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# Drugs and the Importance of Asset Life

In stock investing, a credible estimate of intrinsic value cannot be obtained without due consideration of the duration of the economic life of a company's key assets. It can be argued that errors made in this arena are amongst the most costly, and this author speaks from experience. Deliberations here are challenging and investors should not usually expect to calculate point estimates of economic life. Nonetheless investors who take such matters lightly do so at their peril. Whilst value investors typically seek out low multiples of earnings, free cash flow or book value, these can be misleading. One reason is that the relevance of the "E" or the "FCF" or the "B" depends on how long the assets remain productive and how much it costs to replace them.

For the purposes of the stock investor, an asset is any resource possessed by a company, which will produce an income at some point in the future. Most assets expire, that is they will cease to be income-producing, if not maintained. Tangible assets usually deteriorate in a physical sense, but this is not the only way in which they degrade. Like intangible assets, tangible assets can degrade in "invisible" ways. These principally relate to changes in the levels of supply and demand which can impair the income producing capacity of the assets. A building won't crumble overnight but if circumstances change so that the income producing capacity of the building disappears, perhaps it may as well have crumbled. Individuals who purchased properties in certain estates across Ireland in recent years will understand this only too well.

Don't confuse the economic life referred to in this discussion with that estimated in the annual accounts of public companies. The assets investors should be concerned with are frequently not capitalised on the Balance Sheet (perhaps because they are intangible assets fostered internally) or are amortised over artificial lifespans. It is crucial that investors do their own thinking when it comes to this important subject.

Let's examine this subject further by looking at the Drug industry for reference. The lifespan of the assets of drug companies are sometimes shorter than assumed, and thus the sector may be prone to producing value-traps. Put another way, many drug companies tend not to possess long-duration assets and are prone to encounter difficulty in replacing depreciating assets on economically attractive terms. Companies in this predicament face a legitimate threat of declining earnings power. In contrast, companies that possess long-duration assets and those that can replace assets on attractive terms are better positioned and are much easier to analyse. Investors need to consider these risks in the context of the low valuation multiples that have appeared frequently in the drug sector in recent years.

*Replacing Capital Stock: The Challenge for Drug Companies*

Drug companies vary in all sorts of ways, but they share the core characteristic: they invest in R&D to produce drugs that can be sold for a profit, thereby enabling further investment and further profits. Consequently the assets of greatest concern for investors are the marketed drugs and the accompanying patents, as well as other intellectual capital that will hopefully enable development of more drugs in the future.

In the US drug patents extend to twenty years in duration. However as patents are usually filed years in advance of product approval, the "effective" patent life may not be much more than ten years typically. After patent expiry, many drugs face virtually complete profit erosion in a matter of months. However the impact of patent expiration is determined by the nature of the product and the legal and distribution structures within the market in question.

The US drug market is by far the largest in the world, accounting for over 50% of the profits of many international drug companies. The US generic drug market is probably the most developed in the world with generics accounting for around 80% of total drug volumes. In the US most drugs, tablets in particular, face rapid profit elimination after patent expiry. US legislators are continuing efforts to counteract measures implemented by drug companies to shelter drug profits after patent expiry. Other governments across the world are stepping up attempts to foster greater generic competition. Even in Japan, where opposition to generic drug usage has traditionally been deep-rooted, generic drug penetration is rising and now approaches 30% of total volume. Other efforts have extended into new, previously sheltered niches, such as biologics and biotechnology, with concerted efforts in both the US and Europe to develop a "Biosimilar", or Generic Biotech industry. This is a dramatic change since not so long ago biotech-copies seemed like fantasy, due to product complexity. Although recently issued FDA guidelines on Biosimilar development suggest that there will be no smooth sailing for wannabe competitors, technology and regulation are likely to persist in making inroads on biotechnology monopolies. It is apparent that the downward pressure on the economic life of drugs is unrelenting. This would be less troubling if R&D productivity remained robust, but that is not the case.

All businesses need to reinvest in capital stock to remain viable. The reinvestment requirement varies greatly from business to business. In addition to capital expenditure, drug companies reinvest through marketing, but in particular through R&D. The drug sector has remained very cash generative and management teams have continued to reinvest heavily in R&D, with industry-wide levels of R&D having grown as a percentage of sales over the past ten years. Whilst R&D is "expensed" rather than "capitalised", it is by far the most important means of reinvestment for these companies. What is troubling is that the rate of return on this reinvestment seems to have been dwindling for some time. According to a report from McKinsey (*"The Road to Positive R&D Returns*", *Feb 2010*), recent R&D spend on oral drugs has been producing IRRs of just 7.5%; below the cost of capital. This message is supported by a 2010 paper from Bernstein Research which suggests that the inflation-adjusted cost of finding a new drug entity has increased by over 100-fold in the past sixty years. Many industry insiders also agree that returns on drug R&D investment have been declining for many years. There are probably multiple reasons for this, including

significantly increased regulation, greater competition and high hurdles from existing standards of care.

Why does all of this matter? If returns on reinvestment in any business are declining, owners' earnings will inevitably shrink. In the case of drug companies, asset lives are sometimes shorter than many casual investors assume, because of the significant and growing presence of efficient generic competition and regulatory impositions on drug development. Furthermore output per dollar invested in R&D seems to be shrinking relentlessly, thus the capacity of many of these businesses to replace depreciating assets looks to be degrading. Thus the long-term earnings power may be degrading too.

Even if an investor is aware of factors that may impinge on asset lives and returns on reinvestment, detecting their effects is often much more difficult than one might expect. This is because these processes are often slow-moving; assets often deplete and are replenished over many years. Furthermore, acquisitions, buybacks, charges and temporary effects such as cost-cutting and price increases may obscure an underlying deterioration for a prolonged period.

As indicated, not all companies grapple with such challenges. About ten years ago, this author researched and considered an investment in Danish drug company **Novo Nordisk**. Regrettably, the investment proposition was declined. Since then, Novo Nordisk has established itself as the world's preeminent diabetes drug specialist. Its focused investment in its core research has not only preserved, but has increased enormously its intellectual capital base. This is evidenced by its returns on book equity, which have increased to circa 50%. Its track record is something to behold. Comments from the management of **Glaxosmithkline** and **Sanofi** suggest that they believe their Vaccines businesses may possess similar traits to Novo's. Time will tell – and besides these businesses will likely remain peripheral for the companies. Success stories such as that of Novo Nordisk are rare and many peer companies will probably face a relentless battle to preserve real earnings power.

*How Medical Device Companies Differ*

Let us briefly contrast the predicament of the drug industry with that of an adjacent industry, Medical Devices. A typical Medical Device company might sell a non-pharmaceutical product which is used to treat a patient. *Prime facie*, these companies possess similar investment characteristics to those of drug companies and face many of the same challenges. However there is one potentially material difference. Medical devices, unlike many drugs, are not produced to a readily ascertainable chemical formula. Consequently it is typically difficult for a would-be generic competitor to claim equivalence with an original product. This is crucial; the generic drugs industry thrives because manufacturers can claim equivalence with original products. This negates the requirement for generic companies to invest in either expensive clinical trials or an extensive sales force. As equivalence is generally not possible to prove, there is essentially no organised generic industry competing with medical device companies. This means that original product asset lives tend to be longer in duration; i.e. successful medical device products can often produce increased cash flow long after patent expiry, which is not usually the case for traditional

drugs. Additionally, for a number of reasons, R&D costs are typically much lower than for drug companies and new product development has tended to be more incremental (lower risk) than revolutionary (high risk). These factors likely help to lower the cost of reinvestment spend for medical device companies relative to drug companies.

**Becton Dickinson** is a model for how fruitful these characteristics can prove to be. Becton has proven enormously successful partly through a highly successful focus on achieving incremental improvements on relatively low-tech products such as syringes. Despite little or no patent protection, Becton's efficiency, reliability and scale have thus far helped to shelter its growing profit stream from new rivals. Time may demonstrate that the earnings power of medical device companies such as Becton is more robust than that of drug companies, because assets deplete at a slower rate and are perhaps easier to replace than for drug companies.

Businesses and the conditions they must operate in are constantly *evolving*, whereas traditional valuation metrics used to value them are *static*. If the company's assets deteriorate faster than expected or prove more costly to replenish than anticipated, a low valuation multiple could easily have been a trap.

Here we have highlighted the case of the drug industry where various developments present a threat to long-term earnings power. It appears that at least some of the many commentators to be heard recommending drug stocks in recent years, whilst aware of pipeline challenges, might not adequately appreciate the potential long-term effects of some of the issues we have examined.

Clearly, we are not recommending any course of investment action for the drug industry or any other industry for that matter. The discussion presented here relates to just one element of an investment case, albeit an important one (i.e. the cost of sustaining productive assets). Investors should always consider an investment case fully before casting judgement on its merits. In doing this it is crucial for investors to contemplate thoroughly the cost incurred by a business to sustain its productive assets. This usually requires much thought and research as economic conditions are fluid and vary greatly from business to business.

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