Investment Commentary No. 204

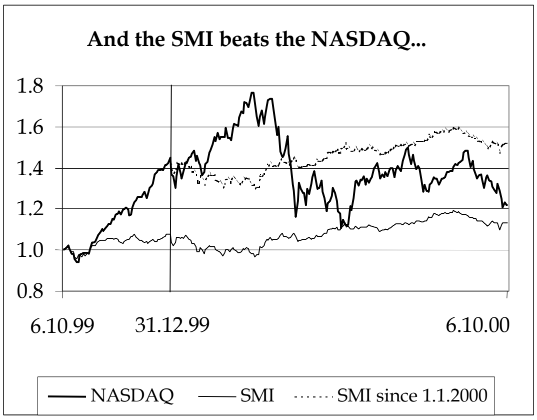
October 23, 2000

On the Value of the Freedom to Act

1. 2000 – Nothing to Brag About?

Whosoever has propagated holding shares as the only right type of investment for the middle to long-term oriented investor is (once again) called to justify his opinion. One of the leading stock market indicators, the Dow Jones-Index lost 11% since the beginning of the year; the Nasdaq-Composite-Index, which in light of the technology boom has gained more and more importance, is down 14%; the German Market Index DAX has to date suffered a 5% decrease; and it is only the Swiss stock exchange (measured by the SMI) which lies in the winners circle with a slight 2% profit. Asset managers and investment advisors are moaning for they anticipate that at the end of the year their clients will be examining whether their long-term strategies are correct or not based on annual returns. The advisors know from experience that a minus return figure will result in difficult discussions. In fact, a yield-moderating break in the form of a possible negative annual performance is about as unimportant as a two kilometer bottleneck on the long drive between Marseille and Munich. However, if one is stuck in the traffic jam, then this event appears to have over-exaggerated dimensions. The blame for this frustration cannot be placed on anyone in particular.

The probability that there will be tough confrontations is in fact relatively high, because the actual index figures do not reflect the real contents of the managed portfolios. Whoever had the bad luck to place funds into such unchallenged Blue Chips as BASF (-21% since the beginning of the year), Clariant (-35%), Thyssen-Krupp (-52%), SAir (-30%), or in America in AT&T (-47%), Dow Chemical (-46%) or Procter & Gamble (-33%), has little hope of reaching index yields by the end of the year. Added to the justification needs, respectively the absolute net yield figure, the problematic nature of explaining the relative poor performers vis-a-vis the entire market enters into the picture. No wonder that idle happiness does not reign eternal.



Source: Bloomberg; & Co.

It is so: Since the unstoppable upwards tendency of the stock markets in the wake of the 1998 crisis, the markets have since the end of February entered into a phase of higher and more erratic assessment hectic. All in all and on average, this phase has accomplished nothing. In most cases as we have mentioned before, a tragic scenario predominates; there are however increases to report in certain titles, for example 21% for BMW, 21% for Nestlé and even 51% for Rentenanstalt, in America Boeing showed a 45% increase, Pfizer 34%, and Sun Microsystems 53%. With a little bit of luck (of course, one would say insight) portfolios have also included such equities. On the whole, however, this hardly would improve the situation.

Zero-sum games have the one negative characteristic that they appear to be completely useless. In this Investment Commentary we will attempt to show that the time since the end of February 2000 has been anything other than uselessly squandered. Perhaps it has not brought to the investor any or very little pure numerical gain. We all, however, have acquired *new knowledge* if we have paid some attention to the markets and reflected on this assessment spectacle. We now know namely all about the so-called "Old" and the "New Economy". We know what the markets think about the splendid future visions, and we recognize in the meantime the obstacles which lie in the path of realizing these visionary projects. We have also learned that at any time the markets can put a new view on the realization of these dazzling dreams. The variance in these notions over the course of time – yes, we have met them in the year 2000 - they are the enormous and brutal assessment differences. And we have also experienced something else: These assessment differences have not been limited in any way only to the "New Economy", but also have spilled over into the traditional markets.

The numerical zero-sum game has turned out to be a very charming intellectual challenge. Let's play the game.

2. Is Ebner Wrong?

Three weeks ago, the BZ Group demanded the splitting up of the pharmaceutical giant Roche and the American company which it controls – Genentech. As a major Roche shareholder, the BZ Group is upset that the American company standing under the roof of a family-controlled business on the (biotech) forefront is not reflecting the value of its high economic productivity in combination with the Swiss pharmaceutical corporation on the stock markets. It is being argued that each part standing alone would more likely be more valuable, respectively, it is possible that the pharmaceutical-oriented division would prove to be too small and not productive enough. Viewed purely arithmetically, this assumption is likely to be correct. Because if one subtracts the 59% participation in Genentech from the entire stock market capitalization of Roche in the amount of approx. SFr 140 billion, then SFr 93 billion remains, and Roche would only be ranked 15th among the world's largest pharmaceutical companies. Together with Genentech it occupies position #8.

We assume that the BZ Group and with it Martin Ebner is attempting firstly to place pressure on the owner family of Roche to make progress in reorganizing the capital structure. Ebner had earlier tried something similar with SBG; it is obvious that strange regime with few nominal shares and a vast amount of bonus shares is a thorn in the eye of those with a 16% participation in the form of Roche nominal shares and who possess very little freedom to act. He can hardly separate himself from the package without suffering further losses (Roche nominal shares have already sustained 29% losses in 2000), an appropriate intervention has on the other hand been refused by the owner family. A partial liquidation of participations by the spin-off of Genentech would most likely be met halfway. Ebner certainly is not mistaken in so far as this relates to his personal profit optimization rather than in the limited freedom to act as a Roche major shareholder. This should not amaze anyone.

We yet ask the question whether the splitting makes sense out from an economic point of view (and with it out of the viewpoint of the not-free-to-act small shareholder). We doubt this with a look at the events which have occurred so far on the markets of this lively year. For it has shown that the single-handedness of the "New Economy" companies, which are focused on only a few themes, can have quite their own complications. We will go into this in more depth below. But also from the view of the "Old Economy", and the classic pharmaceutical business concerns this area, the question is put as to how one can hold one's own in technologically changing times other than in combination with a "New Economy" firm. Should one follow the way of the dying, like the copy-machine manufacturer Xerox (Share price top 1999: -73%!) after obviously choosing a failing change in strategy? Does it make sense if a colossal brand name- and marketing-capacity shares its destiny with a less-important nascent technology, or would it not be cleverer to use the potential with timely strategic steps for new technologies and products?

3. Pure Theory

Roche together with Genentech is a *Conglomerate* consisting of a pharmaceutical division enjoying a strong brand name, and a division involved primarily in bio-technological research. According to pure portfolio theory this is a sub-optimal constellation because it is ultimately not clear which part of the conglomerate contributes which returns and which part produces which risks. And because these essential economic quantities can not be clearly allocated, the probability is great that the conglomerate-internal incentives are not aligned with the welfare of the whole, but rather to an allocation process with a focal point on internal politics which betrays the interests of the owners of the corporation.

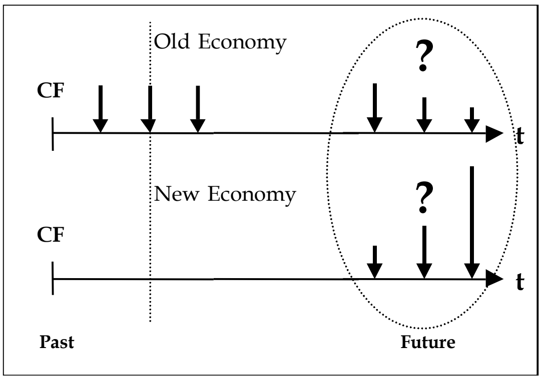
How true. In the context of the structural change of the nineties, one conglomeration after another had to be broken up exactly for the above-mentioned reasons of concealing of profit and risk contributions and the associated sub-optimal incentive structure. Those were the good times for the BZ Group and Martin Ebner. And there still exist many possible target objects one is tempted to say, still in Ebner's favorite hunting grounds, among the big banks and conglomerate-like corporate structures which are long way from being cleaned out.

Portfolio theory and thus the management of all of the millions of portfolios worldwide demand transparent allocatable return and risk characteristics of suitable financial instruments. The optimization of yield and risk can occur more efficiently within the individual portfolios than within a business, and above all can take place without distorting incentive situations. That's a fact. Ideal from the viewpoint of portfolio theory would be essentially a narrowly-focused "one-theme-company" in an optimal business management size, and if possible with an clearly allocated regional emphasis.

Only: Is such a focused enterprise able to survive in the light of technological advancement? Or questioned another way: Are there any specific reasons which would seem to support other corporate models in an economic phase characterized by vast change and development rates? This question sounds quite harmless, but it is not. Because it concerns nothing but the problematic like with "New" and "Old", respectively avoiding their convergence. That one can lose (a lot!) of money along with it, has been shown often enough on the markets in this past year. This is reason enough for us to preoccupy ourselves with this question.

4. What is actually New and what is Old?

Up to now there is no generally recognized definition for the often-cited "New" and "Old Economies". The link to newer or older technical standards does not help us any further than to simply shift the problem into the technical realm. Is the Internet new or old? (After all the technology dates from the sixties!) Often everything which looks a little like dot.com or sounds modern is assigned to the "New Economy". Such abstract vagueness leads to less meaningful conclusions, which however does not mean that the financial papers are not full of such judgements. We prefer an economic perspective and define "New Economy" businesses as those which demonstrate the absence of a positive cash flow in the foreseeable future while exhibiting a potential for high profit in the distant future. Accordingly "Old Economy" companies are more or less entities which have a constant return but a questionable future.



Source: & Co.

This definition shows special merits due to the structure of the cash flow. On the one hand the typification can be made easily and independently from an assessment of its technical application, on the other hand it is also possible to apply economically consistent valuation methods. For "Old Economy" enterprises, standing in the foreground is the valuation on the basis of the current value of all future cash flows, discounted to the present point in time. We have also described and pointed out how one can arrive at estimates of future cash flows in earlier Investment Commentaries. We have also shown why, on average and over a longer time span, stock market quotations correspond to current value appraisals.

With the labeling of "New Economy" enterprises as profitless entities holding possible vast future potential, is saying at the same time that a current value appraisal will hardly deliver usable results in a narrower meaning. In the discounting process, immediate future cash flows are the most influential; the farther something lies in the future, the lower the current value. Now if there are no earnings in the immediate future, but in the distant future great chances beckon, then the present value would be close to zero.

Therefore a different assessment model must be found for "New Economy" businesses. More and more the view which we expressed about half a year ago is gaining acceptance: (Investment Commentary No. 201): The "New Economy" is most closely related to option price models. We feel it is well worthwhile to delve a little deeper into this topic.

5. The Value of the Freedom to Act

The technological thrust, or perhaps even more apt, is that the economy and the business world has globally realized that the technical revolution has produced an infinite number of possible future opportunities. Which of these opportunities develop into perceptible chances and which of them end up as economic success stories is completely unforeseeable.

The real value, to be able to participate, does not lie (or almost always not) in economic profit as the final conclusion, but rather in the possibility to *always be able to make decisions* along the way. Said in another way: Money is the reward at the end, it is a precipitating factor to take up an idea and follow it. But because there exists rather complete uncertainty as to whether at any point in time the affair has any economic value at all, it is quite unlikely so much so that a lot of money is paid *for it*. The higher the uncertainty about the victorious technologies in the end, the more valuable the possibility is to be able to take part on that path to the future. As it were, the way becomes the goal.

To be able to take part by having the freedom to decide with reference to further technological developments which are at hand at any time: In economics this type of option is called a *real option*. The term "option" always entails an "entitlement to something". There are real options, which touch in a narrower sense on legal matters such as mining rights for oil or other raw materials. Their value is not a measure of future economic profits in the first place, but rather is based on the possibility of eventually being able to begin mining. Therefore mining rights also have a value even when at a specific point in time the actual mining activity lies outside of any economic feasiblity.

Then there are real options with a more palpable character. Who as owner of a mining right keeps drilling equipment ready at hand in the event that mining is allowed to commence, has a tangible real option in his hands.

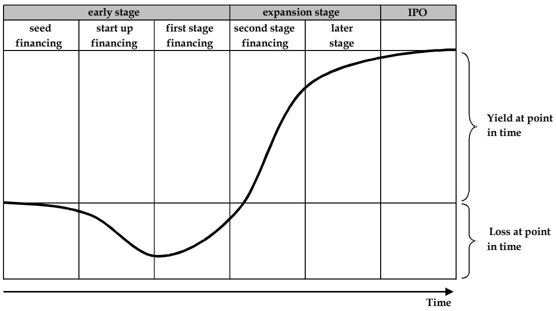
The "New Economy" has a lot in common with mining rights and with tangible real options. Without the concept of real options, the attractiveness of the non-yielding entities cannot be explained. Let us take for example the stylish internet scene. No one would dare to grant it a high strategic purpose. Even when one does not know whether an Internet presence will ever be profitable (which one already is?) – one still takes part and pays a high price for this performance. Why in all the world? Because one wants to keep open one's freedom to act with reference to any future developments. This freedom to act has a measureable monetary economic value.

What is valid for the homepage is true of many other sectors of the technological revolution to an even greater extent. Broadband technology, UMTS-Licenses, Voice-over-IP, biological computers: A technological revolution with so many possible future opportunities calls literally for real options. Because whoever does not have them, will soon look "Old", in the truest meaning of the word.

6. The Problem of Fivefold Death

We are of the opinion that relevant for many "New Economy" enterprises, whatever sector they may be active in, are not in the first place the exorbitant profits which often lie in the distant future, but rather the embedded real option which these enterprises offer in the course of technological change. "New Economy" companies guarantee as living tangible real options that whatever will continue to happen and whatever new opportunities will keep on arising, the connection will not be missed. They can be viewed as sort of an *insurance on future innovation*. The uncertainty about the arrival of future profitability and the long span of time until that event could occur would actually forbid the investment of capital in such enterprises. The possibilities which have been opened up by the businesses over and over again and the decisions adapted to the prevailing circumstances lend them an economic value which every once in a while astounds the observer of the markets. We are dealing here with *premiums.*

Venture Phases and Yield Situations



We now face the problem that a no-win situation represents a special economic challenge. The chart above shows the “history” of a young company in a so-called “venture” sector. Great ideas – little or no income. In the beginning phases of a lifecycle, new capital is needed periodically. Whether capital is made available at any point in time depends upon various internal and external factors. Not every idea nor every business plan, no matter how convincingly it may be presented, guarantees added value for the economy, which it would be prepared to finance as a real option. And not every good idea will be converted into the corresponding quality. A vision can quickly turn into an illusion. During the course of the Nasdaq and the New Market euphoria, much worthlessness benefited from new capital. In the past months the chaff has begun to separate from the wheat. It could also be that quite interesting opportunities suddenly turned out to be useless, because the technological change has already announced the newest innovations. The real option has proven to be worthless. For example: What value does WAP-technology hold in the face of UMTS?

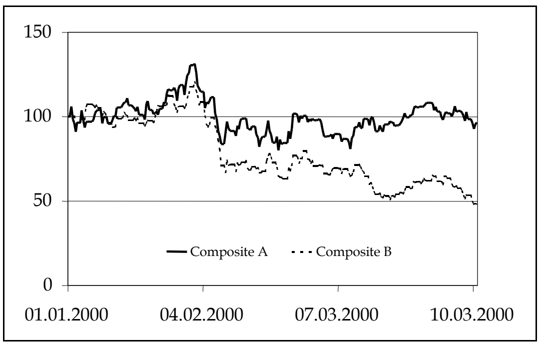
The greatest problem in connection with profitless companies however is doubtlessly described by the *question of liquidity*. Much points to the fact that the availability of capital is not a continuous process. There are times in which money is literally thrown about, and there are times of absolute drought. Then even though in the distance the brightest light is beckoning – there are no funds. It is no wonder that the credit business of banks is one of an extremely cyclical nature. The sacrifice of equity capital will not run any differently.

Here lies the weakness of New Economy enterprises: That they, despite all possible future chances, can die fivefold on the way. It is not without reason that not only small start-ups, but the larger and the largest “New Economy” businesses look with concern at the *Cash Burn Ratio.* Should they fail due to liquidity problems, then also the real options which they embodied are lost. An assessment problem then no longer exists.

7. The Quiet Charm of the Mini-Conglomerate

With the understanding that the Achilles heel of the “New Economy“ lies in the question of liquidity, it should also be taken into consideration that provisions for liquidity must also hold economic value. Because if liquidity does not continuously flow in, then it could be that quite valuable creations will die off which would have survived had times been more generous. Since the Nasdaq crash at the end of last February, we are finding ourselves in such a phase of skeptical restraint.

We have empirically looked into the question of whether liquidity provisions represent an economic value for “New Economy“ entities, and have compared the market valuations of firms with a positive cash flow (and therefore liquidity income) who are in a position to make a profit, with those which are operating with losses or whose returns are declining. The results speak for themselves. Whoever earns money, survives better and more likely much longer. Since the Nasdaq crash, the markets very carefully distinguish how the survival chances of tangible real options stand.



Source: Bloomberg, & Co.

The more successful Composite A consists of five companies Cisco, Lycos, Yahoo, E-bay and Sun Microsystems. They all show a positive cash flows for the semi-annual closings of Summer 2000 and have moreover increased it since December 1999. In the second Composite B, which has suffered about 50% since the beginning of 2000, are made up of the companies E*Trade, At Home, Amazon, Snowball and Quokka Sports. They showed in the same time span negative cash flows as well as a deterioration of their return situations. For the cash flows, we have only taken into consideration the cash flows out of operating activities.

The question now arises as to how it is possible for "new Economy" businesses to obtain liquidity provisions. Do excellent relations to banks or a network of generous investors suffice?

The most obvious solution to this problem exists obviously in achieving the fastest possible *positive return* and to tackle the problem internally so to speak. This stands for production, marketing, sales – often not the strengths of a "New Economy" team. How many successful Internet companies have failed because of logistics problems? How many software producers have tripped over the hurdles of successful sales distribution? Surely whoever is in the position to achieve positive returns will be rewarded, not however due to the probable high earnings, but rather due to the increased probability of the survival of the real option.

If, for example, a company like Think Tools, which is quoted on the Swiss New Market, shows quarterly returns of a few million Francs, and the stock market rejoices not because of this (and generates a market capitalization in billions), but because of to the specific increased probability brought by the positive yield situation that possibly the interesting software Tools could once again make it to practical application.

Whoever cannot provide for one's own liquidity, must organize himself differently. *Venture capital companies* are nothing other than structures which allow liquidity to flow back into the enterprises which they look after. If they are seriously managed, then they achieve added value as such through their function as liquidity donors. The real options which they take care of have a higher probability of survival.

The third possibility lies in the *combination* of "Old" and "New Economy". Production, marketing, sales, administration: These are all "Old Economy" features, with the assumption that in future there will be a higher probability that liquidity will be available. There are a great number of such combinations in small companies, but also large players have also chosen this path. The combination of the media giant Time Warner with the Internet provider AOL is the classic example of a successful union between "Old" and "New Economy". Time Warner delivers the steady returns, AOL the innovation. The combination of Roche and Genentech is not much different.

8. Shades of Gray

Admittedly, it would be lovely and very simple if the sharply-focused company of optimal size and strong regional attachment which is postulated by portfolio theory would also be undisputedly the most economically successful. We have tried to prove that the focusing-idea does not really function with respect to frequently profitless innovations over a long time. A burst in technology as has been occurring for a quite a while, calls for the ability to recognize an ever changing kaleidoscope of new and different opportunities depending on the course of future development. For this numerous innovative as well as profit-meager businesses are needed. Their economic value lies most extensively in their function, that they keep the freedom to act open for future developments. This is at the same time, however, a very poor basis for daily survival. Herein lies the problem of the "New Economy", and this problem has led during the course of this year to large uncertainties on the stock exchanges.

Economic success does not take place in the portfolio-theoretical test tube, but rather must be won on the battlefield under adverse conditions. One of these adverse conditions is the situation that the supply of capital is not delivered by a price mechanism (at which depending on risk a higher or lower price for the capital would result), but rather is represented by a rationing system. Either there are funds or there are no funds. This is a most difficult beginning for a profitless enterprise! It is just this however, that makes up innovation. They provide real options to the economy which are necessary for future development.

The "New Economy" calls for combinations. These guarantee that which the market is not able to supply in satisfactory quantities. The

"Old" subventions the "New" through provision of liquidity. Conglomerates result, which have up to now been doomed to die. That one is aware however of the disadvantages of the conglomerate, as it has validly been proven by portfolio theory, one does not get around using investment decisive considerations to assess the quality of management, the corporate-internal incentive situation, and such. A world comprised of shades of gray demands a fine eye for detail.

Where such a sensorium is not perceptive enough, and we believe that such financial-analytical understanding is only sufficiently developed in exceptional cases, the only thing that remains is for us to grant our highest attention to the *diversification of investments*. This diversification must be balanced sector- and regional-wise. Innovation is not tied to location and cannot also be locked up long-term. On the contrary: Globalization, which has been made possible by modern communication permits the recognition of real options where earlier this would never had been possible. Look at India. Software innovation is taking place there. Consequential diversification among the sectors and world regions: This is the application of the use of shades of gray. One must not be ashamed of it.

9. A Long Postscript

Working with the concept of real options has precipitated some further thoughts which the author – from a Swiss perspective – wishes to express at the conclusion of this Investment Commentary. The question of the guarantee of sufficient freedom to act over the course of time is not only asked in association with the powerful innovative drive with which the financial markets have us held in suspense. The freedom to act is for example also a topic which concerns the designing of our own personal lives.

Repeatedly, it comes to the attention of those in positions of asset management and investment consulting that successful businessmen often shift around astonishing amounts of liquid funds in their own personal portfolios. Liquid funds are synonymous with a minimal return which of course disturbs the advisor. He continually attempts to be finally able to invest these stagnating funds. According to current asset and liability management, these reserves will not be needed in the foreseeable future, thus the investment horizon can be estimated as "long" and consequently, the advisor recommends share investments. He is right. But in spite of this the client remains with his liquidity. Why?

Because most probably implicitly or instinctively, he knows that liquidity fulfills the function of a real option for the entrepreneur, and this allows him over the course of time to always protect his freedom to act under any circumstances. Maintaining his liquidity has the characteristic of being an insurance policy for future necessary decisions. It is completely rational economically to push this cushion of liquid funds along, because the use that the liquid funds provide in the form of freedom to act, far outweighs the opportunistic returns of a shareholding. In this sense one has to rethink once more the all too simple recipes of the allocation of fixed assets.

A second thought concerns the Central Bank's gold reserves. Unexploited capital is being thrown around everywhere. One could invest these funds more profitably, and subsequently, one could dispose of a portion of the gold reserves. Taking into consideration the concept of real options, the assessment of the gold reserves appears perhaps a bit more differentiated. It is thoroughly conceivable for situations in connection with the global financial system, that only in small and independent countries that gold would insure the freedom of their Central Banks to act. Gold in contrast to foreign exchange reserves also functions outside of the finance system. Not that we want to talk the Swiss National Bank into increasing its gold reserves. Everything is a question of measure. However, it certainly is not true that one can measure gold reserves alone by their return (in the past few years in the negative). Rather the real options which they have created have economic value.

The idea that an emergency could arise in which one would be thankful of a sufficient amount of freedom to act has recently been lost in many places. This also applies to the *ultima ratio* in the area of freedom to act of a country and the possibility to employ one's defense forces. Thinking in real options in national security causes trouble because the security in Western Europe over the last 50 years has only increased. Real options, as we have established above, decrease in value the safer the situation. Should we do without because of this? When the comparison is made to the entrepreneur – he would never give away real options out of his hands again. This asks the question simply of how entrepreneurial (in the broadest sense of the word) states and corporations actually feel. The Swiss population will have to make a few decisions on this in the near future.

KH, 23th October 2000