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Spin-offs in the Bio-Pharmaceutical Industry

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Spin-offs in the Bio-Pharmaceutical Industry


What is fascinating to note here is that a domestic Indian firm has gone ahead and acquired another domestic Indian firm unlike in previous mergers (Sanofi-Shantha, Abbott-Piramal or Daiichi-Ranbaxy) within the sector. But this acquisition also raises the dual question of whether there will be lesser new firm formation within the industry going forward. Should that be the case, it could have an impact on competitive conditions and loss of employment apart from related demand-side effects, in terms of prices, choice-sets, and quality of medicines-globally and locally. Yet, this is an issue for which one would have to ideally turn to historical data. However, unlike in some Scandinavian and Latin American countries (where employer-employee datasets enable careful tracking of spin-off formation), Indian laws do not facilitate the systematic creation of similar datasets and all that exists are anecdotal stories aplenty. Notwithstanding this limitation, this article tries to shed light on this question using some alternative novel data in the absence of the first-best source.

After extensive conversations with industry experts over the years, we selected a sample for this article that comprised of 29 firms in the Indian bio-pharmaceutical industry, for which we analyzed their spin-off formation intensities over the years. The starting sample included 20 domestic parent firms (as can be seen in Figure 1), two of who were public research centers and two were public sector manufacturing units. Three of these domestic firms were located in Gujarat, four in Karnataka, three in Andhra Pradesh, six in Maharashtra, and the remaining were from the rest of the country. The average age of domestic firms was 42 years, with the youngest in the sample being in business for the last 13 years while the oldest was 106 years old. Among the remaining nine multinational parent entities in our sample, the average age was 41 years; the youngest among them was six years old in its presence in the country while the oldest had been in India for 89 years. We tried to investigate the following questions with this sample (1) What was the rate of spin-off formation from these parent-firms in the industry? (2) How many life-science related spin-offs got formed from these parent firms vis-Ã -vis non-life-science related spin-offs? (3) What were the roles of founders as employees in the previous parent firm sample before they formed the spin-offs? (4) Finally, was there a post-TRIPs effect in rate of spin-off formation from this sample in the Indian bio-pharmaceutical industry?

Our source of understanding of spin-offs came from data retrieved from Linkedin. Linkedin data allowed us to search for all profiles that had the words owner or founder or chief executive officer or chairman and managing director or chairman or managing director or president in the profile of an individual and they were previously working in any of the parent firms in our sample. The approach followed past scholarly work that defines a spin-off if any founding member of a firm comes from a parent firm, done in the context of other economies. For each of the entrepreneurial profiles thus eligible to be in our spun-off sample, we then individually cross-checked if the entrepreneur was indeed spinning-off their organization from a parent firm by parsing through their profile. Arguably this data will not capture firm formation by founders who are not profiled on Linkedin. That said, the data documents some interesting patterns and provides some novel understanding of industry evolution in Indian bio-pharmaceutical sector over the years.

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First, we found that there were some 524 firms that were formed from our parent sample of 29 firms in the Indian bio-pharmaceutical industry. That indicated an average of 18 spin-offs being spawned off by an average parent firm in our sample over time. Some 76 percent or 400 spin-offs were spawned from domestic parents while the remaining 124 came from the multinational parents in our sample. Domestic parents spawning 20 firms on an average clearly dominated multinational parents (spawning 13 firms on an average) over the years in the intensity of new firm formation. Also worth noting here would be the number of firms that were related to the life-science sectors vis-Ã -vis those unrelated to the life-science sector. Some 41 percent of the overall 524 firms spin-offs were related to the life-science sector (218 out of 524) whereas the remaining were non-life-science related spin-offs (306 out of 524). 79 percent of the life-science related spin-offs (172 out of 218) came from domestic parents in our sample, the remaining coming from multinational parents. Worth mentioning here is also that India signed the WTO-TRIPs (the Trade Related Intellectual Property Agreement as mandated by the World Trade Organization) agreement in late 1994 and implemented a stronger product patent recognizing intellectual property regime (IPR) in 2005. Out of the 218 life-science related spin-offs that we could track in our sample, a chunk, 71 percent (156 out of 218) were formed in the post-TRIPs era between 2005 and 2012, the latest year of incorporation for spin-offs in our sample. 48 of the 218 life-science spin-offs were formed between 1995 and 2004 whereas the remaining were formed pre-1995.

Another related question that arises in trying to understand spin-off formation in the industry is that of roles in which the founders were working in the parent firms before they formed new firms in the industry. For multinational parents, the key roles that we identified were in general management, sales and marketing, operations and R&D. 35 out of the 124 spin-offs from multinational parents came from the first, 36 from the second category of roles, 28 from the third and 21 from the last. Turning to domestic parents, we find that out of 400 spin-offs, 138 founders had a role in general management, 109 in sales and marketing, 83 were in R&D related roles and 53 were in operations before they went entrepreneurial.
It would be also useful here to document key parenting organizations in the context of our study. From our multinational cohort of parents historically present in India, Merck, GlaxoSmithKline, Novartis, Monsanto, Abbott and Astrazeneca were the entities which witnessed the most prolific spin-off formation over the years. Among domestic parents, the most prolific in spawning spin-offs were Ranbaxy, Cipla, Dr Reddy's Laboratories, Lupin Ltd., and Nicholas Piramal among others. It was surprising to note that the public sector research laboratories were not parenting as many spin-offs, though this could be an artifact of using Linkedin as a source of our data. A similar argument could be made with regard to the historical absence of spin-offs from public sector parents Hindustan Antibiotics and Indian Drugs and Pharmaceuticals Ltd for example. Perhaps data either from these organizations themselves or from the Department of Pharmaceuticals or Registrar of Companies in India over the years would provide more insights.
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These numbers and facts assume particular importance today as the industry consolidates as was evidenced with the recent Sun Pharmaceuticals and Ranbaxy merger. Carnegie Mellon economist Steve Klepper documents in a 2009 paper, how historical industry clusters like semiconductor producers in Silicon Valley or automobile producers in Detroit grew through a series of first, second and n-th generation spin-offs driving industry evolution. While this study is only a starting point towards understanding spin-off formation historically in the Indian bio-pharmaceutical industry, much more is required to understand

their performance, the reasons driving their formation and survival (disagreements with leadership team or otherwise), thereby guiding public policy interventions. For example, did founders in the spun-off firms in the Indian bio-pharmaceutical industry use knowledge they learned from their parents or were there spillovers of knowledge? Does that impact corporate strategies related to intrapreneurial culture within an Indian bio-pharmaceutical firm? What has been the role of leadership in firms in impacting spin-off formation? Could spin-off formation be related to agglomeration economies in certain regions of India over others? What role here is that of regulatory changes like for example non-compete laws and trade secrets?

Ranbaxy in our data was clearly a prolific spin-off generator over the years and so was Sun Pharmaceuticals. Some 54 or 25 percent of the overall 218 life-science spin-offs in our sample were born out of Ranbaxy and Sun Pharmaceuticals generated 7 life-science spin-offs. Might their merger result in stricter within-firm policies or change of culture that could have an impact on entrepreneurialism engendered by these organizations over the years? The Competition Commission of India is currently evaluating the Sun Pharmaceutical and Ranbaxy merger in terms of their welfare effects; usual methods for such policy evaluation of the anti-competitive effects of mergers include a study of their demand side impact and an investigation of drug-prices. Perhaps a careful understanding would also involve a supply-side analysis especially to holistically guide such evaluation. Clearly, the merger opens up more questions than answers and public policy experts would do well to take notice.

Beyond recent industry-related events, the Indian bio-pharmaceutical industry has also been a historical test-bed of entrepreneurial activism. Since India went into a process patent regime in the 1970s a spate of early generation entrepreneurs, earmarked by the entry of firms like Biocon, Sun Pharmaceuticals, Dr Reddy's Laboratories, Lupin, Glenmark among others created a vibrant generics ecosystem. Today, the industry is benefiting from their spinning-off and parenting effects thus generating the unintended consequences of a policy that the government had initiated in the 70s and 80s.

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