

## Pharmaceutical Royalties in Licensing Deals: No Place for the 25% Rule of Thumb

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### Abstract

The 25% rule of thumb is often quoted in the context of licensing royalty rates and in particular when deriving an appropriate rate of income due to a licensor for an innovative intellectual property asset.

We have set out to conduct an in-depth analysis of historic market data from the pharmaceutical industry going back over ten years to check on the validity of this concept and found little if any evidence of its use, appropriateness or relevance. An abundance of anecdotal references and attempts can be found to make deal making data fit this incongruous notion, and which does not have a sufficiently robust foundation to make its utility appropriate in the pharmaceutical and biotechnology sector.

Our conclusion shows that this rule has no suitable place in the arsenal of licensing executives.

### Introduction

What is the right royalty rate for a pharmaceutical product? This is one of the most frequently posed questions in the licensing space where buyers and sellers of assets look to strike the best deals. The reality is that unfortunately there is probably no definitive answer that can be arrived at by a simple calculation or straightforward benchmarking. Royalty is but one component of the total value intrinsic in a product to be licensed. It is misleading to set a prescriptive numerical value in isolation that should be assigned to royalties since value derived by a licensor (and a licensee for that matter) is a function of unique factors such as those relating to licence deal structure, strategic needs and negotiation skills. Yet this is what companies inexperienced in deal making often do.

### What is the 25% rule of thumb?

The 25% rule states that the licensee should pay a royalty equivalent to 25% of the profit gained by employment of the IP licensed. But in the Pharmaceutical industry exactly what constitutes the 'raw idea'? Is it at the approval of patent application? Is it at the achievement of proof of concept through human clinical trials? Is it perhaps at achievement of regulatory approval to allow commercialisation, i.e. proof of a marketable asset? We will examine each of these stages of development for pharmaceuticals to see if we can detect a 25% rule playing albeit a circumstantial role in the royalties therein.

But let us step back a little and look at the origins of this supposedly heuristic measure. Many attribute the rule of thumb to Robert Goldscheider's observation originating in the mid 20<sup>th</sup> century<sup>1</sup>, that 25% of the licensee's profits was being paid out as a '5% of sales' royalty, based on his analysis of one licensor (a Swiss subsidiary of a US technology company, Philadelphia Storage Battery Company) with eighteen exclusive territory licensees. Would analysis of a different product type in a different decade covering a different territory have generated a different observation and a different rule of thumb? If this is the only evidence then clearly it lacks the usual rigour one would expect for a sequence of actions to become a "rule". If, however, it is an observation that is reproducible and can be measured, or cannot be disproved then perhaps it holds some scientific integrity and has merit.

### What does the market show?

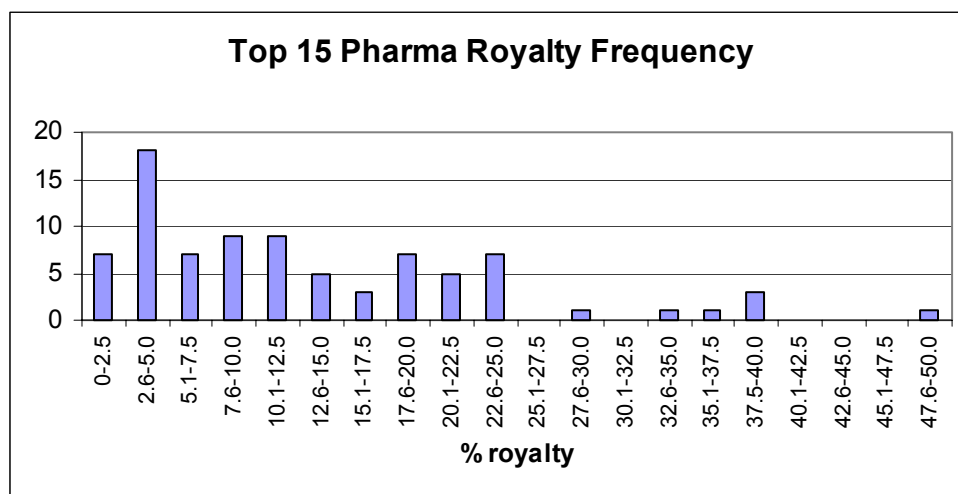
At first glance there appears to be no consistency in the royalty rates applied in the pharmaceutical industry with a greater than tenfold difference between top and bottom rates

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<sup>1</sup> Goldscheider, R. and Marshall, J.T. The Art of Licensing – From the Consultant's Point of View, The Law and Business of Licensing 1980 2 p645

agreed. Add to that the fact that some royalty rates exist well in excess of 25% of sales; the rule of thumb would seem to be of little use in defining a suitable outcome.

Figure 1: Frequency of Royalty Rates Paid by the Top 15 Pharmaceutical companies<sup>2</sup>



On first analysis then the rule appears either erratic or inappropriate in this data set encompassing as it does deals involving products at a variety of different development stages, or 'phases'. Perhaps within the data set lies evidence of the 25% rule hidden within development phase subsets, or dispersed by wide profitability ranges.

**Analysis of pharma operating profits.**

As we stated earlier if it has applicability the 25% rule should be taken as a percentage of profit, best defined we believe as operating profit or EBITDA. We analyzed the 2007 EBITDA for a selection of leading pharmaceutical and biotechnology companies.<sup>3</sup> Based on these figures if the 25% rule of thumb were being used in the industry we would expect to see royalty rates in deals involving these companies to show a range from 7.1-11.8%. The EBITDA derived range is clearly far narrower than the actual rates shown in Figure 1 where we can see a spread of 1.5% - 40% of net sales. But perhaps the clinical development stage is affecting the numbers through a definition of IP completeness or maturity?

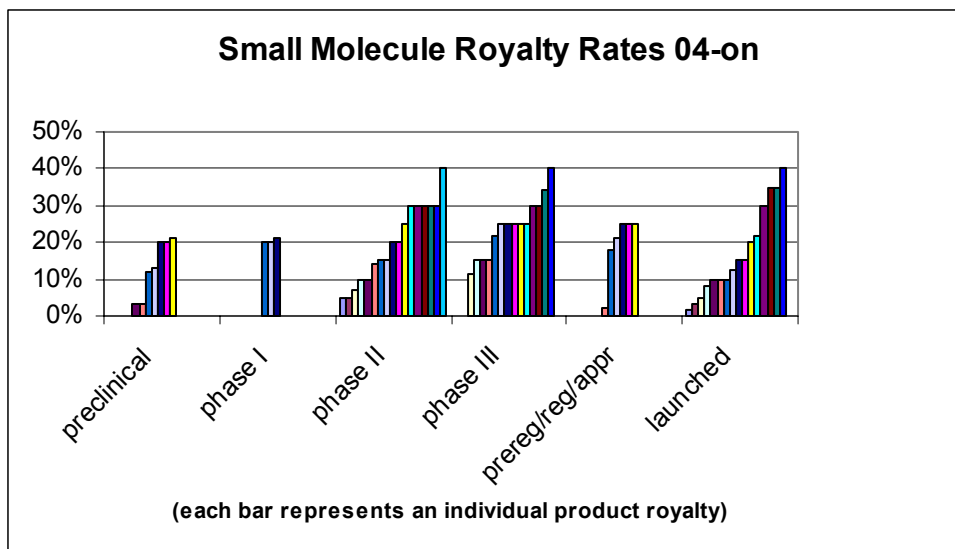
We analysed royalty rates by phase since 2004. Is there a phase for product deals where we see maximum figures of around 12%, with rates below the EBITDA derived range where upfront and milestone payments account for a portion of the royalty's IP value? As shown in Figure 2 no group shows a peak royalty rate at 12%, all groups have deal terms which exceed this figure by a significant margin.

Figure 2: Actual Royalty Rates Paid for Small Molecules 2004 Onwards<sup>4</sup>

<sup>2</sup> Source: PharmaDeals™, PharmaVentures Analysis

<sup>3</sup> Source Evaluate Pharma.

<sup>4</sup> Source: PharmaDeals



The argument over when a products IP qualifies as a 'raw idea' becomes a moot point in the light of this evidence. At no development stage is the maximum agreed royalty rate equivalent to 25% of EBITDA figures.

### Project profitability

Might the definition of the profit base as being EBITDA be erroneous in our attempt to uncover the 25% rule of thumb in the pharmaceutical industry? When assessing the value of individual projects companies use costs that are directly related to the particular drug candidate. In our experience the average profitability of individual drug products across their lifetime typically fall into the 60% - 70% bracket. If the 25% rule applies then the spread of royalties should reach a maximum royalty paid of 15%-17.5% of sales. Our data analysis failed to show a cap at this maximum figure.

### Basic principles of valuation

We have gone to significant lengths to demonstrate why the 25% rule of thumb has no place in licensing in the pharmaceutical industry. If not such a rule, what tools should licensing executives use to determine a fair royalty rate in a given licensing situation?

Value in economic terms is measured as an ability to generate cash. A product with a history of high profitability has no value if it lacks the ability to 'generate' future cash, and profit from that generation. Value then requires a prediction of future cash flow and related costs tempered by risk i.e. probability of relative success or failure of that prediction. Since risk affects value, and value is delivered in licensing deals through royalty streams then it would surely be a strange coincidence to find any statistical norm such as a rule of thumb that adequately expressed this variation in risk.

### The structures of pharmaceutical licensing deals

Royalties are often viewed in isolation from other factors related to intellectual property (IP) licensing. Too much time, and too much energy, is spent searching for meaning within what little royalty evidence exists in the public domain. The truth is more complex than the superficiality of royalty values alone. Without insight into the value of other deal components, such as upfront payments or milestone payments, two seemingly similar royalty percentages may be seen as indicative of a trend or average, when, in reality, they are components of deals which might have vastly dissimilar values and structures aside from this one coincidental component.

### Drivers of the share of value a licensor hopes to get

Does all IP have the same fixed value when compared to the profit it can help to achieve? Strategic need will determine just how far a licensee is willing to go in a negotiation process.

Many of the components of that strategic need are unique to the licensee, intrinsic factors to their business alone which relate to existing expertise and market access, progress or lack of it in pipeline products, impending or current impact from patent expiry, available cash and alternative investment opportunities, underutilisation of capability, complimentary programs to the one under consideration, even internal concern for industry analyst's perception. Extrinsic factors will also affect the potential share of the deal value. Market size and potential, pricing opportunities, unmet clinical need, and the competitive environment all play a part and are modified by the product itself. The strength of that product's IP and the performance offered or suggested will also affect the licensee's willingness to agree deal terms. These then are the drivers that translate into such broad ranges of deal values and royalty rates.

### **Conclusions**

We have clearly shown that the 25% rule of thumb is not reflected in the myriad deals that typify the pharmaceutical licensing arena. We have also highlighted those factors which determine value and confound attempts to put a set mathematical structure around royalty components. We cannot justify the rule based on evidence in the pharmaceutical industry, and we cannot justify the rule based on the principles of valuation and deal making in the pharmaceutical industry.

As for the proposition that the rule 'merely' provides a useful starting point in negotiations we believe the data demonstrates little evidence of this and the principles of valuation discussed here also reject the proposition of 'usefulness' of what is an arbitrary and unsound value. In litigation cases where infringement damages need to be calculated, use of the 25% rule of thumb could be unfair to either party leading to an unsound outcome. The rule was born from overly simplistic and limited analysis and selective retrospective observations in another industry. In a desperate attempt to make the data fit the hypothesis the rule of thumb has been stretched to higher and lower realms totally negating its false hope of usefulness. As far as the pharmaceutical industry is concerned this retrospection does not support its existence. The 25% rule of thumb is not dead; it, in our opinion, never truly existed as a useful tool in the first place.