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PART A :ARTICLE

THE SEVEN DEADLY SINS OF START-UP VALUATION

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Valuing a start-up is a very complex exercise because start-ups are innovative companies with limited financial information and an economic model that is usually not stable. The start-up has to get through several stages before reaching maturity. Obviously, it is very difficult for a valuer to find comparable transactions, much less develop credible cash flow forecasts.

Notwithstanding these challenges, investors in start-ups routinely do estimate the value of start-ups. The inability of valuers to use their usual reference points, gives rise to errors in valuation.

In an article titled “The Seven Deadly Sins of Start-up Valuation,” which appeared in the summer 2021 issue of *Journal of Applied Corporate Finance*, Franck Bancel, Bruno Martinard, and Henri Phillippe discuss the seven deadly sins of start-up valuation.

1. Dismissing the first principles of valuation.
2. Failure to distinguish risk from uncertainty.
3. Using too high discount rates.
4. Excessive emphasis on near – term cash flows.
5. Neglect of the terminal value.
6. Applying multiples without controlling for the level of risk and growth.
7. Reliance on sophisticated models.

Dismissing the First Principles of Valuation Valuing start-ups is a complex and difficult task, given the unique nature of the companies and the substantial risks faced by investors. This, however, does not mean that the first principles of finance should be abandoned.

The fundamental value of an asset, real or financial, is equal to the present value of its expected cash flows discounted at the risk – adjusted rate. Applying these principles to a start-up means determining its future cash flows, assessing their probabilities, and finally discounting them at a rate consistent with financial theory.

If these principles are ignored and some dubious short cuts are applied, because they are in fashion, it is difficult to fathom the potential mistakes. It is true that valuation errors often arise even

when the first principles of valuation are applied. Nevertheless, an explicit valuation framework consistent with the first principles helps in debating, discussing, and learning from experience.

Failure to Distinguish Risk from Uncertainty Some start-ups may have achieved a certain degree of maturity, with good visibility about likely outcomes and their associated probabilities. In Knightian terms, such start-ups are characterized by risk; the standard method of valuation can be applied to them with confidence.

Other start-ups may be in an early stage of development where it is not possible to say when they will acquire their first clients, what the future developmental expenses would be, so on and so forth. In Knightian terms, such start-ups are characterized by uncertainty. In such cases the traditional valuation principles are not applicable.

Using Too High Discount Rates Some valuers use extremely high discount rates like 30 percent to 40 percent to discount the future cash flows of a start-up, to counter the optimism characterizing cash flow projections. This approach is flawed conceptually and theoretically: (a) High discount rates imply that the risk increases geometrically at those high rates. This is often not the case. (b) From a theoretical point of view, only systematic risk should be considered in the discount rate. Unsystematic risk should be dealt with in the cash flows.

A better approach to valuation is as follows: (a) Develop multiple cash flow scenarios along with probabilities associated with them. (b) Value the cash flow in each scenario using a discount rate that reflects systematic risk. (c) Estimate the value of the firm as the probability weighted value of the values under various scenarios.

Excessive Emphasis on Near- Term Cash Flows For a mature company, the discounted future cash flows provided by the management account for the lion's share of value. For a start-up, however, the cash flows provided by the management are not generally accorded the same status and investors are often reluctant to use the DCF method for them. Yet such investors ask for cash flow projections to assess the expectations and credibility of the management team and to ensure that it is conversant with the language of finance.

Neglect of the Terminal Value For most companies the terminal value (the value generated beyond the explicit cash flow period) is a significant component of value. For a start-up, it often represents 100 percent or more of the start-up's value, thanks to negative cash flows in the earlier years on account of capital expenditures and developmental expenses.

Estimating the terminal value of a start-up is quite challenging. The valuer has to get a handle over the size of the target market, the market share the start-up would capture, the capital expenditure (tangible and intangible) necessary to achieve this objective, the expected future profitability, the probability of the start-up's success, and so on.

Applying Multiples without Controlling for the Level of Risk and Growth The oldest and most widely used method of valuation is perhaps the multiples (or "comparable") method. For a start-up, however, this is very challenging. It calls for identifying a sample of companies in the same sector and ensuring that the target company is comparable to the sample of companies in terms of profitability, growth, and risk. In the case of start-ups, thanks to their uniqueness and innovative character, these conditions are very difficult to meet.

As a practical expedient, valuers use a multiple based on revenues or number of subscribers or clients. Such multiples rarely control for profitability, growth, and risk. Hence, their indiscriminate use can lead to significant errors.

Reliance on Sophisticated Models At the beginning of the “new economy” years, some valuers thought that valuing a start-up required more sophisticated financial models. In particular, the option pricing model was considered appropriate because typically a start-up has no assets in place and its equity could be likened to an option that grants the right to develop a new profitable business in the next few years. However, this approach proved intractable because a key input required for valuing an option is the volatility of the underlying asset and this is very difficult to define for a start-up.

In more concrete terms, the problem is not the model, but the ability to measure risk. Employing a sophisticated model is not the solution for valuing a start-up. The solution lies in developing a solid understanding of the start-up’s future possibilities, using a probabilistic approach, and working with a range of acceptable values.

PART B : SNIPPETS

Risk Preference and Time Preference

In economics, risk preferences and time preferences are treated separately and it is assumed that these two kinds of preferences are unrelated. Since the outcomes of most human decisions are uncertain and take time to materialise, there is a potential link between these two entities. Some researchers are trying to grapple with the complex interaction between these two kinds of preferences.

Morality

In neoclassical economics there is no explicit role for character virtues such as honesty, truthfulness, integrity, and fairness. Neoclassical economics assumes that people are inclined to tell selfish black lies, that is lies that benefit the individual but harm others. However, in the real world, we do find individuals who display character virtues. In neoclassical economics such behaviour is considered *instrumental* because individuals are regarded as *consequentialists*. Thus, neoclassical economics takes a fairly dismal view of human nature, in comparison with many other social sciences in which humans intrinsically display character virtues.

Dysrationalia

In his book *What Intelligence Tests Miss: The Psychology of Rational Thought*, Keith Stanovich coined the term “dysrationalia.” It refers to the inability to think and behave rationally despite possessing high intelligence.

According to cognitive psychologists there are two major causes of dysrationalia: a *processing* problem and a *content* problem. Stanovich argues that we process poorly. As cognitive misers human beings tend to rely on processes which require less computation effort. This compromises the accuracy of processing.

The second cause of dysrationalia is inadequate content. Psychologists who study decision making call it a “mind ware gap.” According to David Perkins, a Harvard cognitive scientist,

mind ware refers to knowledge, strategies, rules, and procedures people have at their mental disposal to help them solve a problem. Mind ware gaps generally arises from a lack of broad education. As Perkins says, "What is missing is the *meta curriculum* the 'higher order' curriculum that deals with good patterns of thinking in general and across subject matters." Liberal arts education is helpful in improving mind ware.

PART C WIT AND WISDOM

HUMOUR

Drawing

A little girl was busy drawing. Her mother asked, "Honey, what are you drawing?"

Girl, "I am drawing the picture of god."

Mother, "But no body has been God. How do you know how God looks like."

Girl, "Mama, once I draw the picture, people will know how God looks like."

Kissing

A puritanic professor was against kissing. He told the young girls in his class, "Do you know, when a man kisses you, he transfers 40,000 germs. Is there any remedy?"

A sweet girl replied, "Return the kiss."

WISE SAWS

. Blessed are they who have nothing to say and who cannot be persuaded to say it. : James Russell Howell.

. Civilisation is a movement and not a condition, a voyage and not a harbor. : A. Toynbee