Defining "Ordinary Course" Through Mathematical Modeling

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Introduction

One of the first documents I read when I was introduced to the bankruptcy world about eleven years ago was a survey conducted by the ABI regarding preference code. What struck me most about the survey was the result of the opportunity for the participants to make one write in comment regarding what they thought was the most troublesome part of the preference bankruptcy code. The following is the result as written in the survey conclusions:

> "By far the most common independent suggestion made by the respondents was to do something to make the ordinary course of business defense[1] more workable in practice. "

So, what does this conclusion mean? I have been involved either directly or indirectly with over a couple thousand preference settlements and have witnessed the interplay and negotiations among attorneys. In these cases, only a handful have gone to trial or have been settled through mediation. With very few exceptions, the rest have been settled through what essentially amounts to an agreement on ordinary course of business ("Ordinary Course") between the parties. Determining Ordinary Course is clearly a process with a number of predictable steps and counter steps. Some of the steps are productive and some, not so much. So, it might be fair to say that "more workable in practice" is just another way to describe the need for process improvement. In this paper I will present an approach to the analysis of baseline payment practice that defines ordinary payment practice based on the results of over one thousand settlements. This methodology can provide a standard that can be applicable over a broad spectrum of preference cases.

Examining the process of determining Ordinary Course

I have worked on and around highly complex industrial processes most of my career. Much of my work has been either being directly involved in process improvement or managing a department of process improvement engineers. One feature of process improvement that I believe is among the most important is the elimination of non-value added work, that is, the elimination of wheel spinning or ruminating over decisions without the requisite standards or facts. Looking closer at this aspect of process improvement, I think helps us identify where we might find opportunity in making Ordinary Course "more workable in practice."

Determining, or identifying, Ordinary Course generally involves an examination of payment practices, business conditions and legal considerations existing in the months or years preceding a bankruptcy. In my opinion, the analysis of this process can be facilitated by viewing it as being divided into three steps. The first step is just the mathematical compilation of the payment and invoice data. This is the rote calculation and presentation of various representative statistics, graphs, tables, spikes in the data, outliers, and an analysis that leads to an unbiased assignment of ordinary or out of the ordinary to the preference payments. The second step involves legal

[1] 547(c)(2)(A)

research and the study of many variables. Such variables include things like the length of the baseline period, unique industry payment characteristics, seasonal variation in sales patterns, the presence of retainers or security, invoicing procedures related to delivery dates, the supply of goods or services, the existence of multiple entities, invoice factoring, and others. The third step of the process is the modification of the unbiased assignment of ordinary payment practice based on relevant issues identified in step two to determine Ordinary Course with respect to the preference period payments.

So where is the opportunity for improvement? I submit that it would in the mathematical presentation of the data. Time has shown that this has not been an easy undertaking. I have seen a variety of presentations and arguments related to what constitutes ordinary payment practice. The shortcomings of all that I have seen is that none offer a workable definition of ordinary, and none provide far reaching standards for ordinary. While a given methodology can be convincing under certain circumstances and depending on the data, the observations or standards cannot be replicated over a variety of cases or circumstances. What is needed is a way to identify and define ordinary.

So, hypothetically speaking, if a characteristic of ordinary payment practice related to invoice payment age could be identified that has universal or at least broad application, would that make the whole of Ordinary Course more workable? Stated differently, would such a methodology improve the process of determining Ordinary Course? I believe that answer is yes under certain conditions. From my experience in process improvement I have found two constraints that must be met to allow lasting improvement. I believe that the improvement must be simple in its construction and intuitive in its operation. The more complex or mysterious the system change, the less it will be used and the more it will be misused.

The concept of simplifying the complex

We have just been viewing a simulation of one of Albert Einstein's famous "Thought Experiments" dealing with how phenomena involving light are viewed. So, what does this have to do with determining Ordinary Course? It shows us that a highly simplified representation of a very complex process can add insight or clarity even when only one key variable is studied. In this thought experiment, Einstein has focused on the key relationship between state of reference and its effect on time. There is no mention of the many other variables that could affect the outcome of this experiment. This is an experiment conducted according to Einstein's Special Theory. What about the effects of acceleration and gravity that were later incorporated in Einstein's General Theory or the effect of electromagnetic forces yet to be incorporated in theories on relativity. So, as a take away from this illustration, I would ask you to consider the idea that clarity can be added to a complex process by studying the influence of a key variable. In this paper, the contribution of one key variable will be studied. That key variable is the collective judgment made regarding the mathematics of Ordinary Course.

Mathematical analysis of Ordinary Course and what does not work

I was first perplexed as to why such an important decision of whether to include or exclude payments from being a preference should be made based on such a subjective term as ordinary. As I examined the intent and application of Ordinary Course, it became clear that this process is very complex and handling that complexity with the term ordinary was a masterful act. It allowed the process of determining Ordinary Course to begin and mature. With respect to only the mathematics of the payment practice, I have seen analyses that attempt to represent some sort of statistical analysis to define the relationship between pre-preference period and preference period payments of a given preference case. On a one to one basis, this is simply not statistically possible for several reasons. Foremost, the term ordinary has no meaning relative to statistics. Also, I have seen the determination of Ordinary Course approached by using the methodology of probability testing. This methodology is not compatible with the goal of defining individual data points as ordinary or out of the ordinary. Probability testing requires a comparison of many data points to many data points as well as the assignment of confidence intervals.

Can common characteristic of ordinary payment practice be identified and measured?

Based on the examination of the root meaning of the term, ordinary, and by observation of the process, I suggest that personal experience and personal interpretation of the data dictate the outcome not some sort of statistical determination. Therefore in order to define ordinary, one must not look at the relationship between baseline and preference period data, but to a far reaching relationship between the baseline data and the actual outcomes of preference settlements. In other words, one must construct a model that links baseline data to the actual settlement data. Considering this formidable task, three questions arise relative to constructing a model. First, "Is there a characteristic of the payment practice that can be measured and quantified?" Second, "Is the influence of the mathematical part of Ordinary Course large enough to be distinguished from the influence of the whole?" And third, "Is it possible that among the thought processes of the many negotiators there is actually common ground?" Do great minds think alike?

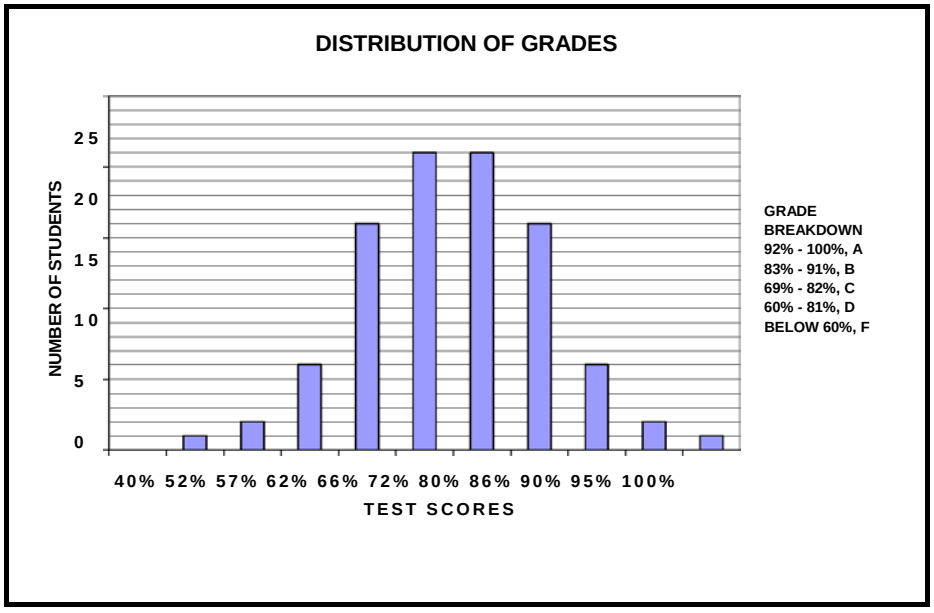
A model is created by constructing some mathematical equation that links a manipulation of variables and constants to actual results. With regard to Ordinary Course, there was no assurance that a statistic existed that would show anything of value. It was clear, though, that some sort of frequency distribution factor would offer the only possible solution. When attempting to characterize a large population of data some consideration of the variation within the population must be used. Averages and weighted averages cannot be used since they do not reveal anything about the span of the data or the variation. Also, since the distribution of data in the baselines is almost always asymmetrical and multimodal, the normally calculated standard deviation is also inadequate. A standard deviation is measurement of variation that has a certain consistent meaning relative to a symmetrical, unimodal distributions, or normal distributions. The calculation of standard deviations will not provide a replicable number in the types of

distributions typical of baseline period payment practices. After trial and error and the examination of a lot of data, a promising statistic was developed that was centered on the median of dollars paid and assumed equal margins about the median. The development of this statistic was a major stepping stone to the model.

Simple examples of frequency distributions and payment practices

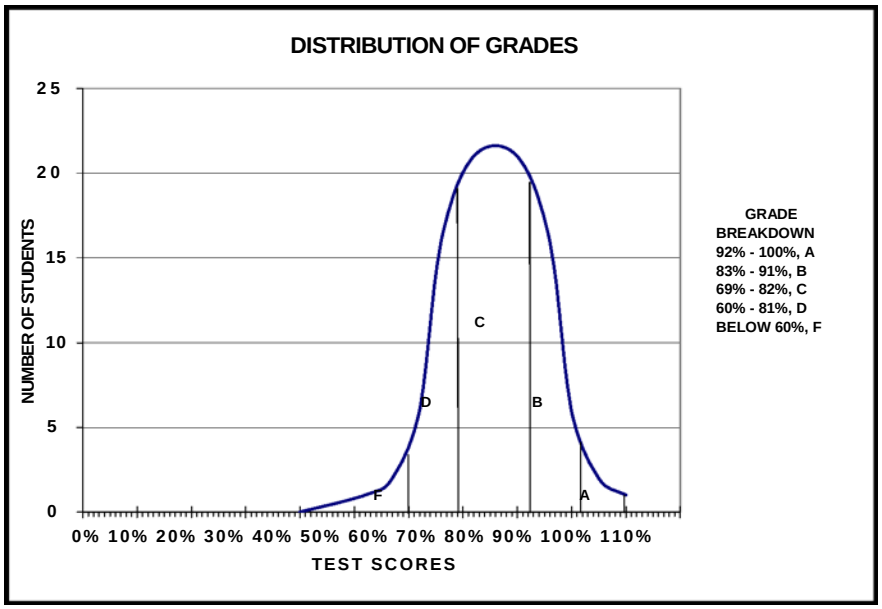
Distribution analysis might not be typical topic for dinner table discussion, but we all have had some exposure to it. Our introduction probably dates back to the first time one of our teachers said they were grading on a curve. Below in Figure 1 is an example of a simple bar graph distribution.

Figure 1



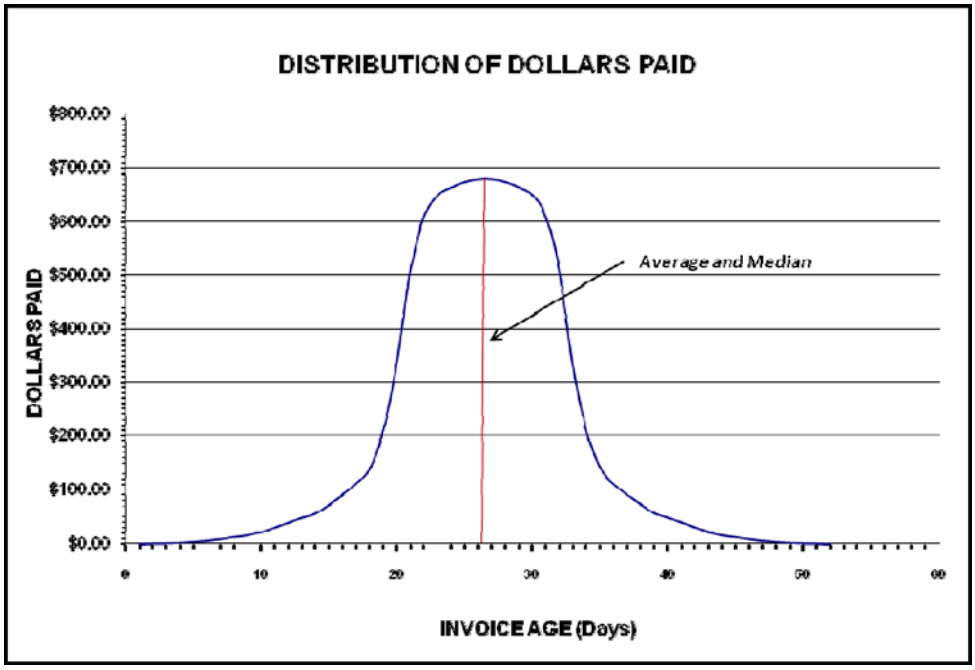
A different way of displaying this data, and more relevant to how payment distribution is displayed is as follows in Figure 2.

Figure 2



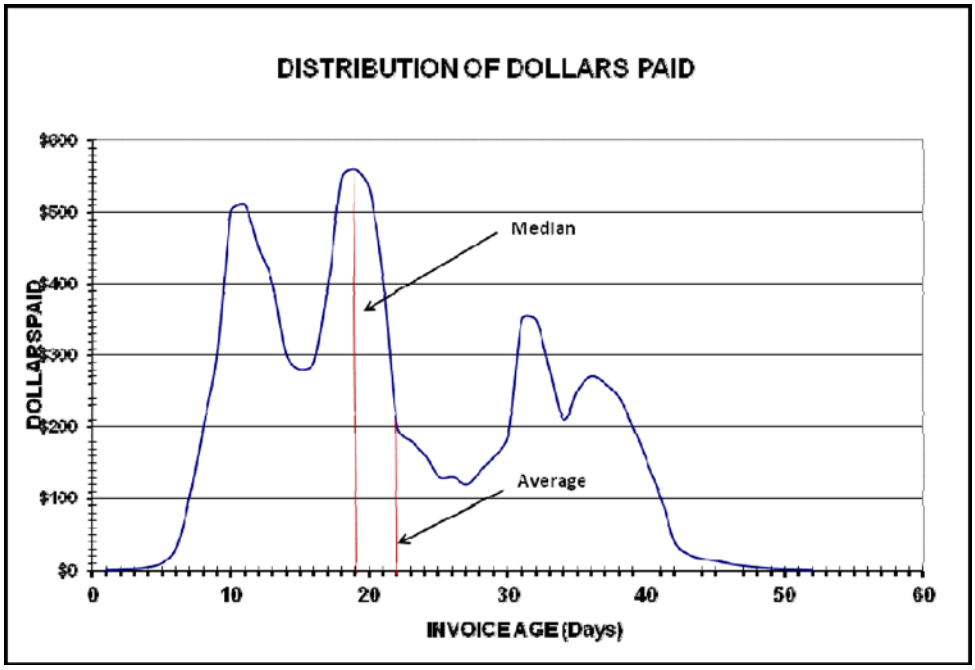
On the previous graphs the variable being measured, test scores, was on the horizontal or X-axis, and the frequency of those is shown on the vertical, or Y-axis. For the purpose of studying the frequency distribution of payments, the variable being measured is the age at which the payment was made. A normal, but unlikely, payment frequency distribution would look like the following on Figure 3.

Figure 3



A more typical distribution of dollars paid is shown below in Figure 4.

Figure 4



The development of the model

In developing a mathematical model, especially a simplified model, one must keep in mind the limitations of accuracy, and identify the characteristics of the data that lead to inaccuracies. Also, the accuracy of a model cannot be greater than the sum of the contribution of the parts. In this case, we did not know how much of the Ordinary Course assignment is based on the payment practice aspect. So the expectation of accuracy was low at the beginning of the project.

It was pointed out earlier those methodologies that assign Ordinary Course based on personal judgment lack an objective definition of ordinary and a set standard that can be replicated. In modeling, ordinary can be defined and the standard can be replicated. The definition of Ordinary Course as it relates to the unbiased payment practices is as follows, "Ordinary Payment Practice is defined as a range of age of invoice payments calculated by a standard mathematical expression. This standard expression was developed by trial and error according to the best fit of predicted preference recoveries to the actual recovery results of 1,232 preference settlements in four bankruptcy cases." The standard model can be described as the interval of payment ages inclusive of 36.5% of the dollars paid on each side of the median point extended by a constant of seven days on each side.

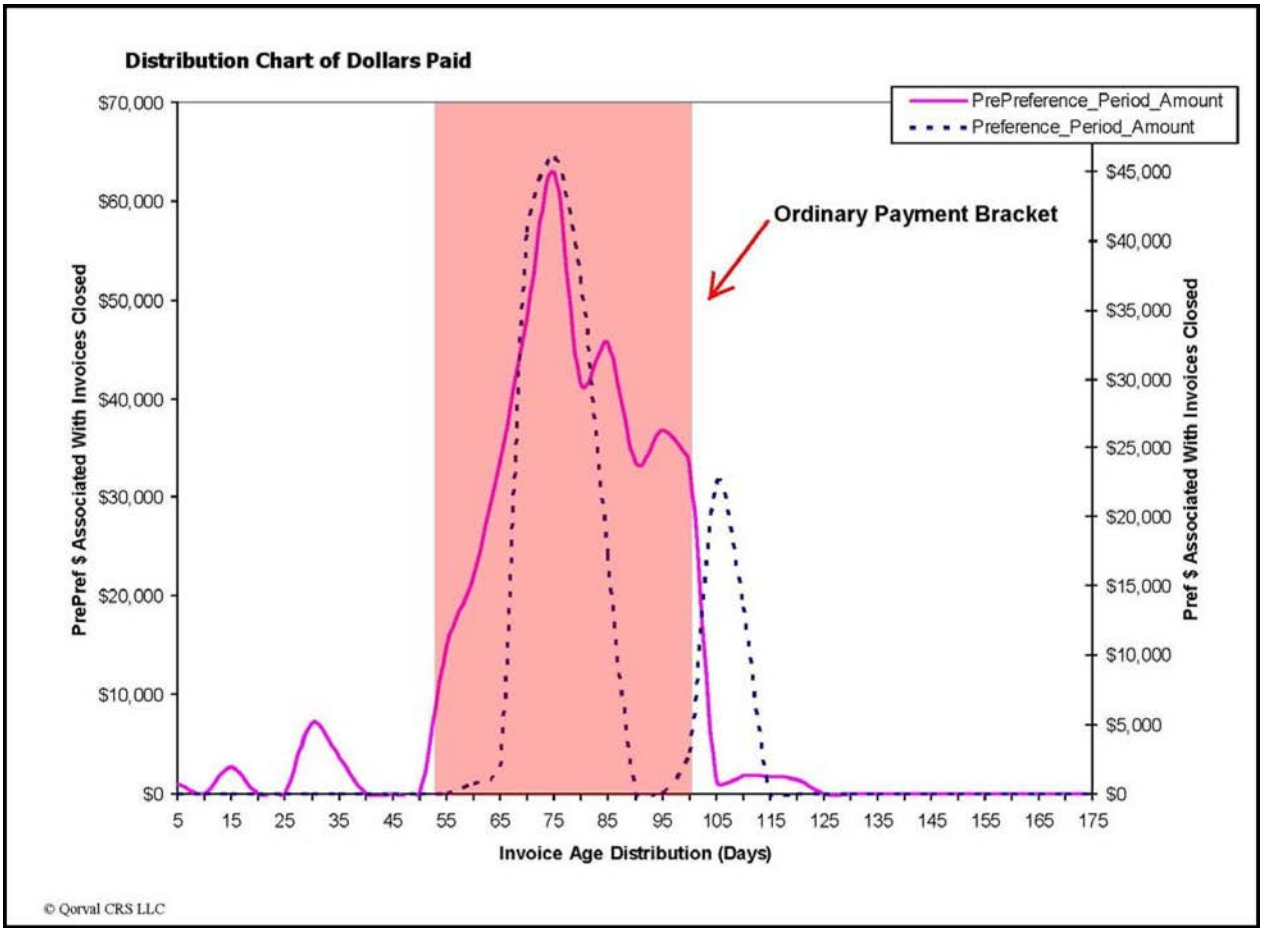
The data that was available was obtained from preference recoveries from four very different bankruptcies. Adding to the broadness of the data is the fact that the law firms conducting the legal work and negotiations were different in each bankruptcy. The bankruptcies included a coal company, an office furniture manufacturer, a Kraft paper manufacturer and a consumer electronics distributor. As can be seen on Table 1, the errors of the estimated recoveries to the actual were +6.3%, -7.6%, +16.9% and -13.5% with a total error of +1.6%.

Table 1

Company	Coal Company	Office Furniture Manufacturer	Kraft Paper Manufacturer	Consumer Electronics Distributor	Totals
Number of Creditors	277	605	229	121	1232
Total Preference Payments	$53,478,833	$36,304,285	$32,185,340	$8,684,736	$130,653,194
Model Recovery	$3,231,663	$3,698,120	$3,275,561	$2,077,186	$12,282,530
Total Recovery	$3,435,767	$3,418,234	$3,827,891	$1,797,285	$12,479,177
Percent Error	6.3%	-7.6%	16.9%	-13.5%	1.6%

The last exhibit is an example of the predicted ordinary payment practice overlaid on a distribution graph of preference period and pre-preference period payments.

Exhibit 4



Conclusions

As suggested earlier, the determination of Ordinary Course is a judgment call and a product of negotiation between two external parties depending upon their respective interpretation of legal precedents and what meets their personal standard of ordinary. Also, as mentioned earlier, the term ordinary is simply a subjective term in the abstract that is used to describe an outcome. If however, we record 1,232 outcomes and the outcomes are measurable, we can use that information in a mathematical model to measure and define ordinary. The accuracy of any model is related to the number of data points and the broadness of the data sources. While the applicability of this model to other bankruptcy cases is unknown, the data used to develop this model was from very different types of cases including a great dissimilarity of vendors. Agreement within this database indicates a broad application. The model predictions compared to the actual recoveries show a greater agreement than anticipated: 3.2:3.4; 3.7:3.4; 3.3:3.8; and 2.1:1.8.

We can conclude for the population of preference settlements studied that the following are true

1. There is a characteristic of the payment practice that can be measured and quantified.

2. The influence of the mathematical part of Ordinary Course is large enough to be distinguished from the influence of the whole.

3. There is common ground among the thought processes of the many negotiators of preference settlements. Yes, great minds do think alike.

Comments on process improvement

In closing, I would like to mention that what has been so interesting and challenging to me in my career is that process improvement is a never ending task. I have invariably found three things in the aftermath of advances in processes. The bigger the change, the greater will be the opportunity for more improvement. The bigger the change, the greater will be the level of sophistication needed for further change. And finally, the bigger the change, the greater will be the opportunity for the skilled to prosper.