

# Instability: Macro, Banking and Agency:

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Thirty years of prosperity, falling interest rates, rising stocks and bonds, moderate inflation and widening inequality of wealth within nations had led to an unstable position. While inequality has receded between countries, it had increased within countries regardless of their economic model or system of politics.

The financial industry was not alone in seeing greater inequality of remuneration and reward but it was the extreme example that stood out when matters came to a head in 2008. The financial crisis was not the simple product of these imbalances which included imbalances within economies and between them. The current account imbalance between East and West, the export dependency of China and other Asian economies, the consumption dependency of the Western economies were contributors to the instability in the system, but no single factor precipitated the crisis. Neither was 2008 such a milestone in the dynamics of this theme in history. It was certainly no terminal point, more of an important node. What it did do was to expose the failure of principal agent relationships by focusing public attention on their particular manifestation in the financial industry.

Leverage in the banking system had increased steadily over multiple decades. There are a number of reasons for this including greater diversification of business within banks, a great moderation of volatility resulting in higher model prescribed optimal leverage, a non-trivial dose of complacency, and diminishing marginal returns to scale. The Basel framework for prescribing appropriate levels of capital to be held in order to absorb the riskiness of assets was a reaction to reign in excessive leverage. Central banks recognized that in the event of a sufficiently large bank failure they would have little choice but to bail out the errant bank in order to secure the system as a whole. This was a reality not lost on the banks.

The intellectual capacity dedicated to the financial industry is considerable.

Banks, insurance companies and hedge funds hire mathematicians, physicists and engineers among a wide array of scientists to help them make money. They also hire legal and regulatory minds of the highest calibre to help them to engage with regulators. No wonder then that regulators efforts to control the behavior of financial institutions have been confounded at every turn.

An example of this was the growth of the so-called Shadow Banking industry, a system of financial institutions which operate largely beyond the control of regulators by eschewing deposit taking and other retail investor interface. In the years leading to the 2008 crisis banks created massive off balance sheet entities such as SIVs, which were little more than off balance sheet banks with complex capital structures designed to run unregulated, and CDOs which had a similar structure with a few additional stabilizing constraints. These structures allowed the application of almost boundless leverage which escaped the regulators' control if not scrutiny. As a system therefore, leverage surged beyond the estimation of the regulators and conventional metrics.

The attraction of the financial industry was precisely this leverage seen from a different angle. For a given capital base the financial industry offered the highest per employee assets of any industry. Since labour is compensated with a proportion of its marginal product, labour naturally seeks such industries out which deploy more assets per person. Pay levels and bonuses in the financial industry surged attracting the brains which would perpetuate the increase in assets per employee.

Diminishing marginal returns afflict even the financial industry. It is necessary to increase assets per employee but it is not sufficient. In order to generate high levels of pay and bonuses returns on equity capital need to be maintained, grown and maximized. This is the principal agent contract. Shareholders will only tolerate high payouts if the custodians of their business are generating sufficient returns on their equity capital. As the size of the system's combined balance sheet grew, too much money was chasing too few opportunities. Returns on assets understandably fell or moderated leading managers to increase leverage in order to maintain returns on equity. The principal agent compact is incomplete in that it fails to address the prospect of losses. An agent is paid a basic salary to cover living expenses, or so the theory goes, and paid a share of profits. In order to retain talent and to align interests a portion of the years bonus is retained for a number of years usually 2 to 3 years. Unfortunately there is usually no clawback so contracts do not prescribe

for losses. Traders who lose a sufficient amount of money are either fired or incentivized to leave the firm rather than work for free. Since contracts provide agents with upside but no downside they resemble call options and option pricing theory advises that the value of an option is highly dependent on the volatility of the underlying instrument or asset. Agents are therefore incentivized to increase the riskiness of their portfolios in order to maximize the value of the option which they hold.

In the wake of each crisis come regulations to prevent recurrence. Glass Steagall which was enacted during the Great Depression was repealed during the Clinton administration as the world came to accept the Great Moderation. The 2008 financial crisis has led to reconsideration and the introduction of Dodd-Frank with similar content and intent. Basel 3 is another piece of regulation intended to stabilize the banking system, among a slew of other regulations. Each new regulation comes with its own complications and unintended consequences. Basel for example, starves the economy of credit while governments are trying to reflate their flagging economies. Gradually, the shadow banking industry is expected to rise again as mainstream banks are hobbled by regulation. Talent can be expected to bifurcate to the safest banks and to the unregulated shadow banking institutions, at least until a clearer future emerges.