



The Plankton Theory Meets Minsky

Watching the on-going meltdown in the sub-prime mortgage market, which is triggering a sharp tightening of underwriting standards to these dicey credits, I was reminded of prescient writings by two serious thinkers: Bill Gross and Hyman Minsky. Both narratives go back a long ways, with something that Bill wrote in August 1980¹ – 27 years ago! – particularly poignant:

“The Plankton Theory, like life itself, begins and ends in the ocean. Plankton, of course, are almost microscopic organisms that serve as food for higher life forms. Without plankton almost every fish and mammal in the sea could not survive, since most species depend upon other fish for their existence and plankton are the initial building blocks of the entire process. Logic would suggest, therefore, that in attempting to forecast the well being of the Great White Whale, Jaws, or even Jaws II, that one of the factors to consider would be the status and future outlook of the plankton. That, in one hundred words or less, is the Plankton Theory.

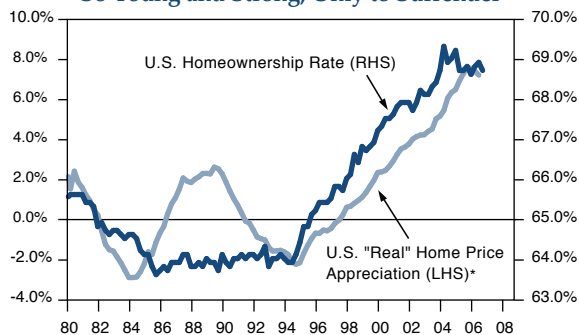
Now, what possible significance could this have for the investment world? Plenty. Take for example, the area of real estate, especially that of single family housing. We’re all familiar with the rapid escalation of home prices over the last 10 years. For most Americans, their homes have been the best and in many cases the only investment that they have made in their entire lives. Some have gone so far as to invest in several homes and have endured ‘negative carry’ on the cash flow in anticipation of leveraged capital gains a few years down the road. But where does it stop?

Can housing continue to increase at twice the Consumer Price Index for the next 10 years?

One way to measure might be via the Plankton Theory. In the case of real estate, the plankton would be the first-time buyer (perhaps a young married couple) with a desire to own their own home but with very little capital to carry it off. When the time comes that they can’t pull it off – either through an inability to come up with a down payment, or to service the monthly mortgage – then the ‘plankton’ would disappear and the rapid escalation in housing prices would ease as well. For, unless the current homeowner has someone to sell his house to, he’ll be unable to afford the house with the view or that extra bedroom, and the process would continue into the echelons of Beverly Hills and Shaker Heights. In the end, the entire market would wither on the investment vine and home prices would stop increasing at the same rapid rate. So to gauge the health of the housing market, look first at the plankton. Without their presence and financial vitality, the market’s not going to repeat the experience of the past 10 years.”

Bill’s call was a good one, as displayed in Chart 1: home price appreciation tumbled in the first half of the 1980s, as the homeownership rate fell: the Plankton Theory at work! Draconian Fed tightening at the beginning of the 1980s had something to do with it, too, of course, as the Plankton were priced out of the market by high interest rates, independent of the availability – or underwriting standards – for home mortgage loans.

Say a Prayer For the Plankton, Who Started Out So Young and Strong, Only to Surrender



* "Real" Home Price Appreciation is a trailing 5-yr CAGR difference between the OFHEO Home Price Index and Core CPI
Source: OFHEO, Bureau of Labor Statistics, Bureau of Census

Chart 1

But the theory held: it's the first-time buyer, stretching to buy, that is the life's blood of vibrant property markets. And intrinsically, there is nothing wrong with a young family stretching to buy that first house; most all of us did, as did our parents (many with the aid of the GI Bill). Optimism about rising incomes and making lives better for our children is the cornerstone of the American Dream.

But the human condition is inherently given to the Mae West Doctrine that if a little of something is good, more is better, and way too much is just about right. Such is the case in capitalist finance, as brilliantly diagnosed by both John Maynard Keynes and his disciple, Hyman Minsky. I first introduced Minsky to these pages way back in January 2001², just as the corporate sector was sinking into recession, taking the aggregate economy with it, and the Fed was initiating a massive easing cycle.

Minsky, who passed away in 1996, was the father of the Financial Instability Hypothesis, providing a framework for distinguishing between stabilizing and destabilizing capitalist debt structures. He first articulated the Hypothesis in 1974, and summarized it beautifully in his own hand in 1992:

"Three distinct income-debt relations for economic units, which are labeled as hedge,

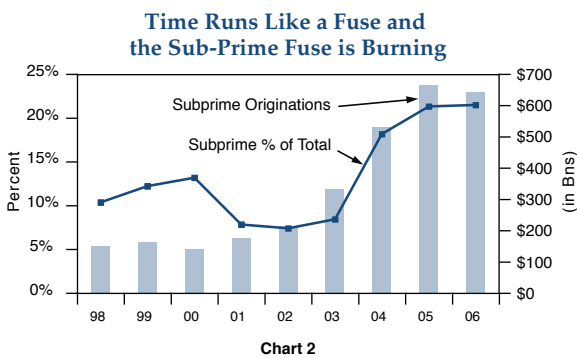
speculative, and Ponzi finance, can be identified. Hedge financing units are those which can fulfill all of their contractual payment obligations by their cash flows: the greater the weight of equity financing in the liability structure, the greater the likelihood that the unit is a hedge financing unit. Speculative finance units are units that can meet their payment commitments on 'income account' on their liabilities, even as they cannot repay the principal out of income cash flows. Such units need to 'roll over' their liabilities – issue new debt to meet commitments on maturing debt. For Ponzi units, the cash flows from operations are not sufficient to fill either the repayment of principal or the interest on outstanding debts by their cash flows from operations. Such units can sell assets or borrow. Borrowing to pay interest or selling assets to pay interest (and even dividends) on common stocks lowers the equity of a unit, even as it increases liabilities and the prior commitment of future incomes.

It can be shown that if hedge financing dominates, then the economy may well be an equilibrium-seeking and containing system. In contrast, the greater the weight of speculative and Ponzi finance, the greater the likelihood that the economy is a deviation-amplifying system. The first theorem of the financial instability hypothesis is that the economy has financing regimes under which it is stable, and financing regimes in which it is unstable. The second theorem of the financial instability hypothesis is that over periods of prolonged prosperity, the economy transits from financial relations that make for a stable system to financial relations that make for an unstable system.

In particular, over a protracted period of good times, capitalist economies tend to move to a financial structure in which there is a large weight to units engaged in speculative and Ponzi finance. Furthermore, if an economy is in an inflationary state, and the authorities

attempt to exorcise inflation by monetary constraint, then speculative units will become Ponzi units and the net worth of previously Ponzi units will quickly evaporate. Consequently, units with cash flow shortfalls will be forced to try to make positions by selling out positions. This is likely to lead to a collapse of asset values."

Clearly, the explosion of exotic mortgages – sub-prime; interest only; pay-option, with negative amortization, et al – in recent years, as shown in Chart 2, have been textbook examples of Minsky’s speculative and Ponzi units³.



Source: Inside B&C Lending
While many mortgage professionals disagree on a precise definition for what constitutes a sub-prime loan, we believe this chart represents the OCC definition of sub-prime, which is any loan with a FICO score of 660 or below.

And as Bill Gross explained long ago, such mortgages have been the food of the Plankton, the first-time homeowner, driving the homeownership rate to record highs, as displayed back in Chart 1, while also fueling accelerating home price appreciation. But as Minsky had forewarned, eventually this game must come to an end, as Ponzi borrowers are forced to “make positions by selling out of positions,” frequently by stopping (or not even beginning!) monthly mortgage payments, the prelude to eventually default or dropping off the keys on the lenders’ doorstep.

That is happening. And true to form, Ponzi lenders are now recognizing their sins of irrational exuberance, repenting and promising to sin no more, dramatically tightening underwriting

standards, at least back to Minsky’s Speculative Units – loans that may not be self-amortizing, but at least are underwritten on evidence that borrowers can pay the required interest, not just the teaser rate, but the fully-indexed rate on ARMs. From a **micro**economic point of view, such a tightening of underwriting standards is a good thing, albeit belated. But from a **macro**-economic point of view, it is a deflationary turn of events, as serial refiners, riding the back of presumed perpetual home price appreciation, are trapped long and wrong.

And in this cycle, it’s not just the first-time homebuyer – God bless him and her! – that is trapped, but also the speculative Ponzi long: borrowers who weren’t covering a natural short – remember, you are born short a roof over your head, and must cover, either by renting or buying – but rather betting on a bigger fool to take them out (“make book”, in Minsky’s words). Thus, the supply of plankton is twice drained.

Which means that the bigger fish in the domestic and global economic sea are going to be living on leaner diets. It also means that any given level of central-bank enforced short-term policy rates will become ever more restrictive with the passage of time. That is nowhere more the case than in the United States, where mortgage originators’ orgy of Ponzi finance stifled the Fed’s ability to temper irrational exuberance in housing with hikes in the Fed funds rate.

More specifically, as long as lenders made loans available on virtually non-existent terms, the price didn’t really matter all that much to borrowers; after all, housing prices were going up so fast that a point or two either way on the mortgage rate didn’t really matter. The availability of credit trumped the price of credit. Such is always the case in manias.

It is also the case that once a speculative bubble bursts, reduced availability of credit will dominate the price of credit, even if markets and policy makers cut the price. The supply side of

Ponzi credit is what matters, not the interest elasticity of demand.

Bottom Line

The ongoing meltdown in the sub-prime mortgage market would not matter, except for those directly involved, except that it marks the unraveling of Ponzi finance units that, on the margin, were the plankton of the bubbling property sea of recent years. As the bubble was forming, riding on first-time homebuyers with first-time access to credit on un-creditworthy terms, and first-time speculators riding the same with visions of bigger first-time fools to take them out, all looked well. But as Minsky warned, stability is ultimately destabilizing, as those who require perpetual asset price appreciation to make book are forced to sell to make book. Such is reality presently in the U.S. residential property market, which has flipped from a sellers' market on the wings of buyers with exotic mortgages to a buyers' market of only the creditworthy.

This state of affairs need not produce a U.S. recession. But it does unambiguously render any given stance of Fed policy more restrictive: a tightening of credit supply based on underwriting terms means that any given policy rate will elicit reduced effective demand for credit. And that's the stuff of seriously easier monetary policy to come. Just as mortgage demand seemed inelastic to rising short rates when availability was riding relaxed terms, so too will demand seem inelastic to falling short rates when availability faces the headwind of restrictive terms.

It may be a while before the Fed accepts and recognizes this, waiting for these Minsky style debt-deflation dynamics to become evident in

broader measures of the economy's health, notably job creation. But make no mistake: A Minsky Meltdown in the most important asset in most Americans' asset portfolio is not a minor matter. Bill Gross' Plankton Theory ain't just a theory, but a reality.

Once the Fed begins easing, it will be a long journey down for short rates.

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1 "The Plankton Theory," *Investment Outlook*, August 1980.

2 "Capitalism's Beast of Burden," *Fed Focus*, January 2001.
http://www.pimco.com/LeftNav/Featured+Market+Commentary/FF/1999-2001/FF_01_2001.htm

3 For the record, let it be noted that the pay-option mortgage, with negative amortization, which has witnessed explosive growth in recent years is actually a rather old product, just not one that was widely used in the first two decades of its creation. To the best of my knowledge, the inventor of the product was Golden West Financial right here in California in 1981. Here's the description of the loan from Golden West's 10-K filing of December 2005:

"After bank regulators authorized ARMs in 1981 to help mortgage lenders better manage interest rate risk, we and other major residential portfolio lenders in California and elsewhere evaluated various ARM products to find solutions that would benefit borrowers and also allow us to manage interest rate risk without assuming undue credit risk. The product selected by most major residential portfolio lenders on the West Coast, and various others throughout the country, was a product often described as an "option ARM" because of the payment options available to borrowers. For the past 25 years, we have continued to originate our version of the option ARM because we believe that borrowers benefit from its structural features and because we have developed pricing, underwriting, appraisal, and other processes over the years to help us manage potential credit risks. Although we have originated some other types of ARMs, almost all of our ARMs are option ARMs."

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