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THE A.P.MØLLER SHARES, THE US DOLLAR AND THE PRICE OF OIL

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1. Brief Introduction

The two companies D/S Svendborg and D/S 1912 have for almost a century been the parent companies of the A.P. Møller Group. These companies were founded by Mr. Arnold Peter Møller and his father Captain Peter Mærsk Møller. They were in the beginning entirely into shipping. In 1912, the fleet consisted of 6 vessels.

Much has happened since the company was founded: The A.P. Møller Group has by any standards become the biggest company in Denmark. Moreover, "Svendborg" and "1912" have recently been merged into one company "A.P. Møller – Mærsk A/S". However, as we shall be concerned with the performance of the company also in the past we will repeatedly make reference to the historic parent companies.

As "Svendborg" and "1912" grew bigger they expanded into a number of other businesses. It is common to split the main businesses of the APM Group into three broad categories:

I. Shipping and Offshore Activities

II. Oil and Gas

III. Other Activities

It used to be shipping that dominated, but Oil & Gas and the Associated Companies have certainly increased their importance as measured by their contribution to the APM Group's profits. According to the 2002 statement, the Associated Activities, including Supermarkets, IT etc., are currently making the largest contribution to overall profits. That said, it should be noted that the contribution from the three business activities varies from year to year due to changing economic conditions. Box 1 provides a survey of the different businesses in the APM Group.

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1 Case revised July 21, 2003. I have benefitted from insightful comments from CFO Jørgen Engel on a previous version, which was used at the Maersk International Shipping Program over the years 1997 to 2001. I am of course solely responsible for all views expressed in the paper.

BOX 1 : The A.P. Møller Group

D/S 1912 A/S		D/S Svendborg A/S
50	**Olie- og Gasaktivitet I/S**	50
50	Maersk Olie og Gas	50
50	Danbor	50
50	**Tank- og Ruteskibe I/S**	50
48	Rederiet A.P. Møller	48
48	Maersk Line	48
48	Aktieselsk. Em. Z. Svitzer	48
47	Bermutine Transport	47
48	Odense Staalskibsværft A/S	48
48	A/S Roulunds Fabriker	48
48	Maersk Medical A/S	48
49	Rosti A/S	49
32	A/S Mesan, København	32
48	Maersk A/S	48
48	Mærsk Air A/S	48
48	Mærsk Data A/S	48
25	Dansk Supermarked A/S	25
25	Bilka Lavprisvarehus A/S	25
25	Føtex A/S	25
25	Netto Marked, Århus A/S	25
15	The Maersk Company Can.	15
25	Egyptian Drilling Co.	25
49	APM Geneve S.A.	49

Box 1 shows that the ownership structure of ”Svendborg” and ”1912" vis a vis the three business activities is about the same[2]. Due to the symmetric ownership, underlying changes in business conditions should roughly affect the two shares in the same way[3]. The similarity of the parents explains why we will focus only on one of them; we have chosen to look mainly at ”Svendborg”.

There are three objectives of the case:

- First, the case outlines the share structure of the company and the stock market’s valuation of the shares.

- Secondly, the paper analyzes the overall development of the two share prices and estimates how they have performed relative to the market.

- Thirdly, the paper analyzes the links between the shares and the US Dollar and the Oil Price.

As we will see, the performance of the A.P.M. Group measured both by its earnings and by the return on the shares depends crucially on the value of the US Dollar reflecting that oil is priced in Dollars and that freight rates are also denominated in the world’s most important currency.

In other words, the APM Group is a Dollar business and the share prices are therefore highly sensitive to swings in the Dollar, which of course provides a rationale for studying the key determinants of the Dollar exchange rate.

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2 Since Box 1 was set up, Maersk Medical has been sold.
3 This is not entirely correct but this case ignores more subtle differences between the two shares

2. The APM Group's Share Structure and the Stock Market's Valuation of ”Svendborg” and ”1912"

Table 1 shows the number of shares in “Svendborg” and “1912” and the prices quoted on the stock exchange prior to the merger in June 2003. Moreover, the table also shows that the company has issued both A and B shares. For both types of shares, the face value is DKK 1000. Moreover, shareholders receive the same dividend payments on A and B shares. A shares have, unlike, B shares voting rights. As the right to vote at the annual meeting is valuable one could expect that A shares were more expensive than B shares, but that is not the case, on the contrary. The reason is that the free float is much larger in B shares than in A shares, which means that there is much more trade in B shares. Actively traded shares are attractive from an investor point of view because investors can easily sell or buy such stocks. Moreover, the difference between what you have to pay if you want to buy and what you get if you want to sell (the socalled bid-ask spread) is also generally smaller for highly liquid shares. Liquid shares are therefore often the most expensive shares, whilst less liquid shares trade at a discount. **The share prices quoted June 11, 2003 prior to the merger of the two companies are very high; both ”Svendborg” and ”1912" are among the most expensive shares in the world[4].**

Table 1: Number of Shares and their Prices Prior to the merger of “1912” and “Svendborg”

Type of Shares	Number of Shares	Votes in per cent	Price (DKK) (June 11, 03)	Value (Bill. DKK)
Svendborg A	372.600	100	104.579	38,966
Svendborg B	372.600	0	108.688	40,497
1912 A	540.000	100	70.463	38,050
1912 B	540.000	0	73.301	39,583
Total Stock Market Value				157,096 (24,857 US $)

4 As the exchange rate between the US $ and the Danish Krone was 6.32 on June 11 2003, the price of Sendborg B stood at US $ 17197 while the price of 1912 B was US $ 11598.

But why are these shares so expensive? There are many explanations; the most obvious is the company's high profitability, which of course results in a high demand for the company's shares and - as we know from economics – a high demand is in general associated with a high price.[5] But the high share prices have also something to do with the supply side and the fact that there are not that many shares in the market. A buoyant demand side and a limited number of shares available for the market are bound to lead to high stock prices. To cope with the limited number of shares in the market, the APM has on several occasions made a stock split. In 1998, the APM made a 1:4 stock split, which means that each shareholder received four new shares for one old share. Due to that the price of each share of course fell to one fifth of the previous level. However, as the number of shares increased a five fold, the value of each shareholder's APM portfolio was unchanged after the stock split, and the same applies to the total stockmarket value of the company. In connection with the merger of "Svendborg" and "1912", the APM has again made a split. This time "Svendborg" shareholders received 2 new shares for 1 existing share, which essentially meant that the price of the new A.P. Møller – Mærsk dropped to one third of the Svendborg price in Table 1[6].

Who are the investors in the APM Group? The biggest investors in "Svendborg" and "1912" are the foundations controlled by Mr. Mærsk Mc-Kinney Møller. The foundations have around 57 per cent of the shares in "Svendborg", whereas the four largest pension funds in Denmark possess about 8 per cent of the shares. Other investors, including ordinary investors, have 35 per cent. The foundations controlled by Mr. Møller possess 53 per cent of the shares in "1912", whereas the four largest pension funds have 8 per cent, see Aros (1999). The remaining 39 per cent are in the hands of other investors[7].

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5 It's not all businesses in the APM Group that are profitable: Maersk Air is producing red numbers like many others in the aviation branch.

6 "1912" shareholders received shares in the new company plus a liquid sum of money (DKK 330 per share) that altogether corresponded to the value of a "1912" share prior to the merger.

7 These numbers date back to 1999, but the overall picture has not changed: The APM Group is essentially a family owned business with some external investors.

Table 1 also shows the total stock market value of the APM Group prior to the merger given as the sum of the value of all the shares. Because share prices generally vary substantially over time (from minute to minute, hour to hour, day to day, and week to week) and because the total value of the company is so high, the change in the company's stock market capitalization is often of considerable magnitude.

In any case, the APM Group is the most valuable company in Denmark. The value of the company amounts to more than 20 per cent of the total stock market value of all shares traded at the Copenhagen Stock Exchang. As both the A and B shares of the new A.P. Møller – Mærsk Company will be in the KFX index (encompassing the 20 largest and most liquid shares), the APM Group's importance has actually gone up since the merger (it was only the B shares that entered the KFX index previously). **A.P. Møller – Mærsk A and B shares account for roughly 30 percent of the KFX; a 10 percent increase in the two share prices leads therefore to around a 3 per cent increase in the KFX index.**

In a Scandinavian context, the value of the APM Group is only surpassed by a few others like the Finnish giant Nokia and the Swedish-British pharmaceutical company Astra-Seneca.

3. The Performance of the APM shares since 1982

Let us now look at the performance of "Svendborg B". We begin by taking a long-run view by assuming that we have invested in the share in late 1982 (on December 31). We want to calculate the return over the period 1982 (December 31) to 2003 (June). In the APM case, the key to this is the appreciation of the share price since dividends play only a minor role, cf. below.

Figure 1 (in the Annex) plots the movement of the adjusted "Svendborg B" share price[8]. The chart shows a clear upward trend in the share price from 1982 to 1999 followed by a drop from 2000 to 2002. Since the Fall of 2002, "Svendborg B" has shown a remarkable recovery; from December 28, 2002 (last trading day) to June 11, 2003, the share is up by 52 per cent, which is something we will return to. **Over the whole period 1982 to 2003, the average annual (geometric) increase in the share price amounts to 18,0 per cent.** Box 2 shows how to calculate this number.

BOX 2.

The share price is indexed to be equal to 100 in late 1982; on June 11, 2003 the share price has increased to 3230,50 (corresponds to DKK 108688). Under the reasonable assumption that the share price stays at that level late December 31, 2003 we can then calculate the average annual percentage increase, denoted g, by using the following formula: 100(1+g)(1+g)(1+g)............(1+g) = 3230,50. The equation says that we start out with 100, December 31, 1982. On December 31, 1983 the share price has grown to 100(1+g). On December 31, 1984 the share price has grown to 100(1+g)(1+g) etc. Because there are 21 years, the formula becomes $100(1+g)^{21} = 3230{,}50$. From this equation we obtain $(1+g)^{21} = 32{,}50$. Hence, g = 18,0 %.

Because the two decades are also characterized by inflation, it is useful also to calculate the real increase in "Svendborg B". The result is a more than 12 per cent real appreciation per year. That is by any standards impressive. On top of that, investors have also received dividends, cf. below.

8 Adjusted for stock splits and changes in the nominal value (from DKK 100 to DKK 1000).

The general message is that "Svendborg" has strongly outperformed the Danish stock market, see Figure 1. Over the whole period 1983 to 2002, the average annual price increase on the market is "only" 9,7 per cent relative to the 18 per cent on "Svendborg". Notwithstanding this, it is also important to note that there are several years in which the market outperforms "Svendborg" (in 1985, 1986, 1990, 1994, 1995, 1998, 2000 and in 2001), but the market outperformance is tiny relative to the gains in "Svendborg" in all the other years. By dividing the Svendborg index with the market index we obtain Figure 2, which shows that "Svendborg" has outperformed the market by a factor 4.5 or by 350 per cent.

Figure 3 illustrates the annual percentage changes in "Svendborg" and the market: when the market goes up (down) "Svendborg" also goes up (down), but the percentage change in "Svendborg" is generally much larger than in the market. This shows that Svendborg is a highly volatile stock. The high return on Svendborg (relative to the market) has therefore also to do with risk; investors in APM shares experience large swings in the portfolio value of their investments, and the market will therefore tend to compensate them for this by offering them a higher return than the average return in the market. The excess return on "Svendborg" is therefore to some extent a reflection of risk, but does of course also reflect that the APM has been highly profitable and probably more profitable than what investors had expected.

So far we have only looked at stock prices and disregarded dividends. The total return consists, however, of a component that reflects that companies often (but not always) pay dividends and a component that simply reflects the price change of the stock, which is what we have just been looking at. The annual return on a stock can therefore be written as,

Annual Return in % = Dividend per Share/Price of the share at the beginning of the year + Percentage annual price change

The first component is the dividend yield in per cent. The next component can either be positive (if the price has gone up) or negative (if the price has fallen). In the first case we speak about a capital gain, and in the second about a capital loss. When we add the dividend yield to the capital gain we obtain the total annual return. Often investors have to pay taxes at least on their dividends, but also sometimes on capital gains.

Tax rules differ, however, from country to country and across investors and that is one reason why taxation is often disregarded. If that is the case we use the terminology gross or before tax returns. Earlier it was said that not all companies pay dividends to their shareholders. One obvious reason is that the company cannot afford it. But that is not always the explanation: Microsoft does not pay dividends and there are also other starperformers in the IT sector that do not pay dividends.

The dividend yield on APM shares is also fairly low; in recent years the dividend yield has been below one per cent. Most of the return to the shareholders is therefore coming from capital gains. In the Danish stock market (and in many other markets including the US) the dividend yield has fluctuated between one and two per cent in recent years. The bottom line is therefore that the APM shares also outperform the Danish stock market when we take dividends into account. Moreover, the return on "Svendborg" over the period 1983 to 2002 has also been much higher than the return on bonds, including private bonds (kreditforeningsobligationer) and government bonds.

The APM shares were hit very hard in the period after 1999 characterized by a bursting IT bubble and sharply declining equity prices worldwide. In late December 1999, "Svendborg B" stood at DKK 121600, which is a level that the share has not yet reached in spite of the rally in the share price in the run up to the merger in June, 2003. Investors who purchased "Svendborg" in late 1999 have therefore lost money, whereas investors who came in a bit earlier (in the beginning of 1999) have made a huge profit now given that the share price stood at "only" DKK 62600 in January 1999.

The latter also shows that the share price (almost) doubled in 1999, which to a large extent is due to a soaring oil price – something that benefitted the APM group strongly, cf. below.

4. The APM shares and the Price of Oil

Due to the company's oil and gas activities, earnings depend on the oil price. The APM share prices will therefore also depend on the oil price. When the oil price goes up the revenue from oil production will eventually increase; that will occur after the forward deliveries have been met (at the predetermined forward price). On the cost side there is a bunkers effect, but the increased cost of running the vessels is smaller than the positive revenue effect, and earnings therefore increase in response to higher oil prices.

Figure 4 illustrates the relationship between the share prices and the Brent crude oil price expressed in DKK. **Obviously, there is a close connection between the oil price and the market's pricing of the two shares. In general, increasing (falling) oil prices leads to rising (falling) share prices.**

Financial analysts try to figure out the exact quantitative relationship between the share price and explanatory factors by doing regression analysis, that is, they try to explain the movement in the share prices by the oil price, the US Dollar and ”other factors”. The problem with this is that there are so many ”other factors ” that it is impossible to take all of them into account, and due to that one is bound to miss out on some of the factors. Due to that, analysts' regression analyses do often give biased (incorrect) results, which means that one should be cautious in relying too much on what analysts are reporting. However, with this qualification in mind it is of some interest to know what market analysts think is the exact connection between the price of oil and the share prices. **The estimate by Aros (March, 1999) suggests that the elasticity between the share prices and the price of oil is around 0.6. Taken at face value that means that a 10 per cent increase in the price of Brent crude oil increases the value of the shares by 6 per cent according to Aros.**

If we pursue this line of thought further we can also estimate how much of the price increases on the shares in 1999 that are due to the rise in the oil price. In 1999, “Svendborg B” increased by 91 per cent, see Figure 3. The price of Brent crude oil went up by 142 per cent. By using the elasticity estimate due to Aros, it follows that the share price should increase by 0.6 times 142 per cent, that is, by 85 per cent. However, as mentioned earlier such a calculation is subject to uncertainty. My own research into this issue reveals that the pure oil-price effect (not mixed up with a Dollar effect) is rather unstable and probably smaller than the estimate suggested by Aros. However, if the company continues to expand so much into the oil business, the estimate might at a future date be more to the point. **In any case, it remains safe to conclude that the hike in the price of oil in 1999 is an important explanation of the enormous rise in the APM shares in this year.**

The price of oil depends on OPEC's price and production policy and on other oil producers' behaviour, but also on the demand for oil. The latter depends crucially on the overall macroeconomic situation. High growth in the US, in Europe and Asia tends to lead to a high demand for energy and therefore to an increasing oil price. **The booming world economy in the late 1990s and in early 2000 is therefore a key factor in explaining the soaring oil price. The overall macroeconomic situation in the world economy has therefore important bearings for the APM group through the development of the price of oil.**

The world economy also influences the APM group through freight rates and through the volume of trade. Thus, the better the countries of the world are performing, the more they trade with each other and the higher is the demand for shipping and transport services. Moreover, world trade and transportation has actually grown much faster than world GDP since the 1960s reflecting the different rounds of trade liberalizations and the huge advances in communication and transportation, which of course helps to explain the high performance of the APM Group and the impressive trend in its share prices.

In the next section we turn to yet another "macrofactor" which is of crucial importance for the APM share prices; that is the US Dollar, which plays a key role for the cyclical fluctuations of "Svendborg" and "1912" but not for the trend as the exchange rate DKK-US Dollar is basically trendless.

5. The APM share prices and the US Dollar

Figure 5 shows a strong graphical relationship between the US Dollar and the APM shares.
The strong effect of the Dollar on "Svendborg" works through the effect on freight rates and oil. Thus, a high Dollar means high freight rates/earnings when measured in Danish kroner. Given that the oil price is also set in Dollars, a high Dollar also increases profits when measured in DKK. Because the APM shares are denominated in DKK and traded in Copenhagen, a strong Dollar is therefore likely to lead to higher APM share prices in DKK.

This effect is to some extent offset by higher interest payments on loans denominated in US Dollars and on an appreciated Dollar debt, but this effect is obviously of less importance even though the APM Group tries to hedge against the Dollar by also having some of its expenses in Dollars. **The net-effect of a higher Dollar is therefore good news to Danish APM investors, but will of course be of much less importance to American investors.**

The close relationship between the Dollar and the share price invites to a further analysis of this issue. In particular, we would like to estimate the quantitative relationship. Box 3 gives details.

BOX 3.

For the reasons already discussed it is not an easy task to get an estimate we can rely on. In the following we assume that the Svendborg share price is determined by the price of oil, the Dollar, a constant and a time trend that allows for the possibility that the share price moves (increases or declines) in a way that can be described by a time trend. The first thing we therefore have to find out is whether these variables form a stable relationship, that is, a relationship that we may believe in. To put this in a more direct way we ask whether the Dollar, the price of oil (and the constant and the trend) can give a stable and reliable explanation of the longer run movement of Svendborg B ? The answer to this question is obtained by using cointegration analysis. Our statistical analysis shows that the afore-mentioned variables do cointegrate, that is, form a fairly stable relationship even at the 5 per cent significance level, but the estimated coefficients are unfortunately time varying. By examining different sample periods we find that the elasticity between Svendborg B and the exchange rate (between the Danish Krone and the US Dollar) is in the broad interval 1,5 to 2,5. It is important to emphasize that this is the elasticity under the assumption that there is a fairly long lasting change in the exchange rate. A temporary change in the exchange rate will have a smaller effect.

The outcome of the statistical analysis is that the elasticity between "Svendborg B" and the exchange rate is in the interval 1,5 to 2,5. The interpretation of the estimated interval is that a fairly long lasting 10 per cent rise in the value of the Dollar will increase the price of Svendborg B (and the other APM shares) by something like 15 to 25 per cent.

In spite of the difficulty of coming up with a precise number, the analysis shows how important the US Dollar is for the APM share prices.

6. The role of other factors and news

As noted previously there are many factors, including news, that influence share prices. In general, when stock markets get new information, share prices adjust to the new situation. On August 28, 2002, the APM Group revealed for the first time its half year profits (for H1 2002), which for the whole Group came as a positive surprise to the market, according to Financial Times. Moreover, the group also revealed for the first time the market value of shares in outside companies; previously these shares were valued at the original purchase price (book value). The new information showed that the wealth of the APM Group is much higher than previously estimated. In response to the good news, share prices jumped by more than 15 per cent. In Fall 2002, the company also announced an upcoming merger of "Svendborg" and "1912", which was implemented in June 2003. As this has made the new share "A.P. Møller – Mærsk" a heavyweighter and hence of importance to worldwide indeces, this move may also be of some importance in explaining the strong recovery of the share, which has taken place in spite of a weakening of the US Dollar.

7. Conclusion

This case has examined the stock market performance of the APM shares since the beginning of the 1980s. The results show that the APM Group has served its shareholders very well indeed.

Over the whole period from December 1982 to June 2003, the average annual return is around 18 per cent, which is a high return by any standards and almost twice the return on all shares traded at the Copenhagen Stock Exchange.

The APM shares are highly volatile and investors therefore experience large ups and downs in the value of their APM portfolio, which to some extent explains the high return but only to some extent as the APM Group has also a record for surprising the market with better than expected earnings or higher than expected asset values etc.

The high volatility of the share prices is to some extent due to a high volatility of the US Dollar, which is of key importance to the company given that freight rates and oil are priced in Dollars. Due to the increasing importance of the oil business, the oil price has also a clear statistical effect on the APM share prices and the (almost) doubling of the share price in 1999 is to a large extent driven by a soaring oil price. But there are of course many other factors that play a role for the development of the APM shares.

The recent rally in "Svendborg" and "1912", up by more than 50 per cent from August 2002 to June 2003, illustrates the importance of some of these other factors: the new accounting legislation in Denmark that led to a revealation of a better asset position than previously known **(an "inverse-Enron")** has probably played a role for the rally as has the announcement of the merger of "1912" and "Svendborg", which is likely to increase foreign investors' appetite in spite of the outstanding transparency and reporting issues. Notwithstanding these issues, the APM has over a long period strongly outperformed the Danish stock market.

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ANNEX

Table 2: Number of A.P. Møller - Mærsk shares and their prices following the merger in June 2003

Types of Shares	Number of shares	Votes in per cent	Price (DKK) (July 1, 03)	Value (Bill DKK)
AP Møller - Mærsk A	2.197.800	100	34.500	75,824
AP Møller - Mærsk B	2.197.800	0	35.500	78,022
Total stock market value DKK				153,846
Total stock market value USD				23,432
DKK/100USD on 1 July 2003	656,57			

Figure 1. Svendborg B and the Market

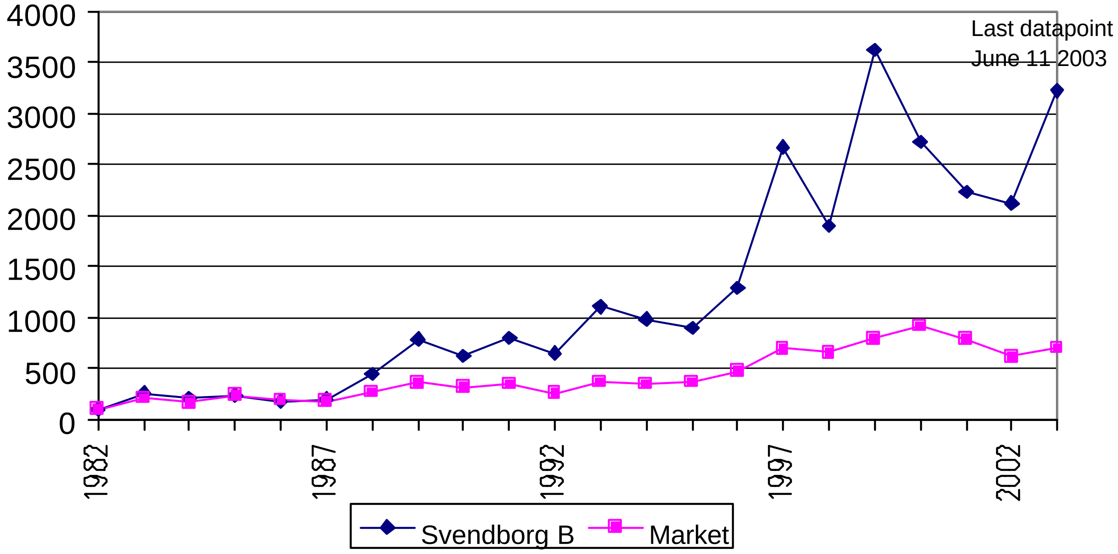

Figure 2. Svendborg B relative to Market

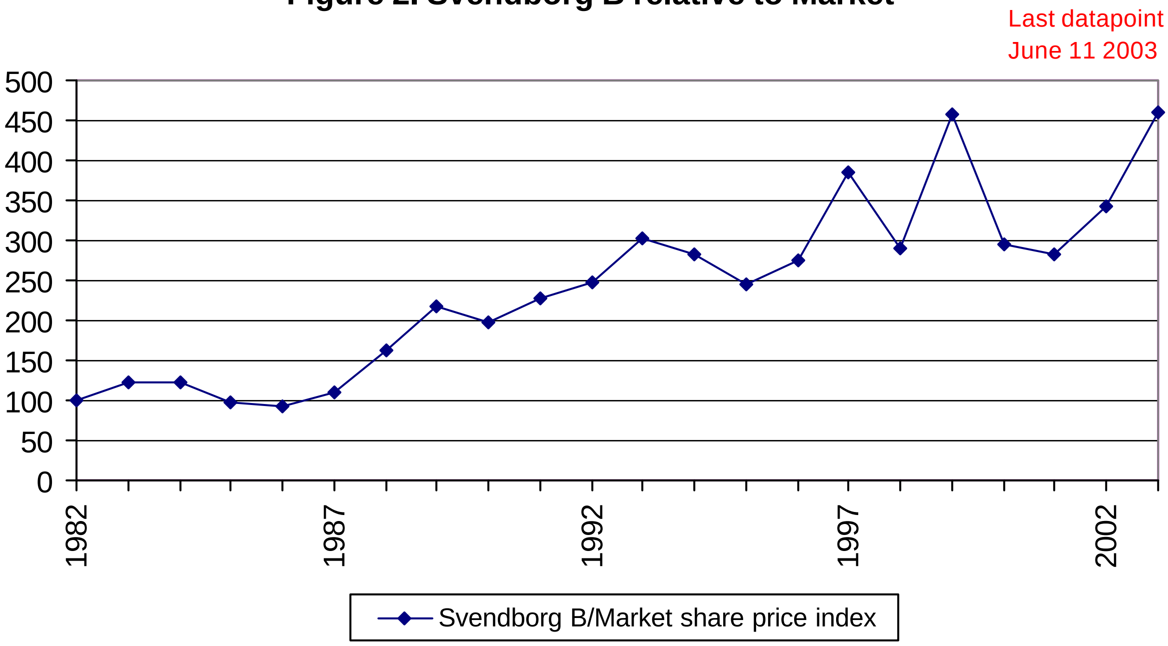

Figure 3. Percentage change in Svendborg B and the Market

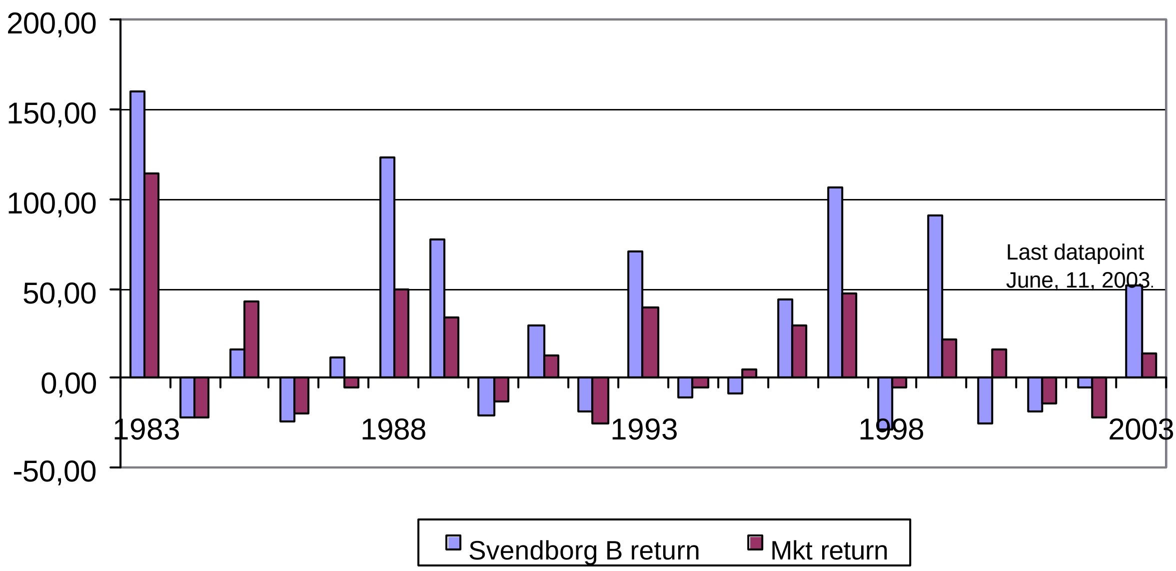

Figure 4. APM Stock Prices and the Oil Price, 1992 (1) - 1999 (12)

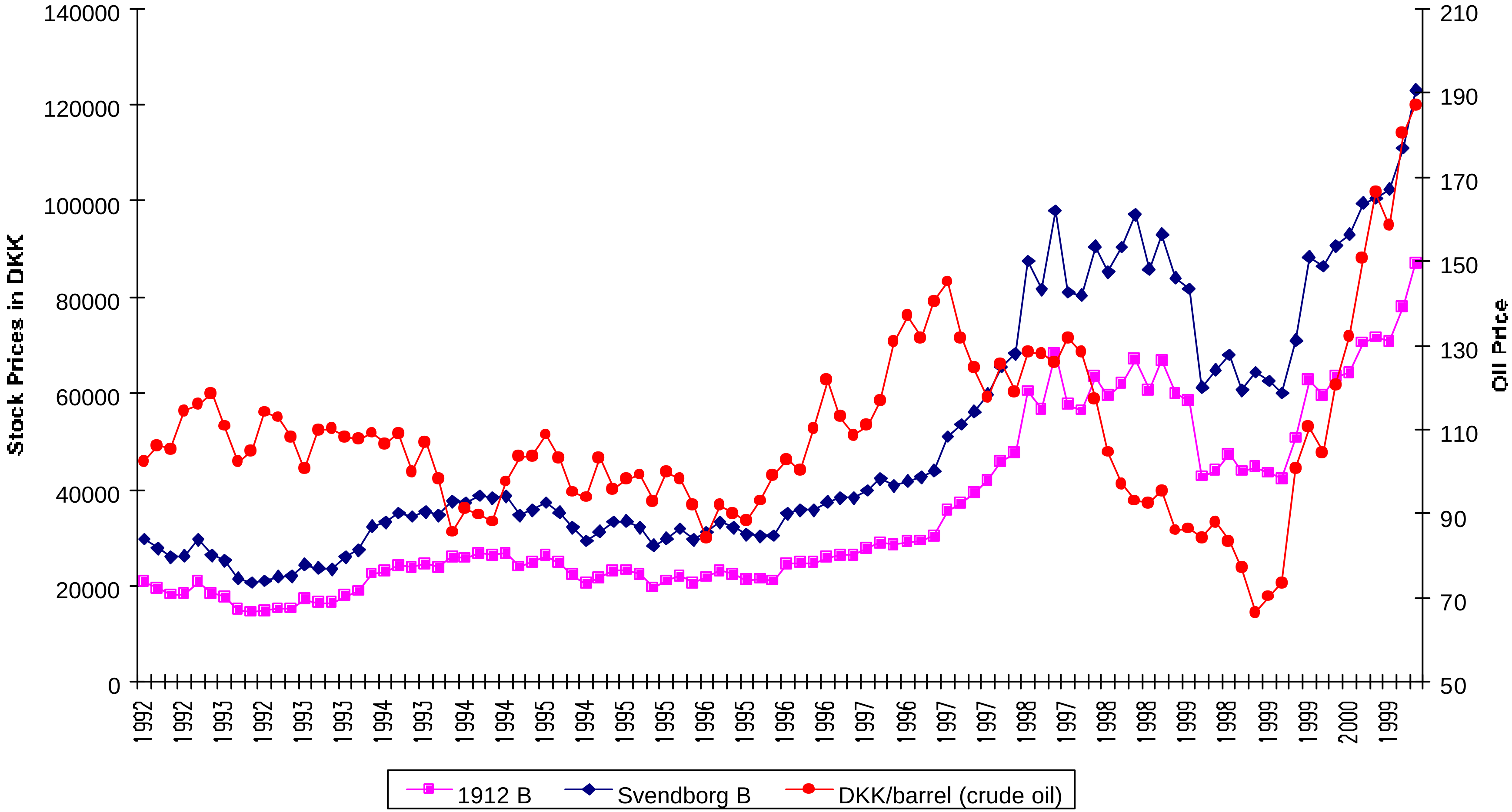

Figure 5. APM Stock Prices and the US Dollar, 1992 (1) - 1999 (12)