52). Because they insist on the relatively limited influence of Federal Reserve policy as the cause of world wide crashes, new research is focused on ways to support their policy recommendations.²⁷ They avoid the complications of speculative bubbles and international crises because on the one hand rational entrepreneurs are only thwarted by government intervention, and on the other hand government intervention is not

²⁷ See Evans, 2008

international. The answer lies in the insights of Minsky and geoclassical economists—bankers themselves promote a policy of credit expansion in pursuit of economic rent. The Austrian theory of the business cycle is essential to understanding how credit will affect the real economy. However, their reluctance to look past expansionary monetary policy and find other reasons for booms and busts is a large gap in the theory.

Minsky's Financial Instability Hypothesis has fared better than the Austrians. He is on the edge of mainstream economics, labeled as "Keynes' most radical interpreter," rather than outright heterodoxy (Roubini & Mihm, 2010, p. 39). The fact that his analysis focuses on the most notorious element of business cycles—namely, Wall Street—has also helped its credibility. However, much like the Austrians' insights on capital in the economy, Minsky's analysis of the financial sector is only a part of the problem. In the article, "The Minsky Moment" in *The New Yorker*, John Cassidy (2008) lauds Minsky writing, "policymakers ought to be discussing how to reform the financial system so that it serves the rest of the economy, instead of feeding off it and destabilizing it." (para. 10). However, the very problem with Minsky's work is that he does not explain beyond intangible generalities how the financial sector creates unsustainable debt structures. We need to turn to Michael Hudson to understand how asset bubbles "feed off" the economy. Hudson's work analyzing the FIRE sector makes essential connections between real estate, savings, financial innovation, and instability. Furthermore, the waste of real resources, so emphasized by Austrian economists, is another aspect that Minsky does not analyze. Mason Gaffney's explanations of rising land values and the concomitant capital production more clearly explain the instability that Minsky wants to eliminate.

Each theory has an important contribution to the discussion. Geoclassical theory benefitted immensely from explicitly incorporating capital theory first established by Austrian

economists. The Financial Instability Hypothesis highlights the essential role that the banking sector plays in the cycle. However, if the current crisis was built on speculative asset values and maintained by mountains of debt, then there must be more to the analysis than changing business expectations or government policy. Cobb (2009) writes, “The primary cause of the bubble was the allure of speculative gain...speculative bubbles, by their nature, cannot be sustained because they produce no new value” (p. 5). The vampire-like draining by the real estate bubble, aided by an innovative financial sector and exacerbated by real capital malinvestments, are the underlining features of the financial crisis. Although a general cycle theory is by definition not specific, the ability of geoclassical economists to predict the crash of 2008 proves its relevance.²⁸ Only the geoclassical analysis incorporates crucial aspects that define the general business cycle of the past century, including the crash of 2008.

§§§

It is almost impossible not to feel inadequate in response to the considerable challenges we are facing today. However, our intention defines our world. The loss of jobs to foreign countries, the destruction of the environment, the gain of power by corporations, all reflect where we have placed our values. Our corporations feel no attachment to America or its welfare, but rather to their profits. We have come to regard wealth and power more highly than our societal health. It is crucial to recognize that this is not chance, nor is it destiny. We are entitled to be pessimistic only to the extent that we relinquish our freedom to act. Only our apathy and misguided beliefs in the status quo prevent reform.

²⁸ Gaffney (2008) lists: Fred Foldvary (2007), Fred Harrison (2005), Michael Hudson (2006), and Bryan Kavanagh (2007) p. 1.

References

- Anderson, W. L. (2009). Say's Law and the Austrian Theory of the Business Cycle. *The Quarterly Journal of Austrian Economics*, 12 (2), 47-59.
- Caldwell, B. (2005). *Hayek's Challenge: An Intellectual Biography of F. A. Hayek*. Chicago: University of Chicago Press.
- Callahan, G. & Garrison, R. W. (2003). Does the Austrian Business Cycle Theory Help Explain the Dot-Com Boom and Bust? *The Quarterly Journal of Austrian Economic* , 6 (2), 67-98.
- Calomiris, C.W. & Schweikart, L. (1991). The Panic of 1857: Origins, Transmission, and Containment. *The Journal of Economic History*, 51 (4), 807-834.
- Cassidy, J. (2008, February 4). The Minsky Moment. *The New Yorker*.
- Cochran, J. P. & Glahe, F. R. (1994). The Keynes-Hayek Debate: Lessons for Contemporary Business Cycle Theorists. *History of Political Economy*, 26 (1), 69-94.
- Cochran, J. P. (2001). Capital-Based Macroeconomics: Recent Developments and Extensions of Austrian Business Cycle Theory. *The Quarterly Journal of Austrian Economics*, 4 (3), 17-25.
- Cobb, C. (2009). Editor's Introduction. In C. Codd (Ed.). *After the Crash: Designing a Depression-Free Economy*. West Sussex: Wiley-Blackwell.
- Evans, A. J. (2008). Austrian Business Cycle Theory in Light of Rational Expectations: The Role of Heterogeneity, the Monetary Footprint, and Adverse Selection In Monetary Expansion. *Quarterly Journal of Austrian Economic*, 11, 81-93.

Federal Reserve Board Statistical Release (2011, February 22). FRB: Delinquency Rates; All Banks, NSA. Retrieved from:
<http://www.federalreserve.gov/releases/chargeoff/delallnsa.htm>.

Foldvary, F. (1991). Real Estate and Business Cycles: Henry George's Theory of the Trade Cycle. Presented at the Lafayette College Henry George Conference: Latvia University of Agriculture.

Foldvary, F. (1997). The Business-Cycle: a Georgist-Austrian Synthesis. *American Journal of Economics and Sociology*, 56, 521-541.

Gaffney, M. (1970). Adequacy of Land as a Tax Base. In D. Holland (Ed.), *The Assessment of Land Value* (pp. 157-212). Madison: University of Wisconsin Press.

Gaffney, M. (1994). Neoclassical Economics as a Stratagem Against Henry George. In M. Gaffney and F. Harrison (Eds.), *The Corruption of Economics* (pp. 29-163). London: Shephard-Walwyn.

Gaffney, M. (2008, July/August). The Crash of 2008. *Insights*.

Gaffney, M. (2009). *After the Crash: Designing a Depression-Free Economy*. (C. Cobb, Ed.). West Sussex: Wiley-Blackwell.

Garrison, R. W. (1990). Austrian Capital Theory: The Early Controversies. In B. Caldwell (Ed.), *Carl Menger and his Legacy in Economics* (pp. 133-154) Durham, NC: Duke University Press.

Garrison, R. W. (2001). *Time and Money: The Macroeconomics of Capital Theory*. New York: Routledge.

- Garrison, R. W. (2005). The Austrian School. In B. S. Vane (Ed.), *Modern Macroeconomics: Its Origins, Development and Current State* (pp. 474-516). Aldershot, England: Edward Elder.
- Garrison, R. W. (2009). Interest Rate Targeting During the Great Moderation: A Reappraisal. *Cato Journal*, 29 (1), 187-200.
- Geiger, G. R. (1933). *The Philosophy of Henry George*. New York: Macmillan Press.
- George, H. (2008). *Progress and Poverty*. New York: Robert Schalkenbach Foundation.
- Goldberger, P. (2010, October 4). What Happens in Vegas: Can you bring architectural virtue to Sin City? *The New Yorker*.
- Harrison, F. (2005). *Boom Bust: House Prices, Banking and The Depression of 2010* (2nd ed.). London: Shephard-Walwyn.
- Horsely, S. (2008, December 8). Can Infrastructure Spending Rev up the Economy? *National Public Radio*.
- Hudson, M. (2001) Where Did All the Land Go? Retrieved from <http://michael-hudson.com/2001/03/where-did-all-the-land-go-the-fed%E2%80%99s-new-balance-sheet-calculations-a-critique-of-land-value-statistics/>.
- Hudson, M. (2004). Saving, Asset-Price Inflation, and Debt-Induced Deflation. *Post-Keynesian Conference*, Kansas City.
- Hudson, M. (2006, May). The New Road to Serfdom. *Harper's*.
- Hudson, M. (2010). From Marx to Goldman Sachs: The Fictions of Fictitious Capital. *Critique*.
- Kindleberger, C. P. (2008). *Manias, Panics, and Crashes: A History of Financial Crises* (5th ed.). New York: Wiley.
- Krugman, P. (1998, December 4). The Hangover Theory. *Slate*.

- Krugman, P. (2005, May 27). Running out of Bubbles. *NY Times*.
- Krugman, P. & Wells, R. (2010, September 30). The Slump Goes On: Why? *New York Times Review of Books*.
- Leamer, E. (2007). Housing is the Business Cycle. *NBER Working Paper*, no 13428.
- MegaRail Transportation Systems, Inc. (n.d.) "MegaRail Monorail, LRT & BRT Affordable Alternate." Retrieved from <http://www.megarail.com/pdf/MGMT-6.pdf>.
- Minsky, H. P. (2008). *Stabilizing an Unstable Economy*. New York: McGraw Hill.
- Monroe, A. J. (1998) Interview with Mason Gaffney on The Corruption of Economics. Retrieved from <http://www.progress.org/gaffnint.htm>
- Murphy, R. P. (2009, May 25). Correcting Quiggin on Austrian Business-Cycle Theory. Article posted to <http://mises.org/daily/3466>
- Papadimitriou, D. B. (1992). Minsky on Himself. In S. Fazzari & D. B. Papadimitriou (Eds.) *Financial Conditions and Macroeconomic Performance* (pp. 13-26). New York: M.E. Sharpe.
- Papadimitriou, D. B. & Wray, L. R. (1998). The Economic Contributions of Hyman Minsky: Varieties of Capitalism and Institutional Reform. *Review of Political Economy*, 10 (2), 199-225.
- Papadimitriou, D. B. & Wray, L. R. (1999). Minsky's Analysis of Financial Capitalism. *Levy Economics Institute Working Paper*, 275.
- Post-Autistic Economics (n.d.) A Post-Autistic History of the History of Economics. Retrieved from <http://www.paecon.net/StrangeHistory.htm>
- Reich, R. B. (2010). *AfterShock*. New York: Alfred A. Knopf.

Roubini, N. & Mihm, S. (2010). *Crisis Economics: A Crash Course in the Future of Finance*.

New York: The Penguin Press.

Steele, G. R. (1993). *The Economics of Friedrich Hayek*. London: Macmillan Press.

Tempelman, J. H. (2010). Austrian Business Cycle Theory and the Global Financial Crisis:

Confessions of a Mainstream Economist. *The Quarterly Journal of Austrian Economics*,
13 (1), 3-15.

Tullock, G. (1987). Why the Austrians are Wrong about Depressions. *The Review of Austrian*

Economics, *2*, 73-78.

U.S. Census Bureau (2011, April 19). New Residential Construction. Retrieved from:

<http://www.census.gov/const/newresconst.pdf>.

U.S. Census Bureau (2011b). Median and Average Sales Prices of New Homes Sold in United

States. Retrieved from: <http://www.census.gov/const/uspricemon.pdf>.

Vaughn, K. I. (1994). *Austrian Economics in America: The Migration of a Tradition*. New York:

Cambridge University Press.

Wray, L. R. & Tymoigne, E. (2008). Macroeconomics meets Hyman P. Minsky: The Financial

Theory of Investment. *Levy Economics Institute Working Paper*, no 543.