

IISC Article: How Does Wide Accessibility to Investment Capital From Non-Sector-Specific Funds Threaten the Commercial Space Industry?

I was speaking with a venture capitalist who funds companies in the space industry recently. Much to my surprise, he told me he'd like to see less capital accessible to space founders from funds that don't have sector focus.

When I pressed him as to why, he said as this is a new commercial market it is not well understood; therefore, similar to the biotech industry, funding decisions were best left to VCs who specialized in it.

My reaction of surprise was not due to the idea of having less capital from funds that don't have specific sector focus for space founders to access: I had already come to that conclusion. Rather, it was the fact that this opinion was provided by someone who should have a vested interest in the opposite situation! And as it turned out, he was not the only venture capitalist who felt this way.

But why should I, an ardent capitalist, space enthusiast and business owner, advocate for the restriction of capital to the space market? Is it because I am a mean-spirited ogre, intent on trampling the dreams of founders throughout the galaxy? No: it is because I want commercial space to succeed.

Space, as any other industry, is strongly affected by the fashion of the moment. Ideas matter. Should the nascent commercial space industry experience just a handful more failures the likes of Sky & Space Global, Vector Launch and Planetary Resources, the likelihood of venture capital running away from the commercial market greatly increases.

Another investor, Micheal Mealling of Starbridge Venture Capital, suggests:

Across capital markets there is a desperate search for uncorrelated Alpha in which to put all of the extra cash floating around. But the Internet has trained two generations of investors to expect two college students and unlimited pizza can get a 20X exit in 6 years. That is an aberration. Investing requires a tolerance for real risk and a deep knowledge of the market.

One of the signs of impending economic trouble is a gross expansion of credit unsupported by collateral or a "hard money" fiscal policy. Even world-leading lenders agnostic of any economic school of thought opine:

Higher property and securities prices encourage investment activity, especially in interest-sensitive activities like construction. But, as lending expands, increasingly risky investments are underwritten. The demand for risky investments rises with the supply, since, in the prevailing environment of stable prices, nominal interest rates and therefore yields on safe assets are low. In search of yield, investors dabble increasingly in risky

investments. Their appetite for risk is stronger still to the extent that these trends coincide with the development of new technologies, in particular network technologies of promising but uncertain commercial potential.

Eventually, all this construction and investment activity, together with the wealth effect on consumption, produces signs of inflationary pressure, causing the central bank to tighten. The financial bubble is pricked and, as asset prices decline, the economy is left with an overhang of ill-designed, non-viable investment projects, distressed banks, and heavily indebted households and firms, aggravating the subsequent downturn. (Eichengreen and Mitchener, 2003)

When the word “construction” is mentioned, let us immediately equate that to “space infrastructure”. We must be wary of investment in infrastructure projects: and satellite constellations, spaceports and the like are indeed infrastructure projects. History is replete with examples of government spending “boondoggles”, especially in the “I want one of those!” department:

Proponents of government infrastructure spending often point to the success of the Erie Canal, which opened in 1825. But the proponents usually don't mention the slew of government boondoggles that followed it. The Erie Canal was a big success, but that prompted politicians in Michigan, Pennsylvania, Ohio, Indiana, Maryland, and Illinois to spend lavishly on their own, often dubious, canal schemes. State politicians overestimated the demand for canals and underestimated the construction costs. Routes were often chosen for political reasons, not to maximize economic benefits. It turned out that the Erie Canal was a uniquely high-return route, while nearly all the rest of the state-sponsored canals in the mid-19th century created large taxpayer losses.

Today's equivalent of spending on boondoggle canals is spending on urban rail systems. The federal government will spend about \$13 billion on urban transit in 2015. Federally funded rail projects have long been prone to cost overruns and inflated ridership projections. A 1990 Department of Transportation (DOT) report examined the costs of 10 large rail projects. Nine of the projects had cost overruns, and the average overrun was 50 percent.

Little has changed since that study. Martin Wachs, the RAND infrastructure expert, says, “of 35 public transit projects I have studied in the U.S., 33 overestimated patronage [ridership] and 28 underestimated costs.” A new study by Randal O'Toole and Michelangelo Landgrave looked at the costs of 45 urban rail projects across the nation since the 1980s. They found that most rail projects went substantially overbudget and had inflated ridership projections. On average, the rail projects doubled in cost between when they were approved and when they were completed. (Edwards and Kaeding, 2015)

Note the economic driver problems: consistently, demand was overestimated and costs were underestimated. While some situational differences can be claimed such as land rights issues affecting rail costs in the US, I emphatically suspect the same to be true for space infrastructure projects.

Founders are eager to get their personal dreams funded: often too eager. In their eagerness to create what they want, rather than what a customer wants, they risk enthusiastically overstating potential market size and user adoption rates while simultaneously underestimating the costs to achieving fruition. What situation will they and their investors discover themselves in when fashions shift, the market moves, or other circumstances change? We have already seen examples. Continuation becomes unsustainable and the dreaded scarlet letter of bankruptcy is applied not only to the founders but also the investors who believed in them.

Further, the frequent company executive response to economic downturns is to sell assets. However, newspace companies rarely have assets anyone outside the industry would want: so who would they sell to? Recovery of even a significant portion of asset value in cash sale is unlikely.

Let us move on to the lure of fashion. Attempting to be the darling of the space industry is tempting. It is possible, with funding, to look successful on a surface level. Many firms have momentarily done so with their cereal bars and employee playgrounds. Yet I caution founders with examples of flashy appearances belying deep problems such have been experienced with urban renewal projects, which are capital infrastructure improvements with their own predicted versus actual user adoption and cost measures:

Indeed, according to Levine (2000, p. 124) just 15 'blocks way from the Inner Harbor and expanding to broad patches of the urban landscape were desolate neighbourhoods marked by social exclusion, high rates of crime and drug abuse, deepening ghetto poverty, and dilapidated or abandoned housing, where much of the city's predominantly black population lived.' Therefore claims that Baltimore had become a 'renaissance city' as a result of its urban regeneration efforts were inaccurate. Moreover, the sustainability of tourism as an income generator when compared to sectors such as manufacturing and services has been questioned. Barringer (2001), when looking at 'carnival cities' (such as Baltimore) that use attractions like convention centers, casinos and sports stadiums to bring in tourist money, believes they often end up spending far more in subsidies than they gain in revenue. Moreover, Levine (2000) feels that, in the rush to attract investment, officials in Baltimore did not carry out the appropriate due diligence and thus deals were structured badly, loans were not fully repaid and taxpayers ended up paying for failed projects such as the Columbus Center. (Wall, 2013)

Badly structured deals, loans unrepaid, and funders paying for failed projects. Are these poisonous outcomes lying in wait for our businesses in the space industry? When excessive paper money credit is extended, the focus is on flash and fashion, and the numbers of the

business model in estimation and practice are all wrong the answer of the experts seems a resounding, “Yes!”

Space founders should be wary of and not so eager to receive investment: investment is not always the magic bullet they think it is going to be. Space venture capitalists must also be wary: the blue sky high user adoption figures and best case low implementation cost numbers passionately declared at them by funding-hungry founders cannot be trusted. Sector-knowledgeable investors are more likely to be able to look past appearances and not to trust such figures.

History is replete with instances of capital infrastructure projects backed by paper money investment which worked in the short term, only to collapse in the medium term when the market and other circumstances slightly changed. None of us wants to see the commercial space industry collapse because it got caught up in such arrangements. Let us therefore strive to bring in less venture capital from funds that don't have a sector focus, and work on ways to increase volume of capital available through investors who truly understand this specialized field. This is the path I believe best for the survival and growth of the commercial space industry.

Works Cited

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