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Innovation or imitation: Which boosts growth in recession?

Innovation or imitation which leads to faster growth? Innovation – introducing products or services which are new to the market – may yield first mover advantages. Imitation – introducing new to the firm but not new to the market products or services is a safer, more conservative strategy. Drawing on data from UK innovation surveys, Stephen Roper, Director of ERC identifies some key trends. The proportion of innovative firms in the UK has grown rapidly in recent years, with the recession having a significant negative effect. Innovative firms grew more than twice as fast as imitators during the recession, however, suggesting innovation is a better growth strategy than imitation in difficult market conditions.

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We hear a lot about 'innovation' and its importance for the success of businesses and industries. Innovation is costly and uncertain, however, and in some situations the evidence suggests that imitation may be a better strategy. But what do we mean by innovation and imitation? Both involve the introduction of new products or services to the market[1]. A new product or service might be said to be an innovation, however, only if it is wholly new to the market. Innovations will be based either on new knowledge – perhaps a new scientific discovery – (e.g. Velcro or Post-it notes) – or a new application of old knowledge (e.g. some homeopathic medicines, micro-brewing). By contrast imitations are new products or services, which are new to the firm but now new to the market. Imitation may be of very different types, of course, ranging from licensed or unlicensed (counterfeit) copying of a product or service, through mimic products which copy some or all of the features of an innovative product or service to products which emulate an existing product but may actually be a better product or service than the established market leader.[2]

Innovation and imitation each carry with them very different risks and rewards. Innovation may create first- mover advantages for the innovating firm. These may lead to higher returns from a desirable and unique product or service but may also have other advantages in terms of helping the first mover to learn rapidly about the markets in which the firm is operating and build brand loyalty among customers. A key issue for the innovators in any market place, however, is their ability to sustain their position of market leadership. In some sectors – biotechnology or engineering – this may involve formal strategies such as patenting to protect intellectual property; in other sectors more strategic approaches may be adopted such as frequent changes or upgrades to product/service design. Aggressive pricing also provides a way in which market leaders may protect any first mover advantages.

For imitators on the other hand the potential for 'second mover advantages' are also evident. Perhaps the key advantage for such imitators is that the market leader has already taken much of the uncertainty out of the initial product or service introduction. On the production side this may mean that the imitator can copy, emulate or reverse engineer the product design or service delivery of an innovator. On the demand side the imitator can learn from the innovator about consumers' appetite for a particular product or service and what they are prepared to pay. The imitator's problem however is not always simple as they try to find market share in a market in which there is already at least one player.[3]

Second mover advantages can certainly occur at a firm level and there is some evidence – particularly in less dynamic markets – that imitation may be a more profitable strategy than innovation.[4] At a national level too second mover advantages may also be important allowing later entrants to a market to observe the strategies of first movers. Some years ago, for example, Professor Jim Love from Aston Business School and I worked with the Scottish government on potential development strategies for the offshore wind industry. What had become clear by that point was that the first-movers into the offshore market had focussed on shallow waters but there was a clear market gap in the deep water area. This market opportunity only became clear as the market matured – and the strategies of the established players – became clearer. Even better the opportunity for deep water turbines was consistent with existing Scottish expertise derived from oil and gas exploration in the North Sea.

Imitation – second-mover - strategies may provide individual firms with a less risky option than innovation. At an industry and social level, however, imitation can have either positive or negative effects. On the positive side imitation may help to maximise the social and consumer benefits of the original innovation by making products or services available to more consumers. Imitation may also have negative effects, however, by reducing the variety of products or services within a market and increasing the collective vulnerability to external competition.[5]

Imitation may also be a stepping stone towards innovation as firms build innovative capabilities. This process is perhaps clearest in developing economies where firms have steadily developed their R&D and creative competencies. The development of the Indian pharmaceutical sector illustrates this process of capability building particularly well.[6] Here, a protectionist regime in the post-1970 period facilitated the development of firms' imitation capabilities. Liberalisation in mid-1990s then encouraged a move towards today's innovative sector with a number of Indian firms now significant international players. 'The imitative R&D in these firms created important essential basic capabilities and that acted as a basis for innovative R&D … In the case of Indian firms the basic and intermediate innovative capabilities learnt as a result of imitative learning certainly gave these firms a solid base for the development of competence in advanced innovative R&D'.[7]

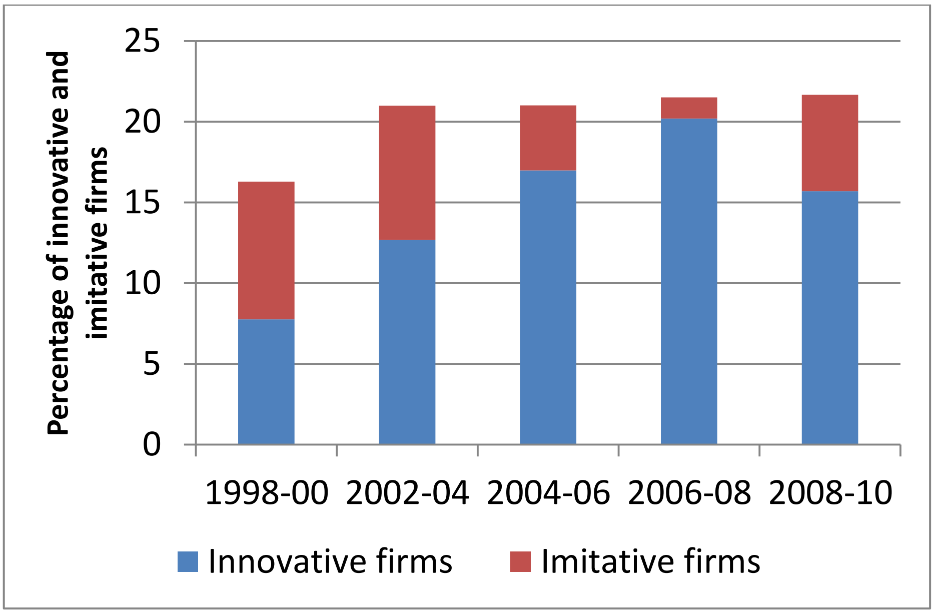
But what about firms in the UK - to what extent are they engaged in innovation or imitation? And, how has this changed in recent years?

Innovation and imitation in the UK

Good information on innovation and imitation by UK firms is available from a series of government surveys called the UK Innovation Survey. Seven of these large-scale surveys have now been undertaken each covering a three-year period. The most recent survey covers firms' innovation activity during 2008-2010. Each UK Innovation Survey is structured and weighted to give results which are representative of UK business and so it is possible to observe trends in innovative and imitative behaviour through time.

First, it is interesting to see how the population of UK businesses breaks down between those engaging in innovation, those engaging in imitation and those making no product or service changes. Innovative firms are defined here as those introducing new to the market products or services during the previous three years (whether or not they also introduced imitative products). Imitative firms are those introducing no new to the market products or services but introducing new products/services but which were imitative (or only new to the firm)[8]. Figure 1 summarises this data based on data from each of the UK Innovation Surveys.

Figure 1: Percentage of UK firms which are innovative and imitative



Sources: Author's analysis of UK Innovation Survey Data. Observations are weighted.

What we see here is a steady increase in the proportion of UK firms undertaking innovation up to the 2006-08 period and a matching decline in the proportion of imitating firms. In fact the proportion of UK firms engaging in innovation more than doubled between 1998-2000 and 2006-08. In other words over this period we see UK businesses focussing increasingly on the potential for first mover advantages in terms of higher returns and market share.

In the recession of 2008-10, however, this pattern is reversed with the proportion of firms engaging in imitation increasing sharply. One possibility is that over this period as the level of uncertainty in the business environment increased firms were seeking more conservative product/service development strategies and therefore adopted an imitative rather than innovative approach to developing new products/services.

Engaging in innovation is all very well but how important are innovative products to UK firms? Figure 2a summarises the average level of innovative sales by innovators, while Figure 2b gives the average levels of imitative sales by imitators. While we see little consistent trend in terms of imitative sales (Figure 2b) there is something of a decline in innovative sales by innovating firms. In other words, while these firms are continuing to introduce new to the market products, these products are generating a smaller proportion of sales in more recent periods. This amounts to a weakening in first mover advantage which is consistent with the increasing intensity of global competition and with evidence from some other European economies.

Figure 2a: Innovative sales by innovative firms

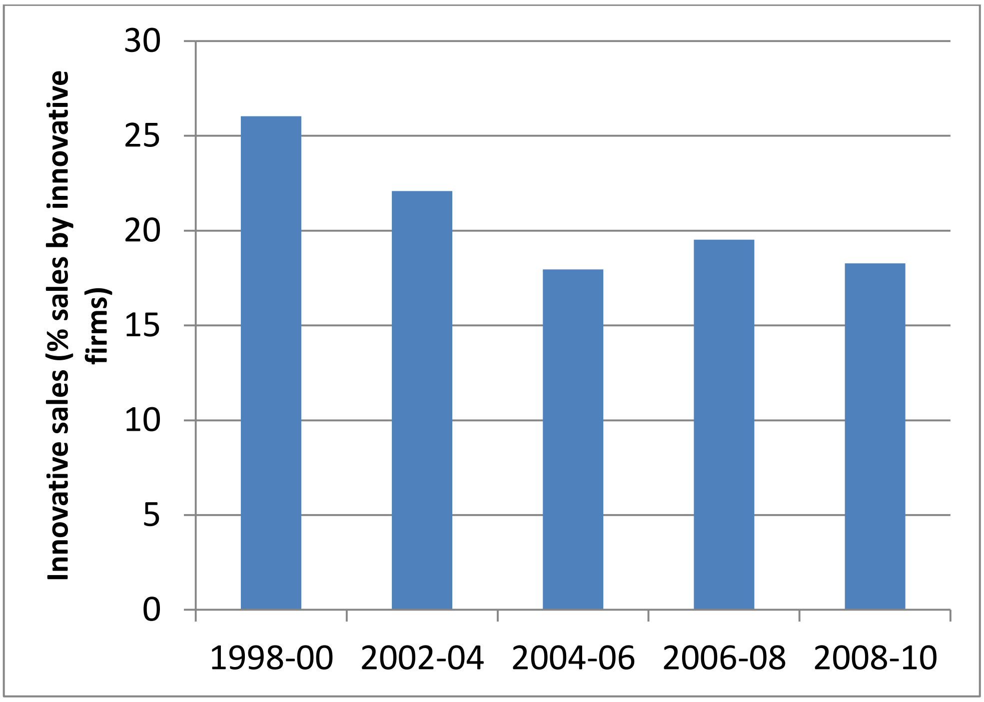
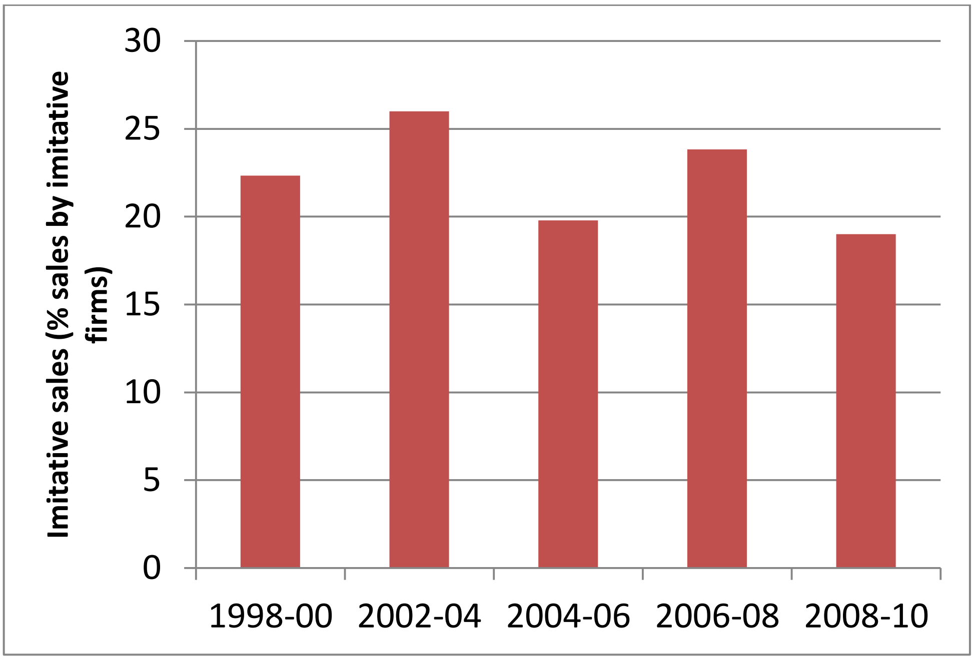


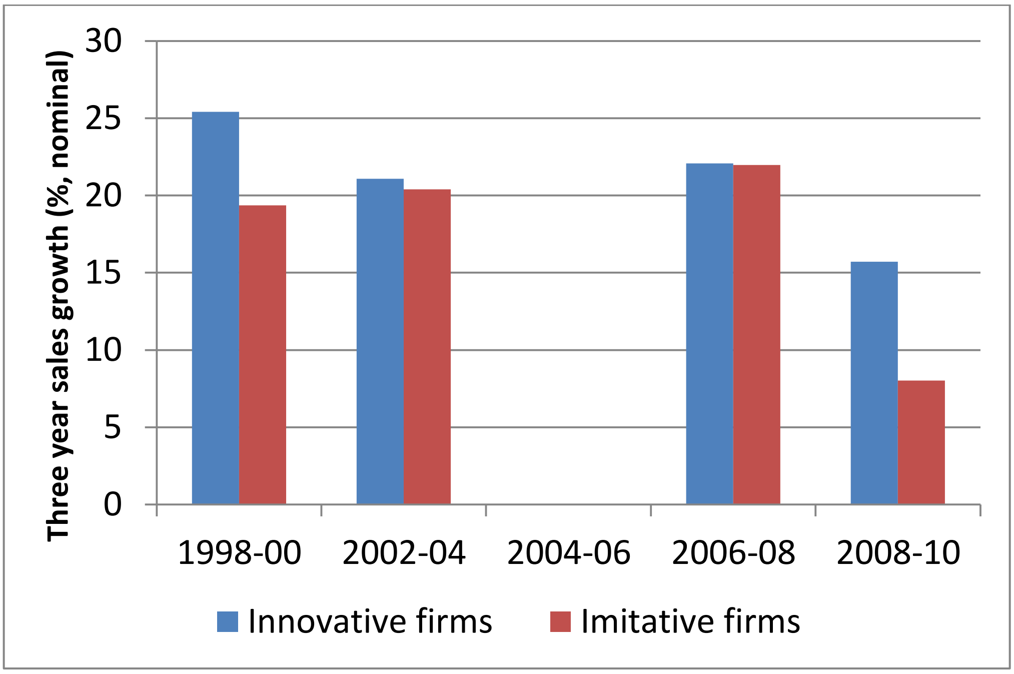
Figure 2b: Imitative sales by imitative firms



Sources: Author's analysis of UK Innovation Survey Data. Observations are weighted.

Calibrating the performance benefits of innovation and imitation is difficult but, as indicated earlier, introducing innovative products/services may give firms first mover advantages leading to better performance. In the UK Innovation Survey performance data is limited but sales growth can be calculated and Figure 3 gives the average (mean) growth of the groups of innovative and imitative firms. Most striking here is the contrast between the more buoyant 2002-04 and 2006-08 periods, during which the growth returns to innovation and imitation are similar, and the recession period 2008-10 during which innovators grew nearly twice as fast as imitators. It appears therefore that innovation pays, particularly when market conditions get tougher.

Figure 3: Growth in imitative and innovating firms



Sources: Author's analysis of UK Innovation Survey Data. Observations are weighted.

Future ERC research will investigate the drivers and barriers of innovation and imitation in UK SMEs. A key focus will be the extent to which new product and service outcomes are shaped by influences from within and outwith the firm. For example, how does the strategic ambition of SMEs influence their new product/service strategy? How does this affect firms' investments in R&D and innovation partnering?

Notes:

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[1] Innovation can also occur of course in other areas of business activity such as strategy, marketing and business models. Here, our focus is primarily on products and services, however.

[2] Ulhoi, J.P. 2012. Modes and orders of market entry: revisiting innovation and imitation strategies. *Technology Analysis & Strategic Management* **24:37-50**.

[3] Ulhoi, J.P. 2012. Op. cit.

[4] Lieberman, M.B. and S. Asaba. 2006. Why do firms imitate each other? *Academy of management review* **31:366-385**.

[5] Lieberman, M.B. and S. Asaba. 2006, op. cit., p. 366-7.

[6] Essentially similar accounts of the development of innovation capabilities as result of imitative learning in other countries. On Korea see Kim, L. 1997. *From imitation to innovation: the dynamics of Korea's technological learning* Boston, MA, Harvard Business Press; on Taiwan, Hobday, M. 1995. *Innovation in East Asia: The Challenge to Japan*. Aldershot, UK, Edward Elgar: on China Lim, D.J. and D.F. Kocaoglu. 2011. *China - Can It Move from Imitation to Innovation?* New York: IEEE ; and, on Brazil Dorion, E.; E.T. Pavoni; and L.R. Chalela. 2008. *Innovation or Imitation: A Comparative Study on Common Behavior of Brazilian Entrepreneurs*. Haidian District: Intellectual Property Publ House.

[7] Kale, D. and S. Little. 2007. From imitation to innovation: The evolution of R& D capabilities and learning processes in the Indian pharmaceutical industry. *Technology Analysis & Strategic Management* **19:589-609**. p. 609.

[8] Innovative firms may also have imitative products/services too of course, with hybrid strategies combining some innovative products/services and imitative products/services recommended by some researchers as providing a particularly useful strategic approach.