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Innovation and shirking in financial markets

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Innovation is usually viewed by economists as a productivity-enhancing force, powering economic growth in modern capitalist societies.

Governments and companies talk of fostering a "culture of innovation" in which new ideas and new technologies can flourish. Innovation is no less sought after in the investment industry, where new products are assumed to help consumers meet their individual financial needs. This optimistic view ignores the damage that can be done by innovations, especially in the financial sector, where agency issues create the potential for negligence and rent extraction.

In a model put forward by Biais, Rochet and Woolley[1], when a financial innovation enters the market, this initially creates high rewards for the innovator. These rewards attract imitators offering variants on the original product to meet the nascent demand from investors. Over time, and in the absence of any major failure of the new product, confidence in its robustness and value to society grows. However, agency issues, such as information asymmetry and misaligned incentives, enable some product providers to offer versions of the innovation that introduce unseen or unintended risks. These risks might be in some sense unforeseeable, but they could also arise due to inadequate or negligent risk management on the part of less diligent or capable providers. This failure to carefully evaluate and manage the risks associated with a new product – described as "shirking" by Biais, Rochet and Woolley – is partly caused by the opacity and complexity of financial products which make it difficult for investors to assess the relative competence of different providers.

The impact of an innovation at the macro level will be driven, in part, by the performance of the new products and the extent to which they are tested by challenging market conditions. Some innovations will be exposed to a stress event relatively early on in their lives, reducing the scale of imitation and limiting any potential damage. But others may experience relatively benign conditions over many years, leading to substantial growth in the innovative sector and a relaxation of risk management efforts. The natural end point of this process is a potentially catastrophic build-up of risk that is not widely appreciated and therefore cannot be managed by investors or policymakers.

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The Biais-Rochet-Woolley model helps explain the process by which the rapid growth of securitisation in the US housing market, together with the rise of new financial instruments such as collateralized debt obligations (CDOs) and credit default swaps, provided the raw materials for the sub-prime mortgage crisis of 2007-08.

Investor interest in various forms of structured credit in the early 2000s encouraged banks and other intermediaries to create a steady supply of assets to meet the growing demand. Instead of carefully scrutinising the credit quality of the underlying assets themselves, many investors and product providers

[1] Biais, Bruno, Jean-Charles Rochet and Paul Woolley, 2015, Dynamics of Innovation and Risk, Review of Financial Studies 28 (5): 1353-1380

were happy to rely on assessments made by credit rating agencies – a clear manifestation of shirking. This absence of proper risk management created an environment in which mortgage originators and banks could structure complex and opaque products whose risk profile was widely misunderstood. The passage of time only increased investor confidence in the new products, leading to complacency and widespread exposure. When the US housing bubble eventually burst, the resulting crisis was global in nature and imposed substantial costs on society in the form of bank bailouts, unemployment and economic contraction.

The embrace of innovation

The Thatcher and Reagan administrations of the 1980s ushered in a multi-decade period of financial market deregulation and free market thinking which encouraged investors and policymakers to treat financial innovations as an unalloyed good.

This was particularly evident in the run-up to the financial crisis, when in 2005 at a meeting of central bankers, Raghuram Rajan (then Chief Economist at the IMF) was described by Larry Summers as a Luddite for raising the question of whether financial innovations might have introduced new sources of risk. Indeed, the academic community has long provided the intellectual support for a pro-innovation policy bias, with mainstream finance theory viewing the existence of demand for any new product as a sign that it must be welfare-enhancing.

The experience of the financial crisis clearly vindicated concerns such as those expressed by Raghuram Rajan and has led to some soul-searching within the economics profession. However, the generally positive attitude towards financial market innovation survived intact. In contrast, the Biais-Rochet-Woolley model suggests that a healthier perspective on financial innovations would be to approach them with a degree of caution, reflecting the potential for shirking and hidden risks.

Technological innovations in any field are subject to risk, but financial innovations are particularly prone to abuse for two reasons.

First, the uncertainty and complexity associated with financial products means that it is difficult to know for some time whether a given investment is performing as expected. This lag impedes a natural feedback loop that helps protect consumers of non-financial products. For example, if a new model of car proves to be very unreliable, this will be quickly identified by consumers and the information shared widely. This acts as a deterrent against sloppy craftsmanship given the relatively short time period in which disappointing results become apparent and impact business performance. Any such feedback effect in financial markets is inevitably much longer.

Second, asymmetric incentive structures are ubiquitous in the finance sector, arising due to fee and compensation arrangements that provide high positive rewards to the supplier on the upside, with little or no penalty on the downside. Asymmetric incentives are problematic since they create a situation in which the more knowledgeable party (the product provider) has little or no skin in the game. As a result, providers can reap large rewards without having to share in the downside if a product ultimately fails. Combined with the lag effect described above, asymmetric incentives create a large opportunity for rent extraction by incompetent or negligent providers.

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A more thoughtful approach to innovation

Notwithstanding the argument above, innovations in the finance sector can clearly have hugely positive effects for society. For example, wider access to credit and banking services (often facilitated by modern technology), low cost passive investment products, and private equity capital to support start-ups have all offered material benefits to savers and the wider economy. However, investors and policymakers could benefit from a more cautious and thoughtful

approach to financial innovation than the default position which assumes that all innovation is welfare-enhancing. In particular, the social costs and benefits of any financial innovation should be actively considered before embracing it with open arms.

In part this task will fall to regulators and policymakers. But asset owners also play an important role in scrutinising innovations, since their actions determine the extent to which new products or strategies are successful. In approaching this task, we suggest the following principles as a starting point for investors.

1. **Complexity carries a cost.** Innovations that bring complexity and opacity are often described euphemistically as "more sophisticated". However, such approaches tend to be harder for all parties to understand. This is not to say that complexity should be avoided entirely; rather that investors need to be clear on the expected reward from any additional complexity, while also viewing it as a source of risk. In general, simplicity is a virtue and sophistication a vice where financial products are concerned.

2. **Accept the limits of due diligence.** A rigorous due diligence approach can help mitigate the risks associated with financial innovations. However, any analysis is inevitably constrained by our present understanding of markets. The emergence of new product-types will always change market dynamics in ways that are difficult, if not impossible, to predict. As a result, investors in new products will often be exposed to hidden or unforeseeable risks. The most obvious protection against such risks is to allocate less to new product-types than to those that have been time-tested.

3. **Be wary of fads and fashions.** Popular innovations are in danger of running into various forms of shirking, whereby new entrants are tempted to launch products without appropriate risk management. Extra caution is therefore warranted in situations where innovations are attracting widespread investor interest and excitement. Such a stance has the added benefit of avoiding crowded asset classes or strategy types, where the returns available are likely to be reduced by the weight of assets pursuing the same approach.

4. **An early-mover advantage often exists.** While the points above argue for a considered approach to financial innovations, this need not rule out backing new ideas or strategies that, after detailed investigation, are believed to offer an attractive risk-return trade-off. Indeed, there is often an advantage to acting *before* a new approach becomes widely popular – the early-mover advantage – exemplified by the early moves into both hedge funds and private equity by the Yale endowment under David Swenson. Furthermore, the early-mover advantage often turns into a late-mover disadvantage, reflecting the re-pricing of undervalued assets or the elevated risks associated with crowded trades.

Over the last decade a range of technology-related innovations have emerged as important parts of the asset management ecosystem. ETFs, high frequency traders, factor strategies and robo-advisors (to name a few) have been enthusiastically embraced by segments of the financial community. This is not to say that any one of these developments will lead to a future crisis or to deny that they offer some benefits to investors. However, we can be sure that they have each, to varying degrees, changed the dynamics of financial markets and introduced new risks that we do not yet fully understand.

Innovation in financial markets will not and should not stop. However, a more cautious perspective might help investors and policymakers better manage the risks that inevitably accompany financial innovations and contribute to more stable and efficient markets.

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