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ECONOTE No. 112 The " AI revolution" : A cautionary tale and its investment consequences May 19 2023

Summary

The re-emergence of AI as a topic of hype, caution and investment contains, in equal parts, the re-discovery of a pre-existing technology, but now on steroids, plus all the excitement of the race among the top 5 techs to invest enough in order to dominate the field.The 2000 Dot.com boom involved hundreds of IPOs of start-ups , all with the word "internet" in their names, except now the AI boom involves mostly buying up existing startups by the big Techs. The re-emergence of AI will undoubtedly change a lot of the ways in which data are used and monetized, it will make Google search far more client-friendly and it will step up the capacity of software to program themselves. The latter is unlikely to open the possibility of robots taking over the earth and killing all baby seals and earthlings in the bargain (!), but instead far more flexible and cheaper programming. Indeed it might even threaten the position of the big 5 techs in the battle for dominance.

Investment Conclusions

Strictly within our regulatory remit, this report does not recommend buy/sell/hold of specific AI shares, but examines the overall prospects of the sector of AI investments. The big five tech companies are used as a benchmark for the comparative performance of the sector and, given the very diverse performance of the individual five, none of them are analyzed individually. The analysis points out the potential limitation of an AI boom, similar to that of the 200 Dot.com. However, the analysis also points out that the hype surrounding the AI in general should be avoided in preference of analysis of firms either as potential takeovers or stand-alone entities. The latter must show clear ability to monetize the use of AI in a field which is fiercely competitive and, which may not at the end, be dominated after all by the big five.

The AI: Nothing new under the sun, but with some

"Let me count the ways" as Elizabeth Barrett Browning (1806-1861), that well-known Victorian investment banker (!) said, well ahead of her times. Let me count, indeed, the hyped technological pivotal points, leaps of discovery and progress, with all, inevitably, containing in their publicity and names the words and expressions " AI and how it will change forever the course of human history and the way we live, etc. etc". A few clarifications points. **First,** the world has been using AI for years, if not decades now, under names such as Machine Learning and Artificial General Intelligence, the latter now on steroids and renamed AI. Nothing basically new, except a vastly improved application with huge potential. Remember that portable walkie-talkies were used extensively in WWII before transmogrifying to the original "bricks with antenna" mobiles. Then someone added a camera and made them much smaller, and we never looked back. Complete breaks in technology are infrequent. Science does not move most of the time in huge leaps but mostly through continuous progress. **Second,** the big change here, but on the basis of an existing technology, is generative AI which enables the software to learn and develop in processes which, partially mimic the human brain and primarily its language skills in order to generate answers to questions. For the time being there are several such software programs, led however by ChatGPT now now partially owned by Microsoft (paid USD 10.0 bl).**Third,** AI cannot produce a perfect financial forecasting model. Investors just don't get it, that ANY system which forecasts perfectly will, eventually, be acted on by investors and, hence, it will stop forecasting perfectly. If everyone, based on a forecast, expects prices to go up on Monday, then prices will not, as there will plenty of buyers but no sellers. It might take time for investors to recognize this, but they will at the end. Simple.

Fig 1. The 2000 Dot. com boom-bust, S&P 500 1999-2001

Investing in AI tech: Four simple truths

First, as Fig. 1 shows, during late 1999 to early 2001 stock prices boomed and then fell continuously as the Doc.com craze took its toll on inflated startup prices and, equally, expectations. As anyone around the age of 40 right now (millennials plus+plus+plus) trading in the markets, will have no adult, let alone trading memories of these heady days, then they are strongly advised to go back and examine the record of the markets then. An example is given in the Factbox. Internet has changed our lives, helped by Covid, but in various sectors and manners and in various degrees. Most of the changes were incremental rather than absolute, in analogue rather than in digital forms. For the millennials consider also the recent "will change forever" type of hyped changes .From the pathetic bitcoin, still waiting to substitute currency as we know it, to blockchain software, active nearly a decade well before bitcoin tried to equate itself with it, and still not changing our lives and, most recently, Metaverse. Poor Facebook jumped the gun and even changed its corporate name to corner the trademarks. We are still waiting the global village

Factbox: Examples of hype, quotes from 2000 (Source: ChatGPT)

Here are some hype statements made during the 1999-2001 period about the future of the Internet. During this time, there was a lot of excitement and speculation about how the Internet would change the world, which led to the dot-com bubble. Many of these predictions were overly optimistic or did not come to fruition as expected:
Global Village: "The Internet will create a global village, connecting people from all corners of the world and allowing them to communicate instantly." **E-commerce Revolution**: "E-commerce will completely revolutionize the way we shop, making brick-and-mortar stores obsolete **Webvan**: "Webvan will be the supermarket of the future, delivering groceries to your doorstep at the touch of a button." **Online Education**: "Traditional schools will be replaced by online education, making learning accessible to everyone around the world." **Digital Divide**: "The Internet will eliminate the digital divide, giving everyone equal access to information and opportunities **Work from Home**: "The Internet will make it possible for everyone to work from home, ending the need for offices.

Fig.2: The big 5 Techs, 2021-23, 2021=100

Source: Bloomberg

And now, for the inevitable sum up

There is no evidence that the investment in AI is generating a Doc.com type of boom in the stock markets in general, or in the tech sector in particular. The differentiated performance of tech companies in different subsectors points to that. However strict vigilance is needed in weeding out the hype surrounding AI lest it affects investment decisions.

Nonetheless there is growing investment by AI on other AI firms in the face of growing competition and in the face that monetization of the resulting services will prove difficult. In the words, apparently of Alphabet, there will be no moats to protect the AI investments as it is becoming easier for small companies, and with little capital, to make inroads in the market. (The Economist 13/5/23 pp.55-57)

Hence selective rather than "sectoral" investment choices are called for based on monetization rather than on tech advancement where small might be better than big.

Fig.3 Acquisitions of AI start-ups 2010-2021 (Statista, March 2023)

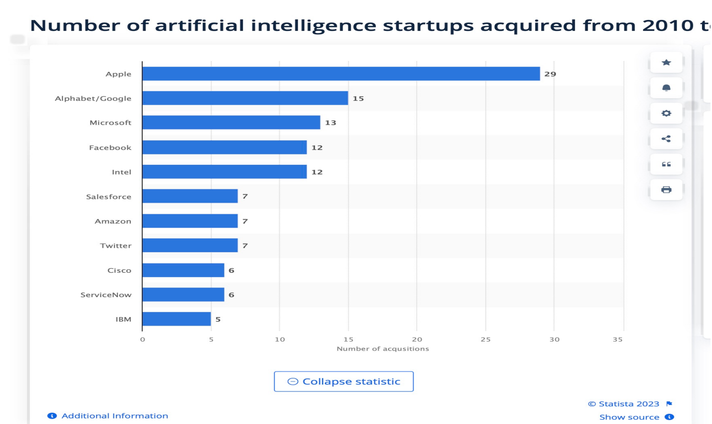
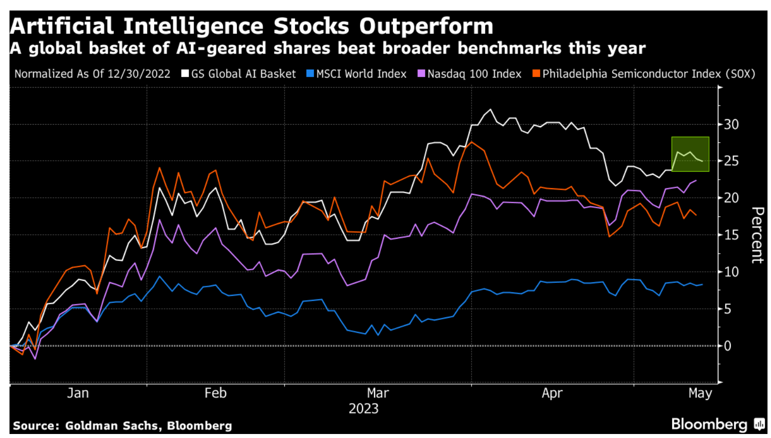


Fig.4 Comparative performance of AI stocks 2023 (Bloomberg 16/5/23)



and all the attendant hype, while helmet-type 3D visors are lingering in developmental stages**. Second.** Fig. 2 shows that the performance of the big 5 techs since January 2021 versus the S&P 500 is quite variable with Amazon and Meta underperforming and the other 3 outperforming. It will be tempting to judge this performance on the basis of their comparative investments in AI which, incidentally, predated the 2023 boom in buyouts. Fig. 3 shows that acquisitions of AI startups varied widely among the big 5 , with Microsoft, now considered by many as leading the field with its support/ownership of ChatGPT, being third and with Apple first. **Third,** as Fig. 4 shows AI stocks since the beginning of the year have outperformed stocks in general (MSCI World Index) as well as more general tech related shares. There is always an inherent difficulty in differentiating what defines a "tech" stock. The sector contains firms which manufacture goods, such as Apple, firms which produce software and programs such as Microsoft and to others which produce services, such as Meta.