

## The End of National Accounting

### 1. Micropower – the mini power station in your back yard

In these days of exaggeration and overemphasis we can be thankful for the cool British reserve which distinguishes the magazine *The Economist*. Not even a stock market crash, such as in 1987, nor a desert war, such as the one against Saddam Hussein, nor the allegedly imminent climate catastrophe are able to really bring the editors of St. James's Street in London out of their reserve. All the more attentive does the reader become, if the magazine then does once allow itself to subscribe to superlatives. Which is what happened four weeks ago with expressions such as "revolution," "miracle" and "excitement." What was the object of such enthusiasm? The generation of electricity and its distribution. A quite unspectacular subject which, until then, had only occupied honourable politicians in the numerous quantitatively overstuffed supervisory boards of (mostly state-owned or semi-state owned) public utility companies. A subject which, most recently, under the auspices of hesitant liberalisation efforts, begins to occupy an enlarged public, which however, in view of the complex problems posed is often on the brink of overstrain.

The message of *The Economist* is quite simple: all signs of technological development indicate that in only a very few years from now it will be worth-while to produce electricity, so to speak, in the back-yard of your home. To anticipate it immediately would not be tantamount to a gradual change in production situations, but would turn things topsy-turvy. Until recently the law of economies of scale has always dictated the structures of power generation – the bigger the power station, the lower the costs at which it can produce. Merely the losses during power

transport over long distances and naturally their production and maintenance costs imposed limits on these economies of scales. And now the exact opposite in the dimensions of a vacuum cleaner!

Essentially there are three technically different lines along which research is being carried out and the applications of which are being practically forced ahead:

a) The fuel cell transforms hydrogen into electricity by electrolysis means.

b) The micro-turbine produces electricity, as a completely optimised classic generator, by means of natural gas.

c) The solar voltaic cell transforms (free-of-charge) energy from space into electric power. The three different technologies have their specific advantages and disadvantages. For example, the fuel cell suffers from the difficult handling and storage of hydrogen. The micro-turbine is not quite as environmentally friendly as the two other technical solutions (besides electricity, it unavoidably produces CO<sub>2</sub>). The solar voltaic cells are not quite so simple to produce and are limited with regard to their efficiency; moreover, electricity is only generated when there is sufficient natural light. This restricts the use of the application in time and space.

But two advantages are apparently common to all three technologies: firstly, their practical applications are becoming increasingly cheaper, allegedly soon at a level where the private electricity costs will become lower than the purchase of publicly produced electricity from the mains. Secondly, micropower as these technologies are called, is clearly superior to the traditional electricity generation with regards to environmental compatibility. In many cases the semi-state owned or state-owned power stations do not meet the strict new emission standards, namely in the thermic systems, or they conceal unpredictable contingent risks. Neither the (long-term) risks of high coffer-dams in the mountains

nor the unforeseeable risks of nuclear power plants can be completely denied.

Of what does the revolutionary miracle now consist which is meant to make us, together with *The Economist*, wildly enthusiastic? Is it worth dedicating a whole investment commentary to the subject? How does the investor benefit from it at all? The answer is not immediately obvious and therefore has to be deduced step by step. So much in advance: if the thing with micropower in the back-yard of your home becomes true, we will really be faced with profound change in the basis of economic thinking. That such a change in paradigm would influence investment strategies is, however, obvious.

## 2. The unproductive housewife...

Classic macroeconomic attempts, with models of the simple or extended economic cycle, to present in a somewhat comprehensible way the activity of millions and millions of individuals all around the globe every day. Models have the advantage, that we can understand them (depending on their degree of complexity, somewhat more easily or with more difficulty) and the disadvantage, that they are never quite right. The reality is always slightly different, and surprising developments (disavowing the model) are never to be excluded. The usual model of the economic cycle which distinguishes between the producing entrepreneurial side and the consuming households describes the flow of goods from the companies to the households and the flow of money from the latter to the companies. This model has *a priori* some strange characteristics: for example, it commits a gross injustice towards housewives (and of course, respectively also to "house-husbands") who, because they are part of the consuming household side and do not render any directly measurable money-equivalent service, are not productive according to the definitions of the model. The private education of the children, the daily cleaning of the house, the washing and ironing, the cooking are all omitted from National Accounting.

On the other hand, the whole government apparatus is classified in the amount of its expenditure as "productive". Because there is in fact hardly any real demand for most state activities, there are also no market prices. Up to now no better approximation to the quantitative description of the economic activity of the state has been found than

pulling the figures from the state budget. Of course, it is a repulsive idea to our common sense that the parking-fine distributing traffic warden, the construction-preventing building authority and the pestering tax official are supposed to be productive! But that is how macroeconomics works. Even if an official didn't do anything (that is said to happen once a while), he would be productive according to National Accounting. The conclusion is the economic relevance of private work performed in the model is certainly underrated, while the significance of public activities is overrated.

It is no mistake that for what is called simply "economy", the term "National Accounting" is practically used as a synonym. Economic activity is seen to be something communal, i.e. a quasi public event and the public therefore is supposed to bear a certain responsibility for the success of this event, a perception which has its roots in the emergence of the division of labour economy at the beginning of the nineteenth century. Here private life, there work, there capital, and the public as an indispensable means of controlling the whole. This way of looking at things still characterises teaching at the universities and practice in national and supra-national economic policy.

On the basis of the example of "micropower" we now want to show that the perception is out-dated and many of the analyses which orientate themselves to the *national* economic model are in need of renewal.

## 3. ...becomes productive

We have in earlier comments already drawn the attention to the great significance of the capital expenditure on machinery and equipment by predicting the future productivity of the economy. What are capital goods? They can, for example, be new processing centres in industry, they can be laboratory equipment in the pharmaceutical sector, computers in the service sector. They are purchased in order to streamline the productive process. The high level of economic growth in the USA has been in its sustainability, surprising most analysts. However, due to the generous investments in machinery and capital goods over many years, this phenomena was basically predictable. Its long duration (we are now in the tenth year!) is quite easy to explain, given the circumstances that the investments are not

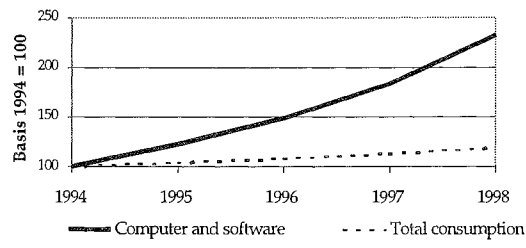
fruitless, but an important implementation factor for the technological thrust of the last few years. The high investments in capital goods put the economy into a position to generate more and a higher-value output per time unit which is synonymous with higher productivity. And no end is in sight.

The significance of such a productivity surge for the economy as a whole and for the individual participant in the economy is underestimated. If an economy in a certain interval is able to produce more and higher valued goods, then it is worth more as a whole, and the individual has (on average, please note) become richer. Therefore we should not be surprised if the Americans consume in a quite carefree way today. On average, they have in fact become considerably richer over the last few years. Attempts at cyclical or monetary explanations for the long-enduring boom phase in the USA have missed the target. For years we have heard it said that we are just coming to the end of the alleged cycle; that the current upswing entails significant inflation risks. The non-occurrence of the catastrophe has become a real trauma for many analysts, as well as for doctrinaire monetarists.

They do not understand nor they want to believe that developments can occur in leaps and we are in fact just about to configure the previous jumping height stratospherically. Why? It is becoming increasingly apparent that the wave of capital expenditure on machinery and equipment has for some time cascaded from the companies to the private side and has triggered some very remarkable changes in the private households. The assumption that private households buy PCs, software and communication tools only for private, consumptive fun, is likely to be even more incorrect than the idea of the unproductive housewife.

With the Internet revolution, millions of households have become small companies. They "produce" in fact not regularly, but perhaps in the evenings and at weekends, and they are clearly part of the value chain and meet a specific demand for services of all conceivable kinds over the Internet. And above all they provide their service, in a similar way to the "unproductive housewife," to a large extent without money-equivalent service in return. Barter situations are common on the Internet; *do ut des* has

Acquisition of computers and software in comparison with overall consumption (figures: USA)



Source: National Bureau of Economic Analysis

the advantage that it is not subject to value-added tax...

With regard to the Internet, what still may appear as a smiled-at trifle in National Accounting, gains a completely new dimension as a result of "micropower." The electricity market is, in all western industrialised countries, one of the very large sectors, perhaps twice as important as the telephone market currently the focus of interest. At the same time, the electricity market with or without liberalisation endeavours, still as a "natural monopoly" is a state domain organised as a cartel and acting as a cartel. "Micropower" now will tackle this monopoly from behind. It will do it by reducing the demand for energy produced publicly and distributed on publicly organised networks, as the private households are in a position to produce electricity themselves at more favourable cost. But not only that; companies such as ABB are working with great intensity on developing network models for "micropower" so that surplus energy also can be passed on to others. Thus, to the weekend productivity over the Internet, electricity generation over the midday period will be added.

#### 4. The new model: clustering autonomy

Such ideas must, in the eyes of representatives of the "public" interest, be horrifying. Even in this domain of public interest and public supply, privatisation will gain the upper hand. As a result a very large area of an extremely popular playing field for public influence will disappear. And the fiscal authorities must also weep. The area of energy policy is exactly where the hunger of the government has most recently discovered new sources. Now it is probable that the development will outdate all concepts based on taxation of energy.

Therefore resistance is to be expected, not at least from the dogmatic environmentalists, who have always sought their panacea in the

public institution and for whom the idea of problem solutions at a subsidiary level is all too often completely alien. But even on the more concrete side opposition is to be expected. State domains never give up their *raison d'être* voluntarily. Thus the possibility of feeding energy from small producers into the grid will meet with stiff resistance from the large producers; the argument of operational safety will be used as a pretext for many feet-dragging tactics.

However, the development can no longer be stopped. What is already a fact in daily Internet operation will be continued via "micropower." Households will find their way back from the strict labour division form of the economy to a new kind of autonomy. Already we can foresee changes in the education sector. In the USA more and more parents are deciding to take care of the schooling of their children themselves. Naturally they use the help of training programs on the Internet, with the involvement of interactive teaching programs and the like. The miserable quality of many public schools in the USA practically forces them to do so.

The new autonomy is not a mediaeval, agricultural autarky, but rather a situational clustering interdependence. If I work in the shop today, tomorrow I will handle things from home on the PC. If today the children go to school by means of the Internet, tomorrow they will be sent to a special course at a training centre. If today I have surplus electricity from my "micropower" generator, tomorrow I will have to purchase electricity as it is my washing day. The cluster autonomy changes not only the economy as such, but it will have to change the perception of what is understood as economy. Public economy has seen its best days. There will now only be micro-economies which of course, from case to case, can be aggregated to sectors, countries, regions, currency areas, but are basically acting individually. Micro-economies, that are individually and situationally networking, are committed to no higher values than to their own.

##### 5. Underestimated revolution

This ongoing process towards subsidiarity (i.e. a shift of the problem solution to a lower social level) is not reflected in the general opinion of the institutional public or in the picture of the institutional public provided by the media. New international conventions

and organisations are developed with the intention to offer allegedly a better handling of global problems. Their progress is limited. Subsidiarity is in fact often declared as a great idea or concept, but seldom transferred into reality. In the last investment commentary (No. 202 of July 13, 2000) we showed how EU-tax policy is hostile to subsidiarity, in the way that wasteful nations within the EU are rewarded and the thrifty are punished. This unfavourable result requires correction at the top political level - and it's all over with subsidiarity. Apart from the tax-system, unnecessary standardisations contribute to make the situation worse. Standard goods were never a pre-requisite for a functioning market. On the contrary, market forces should ensure that a product is offered in the quality and in the diversity as wished by the consumers. With the introduction of a standard length for cucumbers nothing has therefore been gained.

While the political conceptions point in the wrong direction, quasi subcutaneously a revolution is taking place. We have drawn attention to the private productivity forms by means of the Internet. "Micropower" will radically shake up the energy field. Internet schools and universities will challenge the school as a public institution. And who knows, perhaps the miserably expansive public health system also will change within the scope of the possibilities of new (genetic engineering-orientated) forms of therapy towards more private productivity. We are only at the beginning of this revolution - a revolution underestimated in every aspect with regard to its significance.

The investor and observer of economic events are well advised to keep their eyes open. The subcutaneous revolution is causing uncertainty. Let us look at the recent auctioning of UMTS licences in Germany. UMTS is just becoming a necessary and integral part of an even higher user-friendly individual networking capability. One will be able to surf wireless with a laptop in the park. Will the demand for this possibility some day justify the immense amounts which are being paid for the UMTS licences?

In our view, the enormous valuation differences for individual securities on the stock markets do not come purely by chance. Discounts of 30 percent and more in one day in highly liquid securities reveal the aggregated knowledge of the market participants as-

suming something like a revolution. To generate investment-strategic conclusions with such conditions is extremely difficult. Which sector will benefit most from these developments? Is it the business-to-consumer (B2C) suppliers on the Internet? Or will only business-to-business (B2B) be really successful? How do the margins of the producers of big brands develop in the light of B2B and B2C? Looking at the ever increasing demands of software, should your investment policy concentrate on producers and sellers of software programs? If so, on which ones? Or should it be the network specialist? What will the situation be in 10 years for the big public utilities-companies such as Atel, Endesa, RWE, Vivendi? What role do ABB, General Electric and Siemens play? How will subsidiarisation in the health sector affect the pharmaceutical sector? Questions, crucial questions, important questions. One thing is clear: revolutions are seldom pleasant. Among other things they also claim victims.

#### **6. Subsidiarity in one sector already well advanced**

In order to keep the ship more or less on course in this uncertain environment we must consider whether there are sectors of the economy in which the subcutaneous revolution already has staked its course. We believe this is largely already the case in one area: in the finance sector. The area of finance was until, say, 10 years ago still a largely public institution. When re-financing their businesses, the large and smaller companies had to use the lending operations of the banks. The banks procured the necessary funds via the savings of their depositors and savers. Individual wishes or strategies for the savers? An absurd idea! The investment decision took place at the superordinated level, and this superordinated level even deluded itself into thinking it was acting in the public interest. One can simply read the guiding principles of major banks in the eighties.

The ownership of equities, at least on the continent, at that time was distributed only to a limited extent. In the general public, one held at best a few shares only in order to now and then be able to take part as insignificant members of the fatuous voters at an annual meeting of shareholders and, above all, in order to profit from the following cocktail. And thus the compilation of share portfolios was more frequently the result of certain

personal preferences than of explicit strategies.

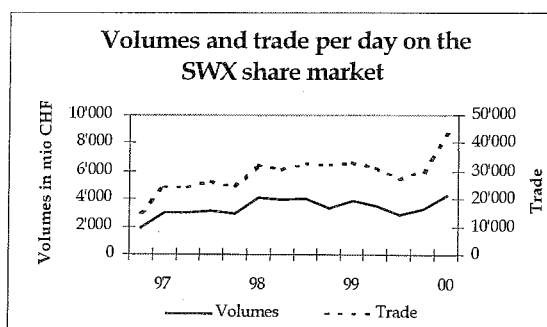
The bond market was at that time completely monopolised. The issuing business operations were firmly in the hands of a few syndicates; the debtors were left with no other alternative than to come to an arrangement with the expensive and low-productive issuers. The public had no other choice than to be satisfied with a small part of the primary market characterised by favouritism and to the subsequently all too often illiquid secondary market. Bonds, once acquired, were normally held until maturity. Only very few thought about re-structuring a portfolio. Interest rate risk management? Absurd idea. In Switzerland, even in the case of the personal mortgage indebtedness until 10 years ago hardly anybody thought about restricting the interest rate risks by means of fixed-rate mortgages.

In the meantime a revolution has taken place. There are almost no more savers who really only save. They invest. Even if they didn't invest directly in shares, they might buy to some extent equity funds and index certificates. The commercial lending operation of the banks has been completely transformed. The "securitisation" has brought irreversible consequences. The re-financing of companies takes place more frequently via the market than earlier. And if it, nevertheless, takes place by means of bank loans, the conditions of the loan follow market prices. But also smaller companies make more and more use of one of the various financial instruments available on the financial market. Bond underwriting operations are thoroughly competitive and characterised by very efficient price determination. Mortgages are today available with a large variety of characteristics.

Economically speaking, two things have happened. Firstly, the consumer in the finance sector has become considerably more independent and agile. Consumers are no longer satisfied with annual general meetings lacking substance and with lean savings interests rates. Consumers demand advice from a financial consultant how their investments and debts are to be structured. Online they easily get an impression of the market tendencies. Further they are also quite capable of intervening themselves in the market via the Internet. They can take allocation decisions hourly or daily; in other words they

can do what earlier took place at a much higher level. That this in fact happens is reflected in the considerable increase in volume and number of transactions carried out on the stock exchanges world-wide (cf. graph).

Secondly, the consequence of this emancipation of the market participants is an enormous increase in efficiency in the financial markets. If the investor doesn't simply put his money in one security, but actively manages the assets, it will mean that the subscriber constantly is re-analysed and re-valued. In the past 10 years the efficiency of capital allocation has increased. Its significance cannot be overrated. Efficient capital allocation forces the companies which need money to take quite different measures and to provide different proofs of performance than before. At any moment a cold valuation by the markets is threatening. This can, in one case or another, have a pushing effect - think for example of Nokia (-21% in one day) or Eli Lilly (-30%). Viewed from a perspective, however, a disciplining is the result. According to the old regime this would never have been conceivable.



Source: SWX; own presentation

The development leap on the financial markets has led to a subsidiarisation of decisions. What earlier used to be done by a few actors takes place today in the portfolios of the individual investors, savers, fellow citizens. Favourable computing capacities and communication equipment have, on the technical side, made this development possible. The subsidiarisation will now, after the finance sector, also enter into other areas of the economy. The revolution goes on.

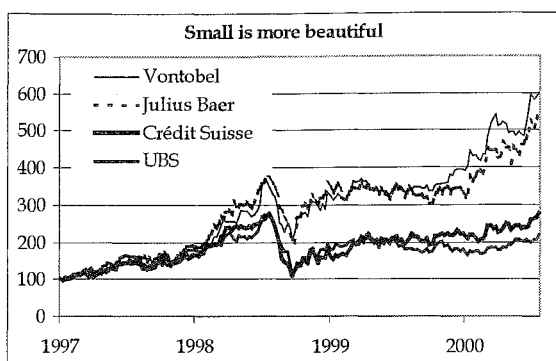
#### 7. Woe betide the indefinable ones

It is worth taking a look at the changes in the structure of the service area of the finance sector. Which companies have successfully adapted to the structural changes, which ones have lost importance and which have disappeared? How do the opportunities and

threats look for the future? And what analogous conclusions can possibly be taken with regard to the subsidiarisation of other economic areas?

The tendency towards securitisation of re-financing of companies and towards linking the bank loans closer to the market has claimed its victims on both sides. In Switzerland there was a partially painful consolidation in the cantonal and regional bank area. The present business results in this sector are still no source of joy. Part of the banks survive only thanks to cross-subsidies from the private banking department. In the nineties the customer side passed through an extremely sharp crisis which today still shows its effects. In the early nineties, the real-estate sector declined by about 40 percent. Since real estate has been the most popular source of common loans often used as collateral for the banks, a good share of the industrial and small and medium-sized company sector of the economy came under pressure. People familiar with the scene today point out new opportunities in the lending business, but on the condition that the whole set of corporate re-financing instruments can be used (i.e. from bank loans to IPOs) and that the extension of loans concentrates on sectors and companies which permit dynamism and market liquidity. A rapidly changing economic environment does not tolerate any structural policy, hence a credit policy orientated towards such criteria must eventually fail.

In the private banking area, the revolution of subsidiarisation has led to a tendency towards the decentralisation of vertical structures. The pipeline from investment banking directly down to the securities account of the investing customer is less and less in demand. All too apparently are the incentives within the vertically integrated organisation directed against the customer. As an emancipated investor, he can today compare conditions, assess price quotations, check subsidiary conditions and the small print. Moreover, he has been enabled much more than before, to assess the quality of advisory services. The trend towards the dissolution of vertical structures will continue, not least under the pressure of hard facts. A comparison of the results of two Swiss providers of apparently high-value investment consulting with the results of vertically largely integrated major banks, shows a clear picture.



Share prices, indexed to beginning of 1997

Source: Bloomberg; own presentation

What goes for the Swiss financing operations, should, *cum grano salis*, also be true for other western economic regions. The savings-and-loan crisis in the USA in the late eighties quite certainly has its parallels to the real estate crisis in Switzerland (and in large areas of Europe). The consolidation process among the commercially active banks around the globe is steadily progressing. The analogy should also be correct for the financial operations. On all the relevant financial markets the business of the suppliers of clean, clearly structured, innovative products proceeds quite successfully. Further, on a worldwide basis the consultants close to the customers also are proving to be the winners of the structural change.

On the other hand, everything which is indefinable is losing importance. Certain major banks submit new merger projects every few months only to break them off again. This betrays a lack of strategic certainty which can hardly be surpassed. If, in the n-th approach, organisations restructure in a way that the customers of consulting services again have to re-define their interface, then this shows a shocking lack of know-how in the corporate management of a service company. If in one year wide-scale financial services are merged under one roof (with all the consequences, e.g. purchase of an insurance company), only to be rejected the next year as a "dubious conception" then even the stock markets rightly question the capabilities of the responsible management.

#### 8. What multi-optionality means in practice

If the reflection about the financial sector is transferred into other sectors of the economy, we can note the following as the supreme principle: the customer of tomorrow, deciding with subsidiarity, wants to be able to

select in every respect. Whether he now purchases commodities over the Internet, or wants to have himself advised by means of Internet platforms, or wants to transfer electricity to the grid as a clustering autonomous electricity producer, or wants to have his children taught by means of the Internet, he will not allow himself to be fobbed off with lean package offers of standard goods or solutions. He hasn't done that lately in the financial sector and he will do it even less in other areas.

Being able to select, what does this mean?

a) It means, for example, that goods and services have to be available in an adequate quality and diversity of prices. The trade-off between price and quality of the product is a part of the subsidiary decision culture and is sought after as such. It is also in no way the case that the clustering autonomous decision maker decides once and for all in favour of a certain trade-off. Rather he wishes to keep his options open situationally in this respect. It would therefore be completely wrong to divide the world into online stock-exchange customers and pure customers of consulting services. The future customer wants to be an online stock market day trader one day and deal with profound investment strategy issues the next day.

b) Being able to select also means, always being able to have access to adequate and current market price information. This means that everything which is not really available online and can't be adjusted online in the future will have few chances. It also means that in a completely natural way arbitrage between price quotes will always take place. The Internet is the ideal auction platform and the auction will penetrate into all economic areas of life. For example, the electricity producer/purchaser will, based on the current price situation, determine his current electricity production policy. Or he may use a program developed by ABB which handles this work for him.

c) Being able to select also means being able to really do it. That means nothing else than that the trusted consultant very close to the customer will gain in all fields. Internet is not the end of the consulting business, on the contrary! The subsidiarity of the decision-making process calls for de-centralised consulting. And because, for reasons of the arbitrage possibilities on the Internet, it must always be assumed that price information

will become known in the long run, consulting with unfair business practices will meet harder times. Consulting and peddling products with excessively high prices from one's own pipeline will disappear as a lucrative combination.

The idea of an economy in which more and more decisions are made at the lower level and which finds its way back to a kind of new autonomy is in many respects not an unpleasant idea. The end of the thinking in National Accounting terms and the national economy as a jointly celebrated happening will, however, also show its effects elsewhere. The social and political implications are unforeseeable. The end of the National Accounting will certainly not be the end of history.

KH, September 4, 2000