

PARTNER LEASING IN SWEDEN: A CASE STUDY IN FINANCIAL INNOVATION AND RE-REGULATION*

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Partner leasing is a form of financial leasing which is driven primarily by tax considerations. We discuss how partner leasing flourished in Sweden as a financial innovation in response to particular tax rules around 1983, and how the authorities attempted to eliminate it. Specific reference is made to the Tjädern case, an authentic and sophisticated piece of financial engineering. The lowering of the corporate income tax rate through the 1991 tax reform and the subsequent fall in interest rates seem to have made partner leasing relatively uninteresting today as a corporate tax planning device. (JEL G28, H25, H26)

1. Introduction

Financial leasing is a well-known source of financing for investments in equipment and machinery. *Partner leasing* is the Swedish name for taxed-based financial leasing. The general idea is that the partner company, being in a tax-paying position, acquires some piece of equipment to lease out and reduces taxes through depreciation charges. The latter are typically greater than the lease payments to begin with. Partner leasing started in Sweden towards the end of the 1970's and became very important

during the 1980's. It comes rather close to tax-transfer leasing in the US.

This paper is intended as a case study in innovative financial engineering and subsequent counter-measures taken by the authorities. Hence, it belongs to a reasonably large literature on financial innovation (see, e. g., Finnerty 1988, Merton 1992, Miller 1986, Ross 1989, and Van Horne 1985). Our main argument is that partner leasing in Sweden was a financial innovation almost entirely driven by tax considerations and regulations of the financial industry. Consequently, partner leasing is almost a perfect illustration of a well-known statement by Merton Miller: "The major impulses to successful financial innovations over the past twenty years have come ... from regulations and taxes" (Miller 1986, p. 460). A reduction in attractiveness of partner leasing, which was

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desirable according to the authorities, hence required changes in tax provisions. In the end, the fall in interest rates has also helped.

Our paper is organized as follows. Section 2 gives a brief overview of the development of leasing, finance companies (the main promoters of partner leasing), and partner leasing. Section 3 is a short summary of the corporate tax system in Sweden prior to the 1991 tax reform. Sections 4, 5, and 6 discuss one particular partner lease, pertaining to the limited partnership Tjädern. The Tjädern lease, a highly optimized piece of financial engineering, is typical of numerous similar schemes in the beginning of the 1980's. Section 4 traces out the cash flows of that lease to the parties concerned, and Section 5 tries to estimate the associated tax arbitrage gains. Section 6 discusses the tax asymmetries underlying the Tjädern case. Section 7 describes the reactions by the tax and other authorities to partner leasing, again with specific reference to Tjädern. The ultimate reaction (provoked not only by partner leasing) was the 1991 tax reform. Mainly as a consequence of a lower corporate income tax rate after the 1991 tax reform and the subsequent fall in interest rates, partner leasing no longer appears very attractive as a corporate tax planning device. Section 8 contains brief concluding remarks on the effects of partner leasing for society as a whole.

Our discussion of Tjädern lease is similar in some respects to the discussion of tax-transfer leasing in General Electric by Stickney, Weil and Wolfson (1983). Finnerty 1985 is another case study of financial innovation that is somewhat similar to this paper. Tax advantages of leasing are discussed in text books as well as in numerous articles (see, e. g., Brealey and Myers 1996, pp. 753–754; Heaton 1986; Loevenstein and McClure 1988; Smith and Wake-man 1985).

2. Leasing, finance companies, and the development of partner leasing

Leasing was introduced in Sweden in the mid 1960's. It became important as a source of finance for small and medium-sized companies,

in particular, during the 1970's. In that decade, many companies experienced economic difficulties. Solidity (the equity to assets ratio) went down, and the financial strength was often too limited to take on more debt. Many companies had insufficient cash flow as well. Small and medium-sized companies were not able to raise capital in the stock market, since the latter could only accommodate larger companies.

Leasing turned out to be a partial solution to the financing problems of many companies. Lease contracts were offered by a new category of financial institutions, the finance companies. These companies were not bound by regulations and credit limits in the 1960's and 1970's, unlike banks and other credit institutes. Leasing eventually spread to larger companies as well. Typical leasing objects were industrial machines, computers, cars, and excavators. World Leasing Yearbook 1988 (p. 237) reported that leasing companies accounted for some 20% of all investment in machinery and similar products in Sweden (cf. Green 1985; Green 1987; SOU 1981:95, pp. 74–98).

Finance companies started in Sweden during the 1960's and expanded rapidly during the following decades. Financial leasing very soon became one of their principal forms of finance. Other important services provided include promissory note loans, instalment credit, credit cards, and factoring (cf. SOU 1977:97; Ingves 1982; Biljer 1985; Hörngren, Viotti, Myhrman, and Eliasson 1987; and SOU 1988:29, Part 1). There are three kinds of finance companies: independent, bank-owned, and supplier-owned (a company in the latter category specializes in financing purchases of the products of the supplier in question, e. g., cars). Finance companies raised long-term capital mainly through parent companies and banks. Short-term capital was provided by business firms, pension funds, and various other organizations (e. g., labor market organizations). With an increasingly developed money market, the larger finance companies could issue negotiable money market certificates. After August 1, 1991, finance companies are permitted to issue bonds (World Leasing Yearbook 1992, p. 314).

As a group, finance companies did rather well until around 1988, and the number of reg-

istered such companies reached almost 300 in that year. One reason for this success is that finance companies, although not totally unregulated, were not subject to the same regulations and credit limits as banks. They could hence often provide financing, for instance through leasing, when banks were not able to do so. At the same time, finance companies could raise money at borrowing rates which were kept down by those same regulations (Olsson 1984, pp. 113–114).

As the banks were deregulated towards the end of the 1980's, they reclaimed some of the business which they had lost to the finance companies during the previous 15 years. In particular, banks stopped buying money market certificates issued by finance companies. At the same time, certain finance companies became overextended in lending related to real estate (cf. *Affärsvärlden* 36/1992, p. 20). As a group, finance companies were less successful towards the end of the 1980's, and a number of them folded (some of which in highly publicized bankruptcies).

Partner leasing started around 1977 – 1978 in one enterprising finance company called Independent Leasing. As indicated by its name, this particular finance company was independent. It generated large depreciation charges from its financial leasing activities, as well as various investment allowances, in excess of what was needed to eliminate taxes. Since it did not belong to a company group, it could not receive group contributions (*koncernbidrag*) from other companies to exhaust all of its deductions (a group contribution is pre-tax income which is shifted from one member of the group to another, tax-deductible in the former company and taxable in the latter). The way out of this impasse was to find outside partners with excess taxable incomes that could benefit from the depreciation charges on objects leased. From the very beginning, partner leasing was thus driven by tax considerations, but partly also by a need for off-balance sheet funding.

A powerful tax incentive for partner leasing was introduced in 1982. During 1982 and 1983, Swedish companies could obtain a special investment allowance of 10% of the acquisition cost of new equipment. This allowance was

linked to the settlement of Value Added Tax (VAT) and could thus be quickly reclaimed from the government by the company undertaking the acquisition. This means that only companies which were registered for VAT (i. e., registered for reclaiming VAT on purchases and delivering VAT on sales) could benefit from the investment allowance. Banks and insurance companies did not belong to this category of companies, nor did counties and municipalities. At the same time, it was stated in the rules for this allowance that it should be claimed by the user of the equipment in case of a lease with a contract length of three years or more, if the lessor was a finance company. Consequently, banks and insurance companies, among others, were excluded from the VAT-linked investment allowance, whether through leasing or outright purchase.

Again, the way out of the impasse was to insert partners. This obvious tax arbitrage possibility marked the beginning of partner leasing on a large scale. A number of finance companies, independent as well as bank-owned, now went into the partner leasing business, increasingly acting as brokers, packagers, and providers of financing in between potential partners and lessees.

A development similar to partner leasing took place in the latter half of the 1980's, when certain large industrial corporations transformed their finance departments into *in-house banks*, taking on new activities such as leasing. By leasing rather than selling their own output products, companies could defer profit recognition on sales and generate tax-deductible depreciation charges. Certain companies went further and started leasing equipment manufactured by other companies as well, in effect organizing partner leases for themselves (cf. *SOU* 1988:29, Part 2, p. 141; *Affärsvärlden* 36/1990, pp. 24 and 80–83). A number of large corporations in good financial positions are now the owners of airplanes, ships, locomotives, and other heavy equipment. These pieces of equipment are leased, often to foreign users (cf. Cronstedt, Gustafsson, and Lindblad 1988 on this source of financing for non-Swedish airlines).

Partner leasing has not been limited to the

private sector of the economy. The *national government* has sold several state icebreakers as partner lease objects. Similarly, the state railways have sold locomotives and high-speed trains as partner lease objects to foreign companies (Affärsvärlden 19/1994, p. 22; Affärsvärlden 37/1996, p. 13). In the 1980's, *counties and municipalities* acquired a great deal of equipment, e. g., for hospitals, through partner leasing.

Precise data on the volume of partner leasing in Sweden at different points in time are not available. One informed observer (the managing director of the Swedish Association of Finance Houses; Finansbolagens förening) has estimated that the volume of partner leasing at the end of the 1980's was about the same as that of regular financial leasing (Finanstidningen September 12, 1990, p. 11).

3. Aspects of the corporate tax system in Sweden during the 1980's

The following discussion pertains initially to limited liability companies (aktiebolag). Tax rules for partnerships and limited partnerships (handelsbolag and kommanditbolag) are discussed at the end of this section.

Until 1984, companies paid a *municipal income tax*, finally averaging around 30% of taxable income. The previous year's municipal income tax was deductible from taxable income in computing the state tax in the following year. The *state tax* varied between 32% and 52% until the 1991 tax reform set it to 30% (now 28%).

Between 1984 and 1990, there was a *profit-sharing tax*. This tax was computed according to a rather complex model (including certain transfers to untaxed reserves and adjustment for inflation). The tax rate was 20% on the amount assessed, deductible in computing next year's state tax. In 1989 there was a *special profit tax* as well of 15% (not deductible) on a taxable amount assessed in the same fashion as the amount underlying the profit-sharing tax.

Companies could defer paying taxes by carrying forward untaxed reserves. *Inventories* (i. e., stock-in-trade) could until 1984 be written down to 40% and after that to 50% of the low-

est of acquisition or replacement values. Write-down of inventories is highly restricted after the 1991 tax reform.

Allocating to (voluntary) *investment reserves* (investeringsfonder) was another very important deferral option. Such an allocation could be at most 50% of adjusted pre-tax profit, but the company had to deposit a certain percentage (gradually augmented from 50% to 100%) of the allocation into a non-interest bearing account with the Bank of Sweden. When investing in machinery or buildings, the company could reclaim the deposit and write down the investment against the reserve, without any impact on taxes. Except for a "free sector", utilization of an investment reserve required the consent of the authorities. Investment reserves were abolished after the 1991 tax reform.

Compulsory investment reserves, with varying names and purposes, were imposed three times during the first half of the 1980's. Allocations to these reserves varied between 10% and 25% of adjusted pre-tax profits. The compulsory investment reserves functioned roughly like the voluntary ones, but the mandatory deposits amounted to 100% of the allocations. If not used for investments as intended, the allocations were subsequently taxed, and the deposit money released.

Two types of *investment allowances* were available at the beginning of the 1980's. The first type, available in late 1980 and 1981, was a deduction from taxable income of 20% of the cost of new machinery or equipment. The second type of investment allowance (actually, a direct subsidy) was the VAT-linked special investment allowance described earlier, in Section 2.

Further, we mention the rules for *fiscal depreciation of machinery and equipment*. In any given year, a company may deduct depreciation charges amounting to 30% on a declining balance basis. Alternatively, it may write down the value of each piece of machinery to the acquisition value minus 20% for each year of service. For an individual piece of machinery, it is hence optimal to depreciate according to the 30% rule during the first three years and the 20% rule during the following two. The item in question will then be depreciated in five years,

the remaining value after each subsequent year being 70%, 49%, 34.3%, 20%, and 0% of the original. The choice between the 30% and 20% rules must be the same for all items within a company. This poses a limit to the feasibility of an optimal depreciation sequence for an individual item. The company is allowed to switch between the 30% and 20% rules from one year to the next, as long as the chosen rule is simultaneously applied to all items of machinery and equipment. The timing of an acquisition *within* a fiscal year does not matter for depreciation purposes. These rules for depreciation have been valid for decades and are still applicable after the 1991 tax reform.

As suggested in Section 2, a *group contribution* makes it possible to shift pre-tax income from one member of a company group to another. Finally, before the 1991 tax reform, losses in limited liability companies could be *carried forward* for at most 10 years. After the tax reform, losses can be carried forward indefinitely.

Two conclusions emerge. In the first place, there must have been a great deal of tax uncertainty, as witnessed by a number of sudden and unexpected changes in tax rates, types of taxes, allowances, etc. during this decade. In addition, companies could often not know in advance when consent to utilize investment reserves would be given. Tax uncertainty is often ignored in corporate finance text books. Sweden in the 1980's is one case where such ignorance may have been a dangerous oversimplification.

In the second place, the nominal corporate tax rate was very high. In the latter half of the 1980's, it approached 60% (state tax of 52% plus the profit-sharing tax of nominally 20%; but the effective rate of the latter was normally only around 5% according to Lodin, Lindencrona, Melz, and Silfverberg 1990, p. 288). Taxes actually paid were much lower, though. For instance, it is reported in the official inquiry on corporate tax reform (SOU 1989:34, Part 1 pp. 437–451) that effective tax rates (taxes as a percentage of profits before allocations and other tax-reducing measures) were typically less than 20% between 1979 and 1986. Leasing transactions constituted one mechanism for attaining

such low effective tax rates.

Since (limited) partnerships were often used for tax planning through partner leasing, for instance in the Tjädern case, a brief discussion of tax provisions relevant for partnerships is also called for. Although a partnership is a legal entity, it is not liable to pay income tax. Rather, income tax on the operations is paid by the owners. Even so, taxable income on the operations of a partnership is assessed in principle in the same manner as in a limited liability company. For instance, the depreciation rules are the same. Certain elements of the tax system for limited liability companies in Sweden in the 1980's did not apply to partnerships, however, for instance investment reserves.

The taxable income or loss from the operations of a partnership was divided among the partnership owners in accordance with the partnership agreement. Taxable income or loss could be rather freely distributed, irrespective of the pro rata ownership. The tax authorities as a rule accepted partnership agreements and their tax consequences. Hence, tax losses from a partnership could earlier be used by partnership owners to offset taxable income from other sources. Moreover, previous tax losses of this kind did not reduce the acquisition value of a partnership share when sold. Consequently, partnership owners could benefit from tax losses twice, in the first place as deductions against other taxable income, and secondly as tax-deductible capital losses when the shares were sold for less than the acquisition values.

From 1988 and onwards, tax provisions regarding (limited) partnerships have been tightened up considerably, especially as regards natural persons as owners. Tax losses which have already been taken now reduce the acquisition value of a share in a partnership. Only in exceptional cases can natural persons use losses from partnerships to reduce other taxable income.

4. Anatomy of a partner lease: The Tjädern case

We will now describe one particular partner leasing contract (or more appropriately, a

scheme, since there were several contracts) which was signed in 1983. The partner is Tjädern, a limited partnership. The Tjädern case is interesting since it was taken to the tax courts (cf. Section 7 below). Our discussion of the case is based on a tax audit memorandum and memos to the courts (cf. also RSV rapport 1985:8 from the National Tax Board). The Tjädern case is fairly typical of partner lease schemes around 1982 and 1983 where (limited) partnerships were involved. In fact, one of the individuals involved in Tjädern has informed us that he set up numerous similar schemes during that period. In what follows, all monetary amounts are in SEK (or in millions of SEK, as indicated).

Sundsvallsbanken (a regional bank which became part of what is today Nordbanken) wanted to acquire a computer from IBM in 1983. The purchase price was 10,289,824, VAT not included, or 12,703,817 after inclusion of 23.46% VAT. Sundsvallsbanken, like other banks, was not registered for paying VAT and would hence have had to pay the full purchase price including VAT, if it had chosen to buy the computer itself. For the same reason, it could not have taken advantage of the VAT linked investment allowance which was available in 1982 and 1983; cf. Section 2 above.

Sundsvallsbanken arranged with Banco Finans (a finance company, from now on referred to simply as Banco) to lease the computer. Tjädern was designated as the lessor, so the computer was initially purchased by Banco but then resold to Tjädern.

In what follows, all cash flow consequences are assumed to occur on February 1, May 1, August 1, or November 1 of each year. This may involve a slight adjustment forwards or backwards of some of those consequences. The consequences to *Sundsvallsbanken* are displayed in Table 1: On November 1, 1983, and on 19 subsequent dates with three-month intervals, Sundsvallsbanken would pay a quarterly lease amount of 647,895, VAT of 123,114 included. In addition, Sundsvallsbanken would buy the computer from Tjädern on November 1, 1988, at a price of one percent of its original price, i. e. 127,038 (VAT of 24,140 included). In leasing, Sundsvallsbanken avoided paying the price of 12,703,817. The cash flow conse-

Table 1: Cash flow consequences to Sundsvallsbanken

		Avoided purchase	Lease payments and final purchase	Total consequences
1.	1 Nov. 1983	12 703 817	-647 895	12 055 922
2.	1 Feb. 1984		-647 895	-647 895
3.	1 May 1984		-647 895	-647 895
4.	1 August 1984		-647 895	-647 895
5.	1 Nov. 1984		-647 895	-647 895
6.	1 Feb. 1985		-647 895	-647 895
7.	1 May 1985		-647 895	-647 895
8.	1 August 1985		-647 895	-647 895
9.	1 Nov. 1985		-647 895	-647 895
10.	1 Feb. 1986		-647 895	-647 895
11.	1 May 1986		-647 895	-647 895
12.	1 August 1986		-647 895	-647 895
13.	1 Nov. 1986		-647 895	-647 895
14.	1 Feb. 1987		-647 895	-647 895
15.	1 May 1987		-647 895	-647 895
16.	1 August 1987		-647 895	-647 895
17.	1 Nov. 1987		-647 895	-647 895
18.	1 Feb. 1988		-647 895	-647 895
19.	1 May 1988		-647 895	-647 895
20.	1 August 1988		-647 895	-647 895
	1 Nov. 1988		-127 038	-127 038

quences to Sundsvallsbanken in Table 1 are before corporate income tax. They may be considered as after-tax as well, since Sundsvallsbanken was apparently not in a tax-paying position at the time. As a bank, it had relatively ample possibilities for transferring pre-tax income to untaxed reserves, in particular to the reserve for anticipated losses on lending activities (värderegleringsfonden). As a matter of fact, during the years 1980–1985, Sundsvallsbanken only reported roughly that amount of after-tax income which was necessary for the distribution of dividends to the shareholders. Sundsvallsbanken did not lose any depreciation tax shields by leasing rather than purchasing, since it was not in a tax-paying position. Hence, there are no negative entries corresponding to lost depreciation tax shields in Table 1.

Banco initially bought the computer for 12,703,817. But since Banco was registered for paying VAT, it could (after some brief delay) reclaim the difference between the prices 12,703,817 and 10,289,824 with and without VAT. When Tjädern bought the computer from Banco, the price was 14,405,756, not including VAT, to be paid on November 1, 1988. The difference between the net price 14,405,756 (with-

Table 2: Cash flow consequences to Banco

		Computer purchase excl. of VAT	Lease payments excl. of VAT	Final sale excl. of VAT	Payments from Tjädern	Interest paid to Tjädern	Final payment of VAT	Total consequences
1. 1 Nov.	1983	-10 289 824	524 781		514 490			-9 250 553
2. 1 Feb.	1984		524 781		4 820 166			5 344 947
3. 1 May	1984		524 781					524 781
4. 1 August	1984		524 781					524 781
5. 1 Nov.	1984		524 781					524 781
6. 1 Feb.	1985		524 781					524 781
7. 1 May	1985		524 781					524 781
8. 1 August	1985		524 781					524 781
9. 1 Nov.	1985		524 781					524 781
10. 1 Feb.	1986		524 781					524 781
11. 1 May	1986		524 781					524 781
12. 1 August	1986		524 781					524 781
13. 1 Nov.	1986		524 781					524 781
14. 1 Feb.	1987		524 781					524 781
15. 1 May	1987		524 781					524 781
16. 1 August	1987		524 781					524 781
17. 1 Nov.	1987		524 781					524 781
18. 1 Feb.	1988		524 781					524 781
19. 1 May	1988		524 781					524 781
20. 1 August	1988		524 781					524 781
1 Nov.	1988			102 898	1 852 000	-1 852 000	-3 379 590	-3 276 692

out VAT) to Tjädern and the net price to Banco, 10,289,824, was a so-called credit supplement (kreditstillägg) of 4,115,932. Since Banco planned to reclaim VAT on its purchase of the equipment right away, its immediate net outlay was 10,289,824, displayed in column 1 of Table 2. On the other hand, Banco would deliver VAT on its sale of the computer to Tjädern, 23.46% of 14,405,756 which equals 3,379,590, only after being paid by Tjädern, i. e., on November 1, 1988 (at the time, it was possible to deliver VAT on a cash rather than invoice basis). This final payment of VAT is also shown in Table 2 (the sixth column).

Furthermore, Tjädern would *lend* an amount of 514,490 to Banco on November 1, 1983, and a further amount of 4,820,166 on February 1, 1984. These amounts would be lent until November 1, 1988. Also, Tjädern would *lend all net lease payments* (after deducting VAT) to Banco, also until November 1, 1988. As a practical matter, Banco would send quarterly lease invoices to Sundsvallsbanken, the lessee, and receive payments directly from the lessee. From each such payment of 647,895, Banco would deduct the VAT amount, being 123,114, and remit that VAT amount to Tjädern (which would immediately pass it on to the VAT office). The

amount lent to Banco by Tjädern in connection with each lease payment is hence 524,781. These amounts borrowed from Tjädern are indicated in the second and fourth columns of Table 2. Interest on the amounts borrowed would accumulate (i. e., not be paid out) until the final settlement of the contract on November 1, 1988. On that date, Banco would pay a total of 1,852,000 of accrued interest on the sums borrowed from Tjädern. This corresponds to an effective interest rate of 0.82% per quarter. During the life of the contract, Banco would have a lien on the stream of lease payments from the lessee as a collateral for the claim on Tjädern.

On November 1, 1988, Tjädern would settle the contract with Banco by paying the agreed purchase price of the computer, 14,405,756 exclusive of VAT, plus VAT equal to 3,379,590, or a total of 17,785,346. This payment would be in the form of surrendering to Banco all the money previously lent plus the final purchase payment from Sundsvallsbanken not including VAT (meaning 127,038 minus VAT 24,140, which equals 102,898), plus a final payment of 1,852,000. This final payment of 1,852,000 would, however, be cancelled by the payment of interest from Banco to Tjädern. The amount

Table 3: Price of computer and Tjädern's payment

Sales price to Tjädern:	
10 289 824	IBM invoice, VAT not included
<u>4 115 932</u>	Credit supplement
14 405 756	
<u>3 379 590</u>	23.46% VAT
17 785 346	
Payment by Tjädern:	
514 490	Cash from Tjädern; formally part of loan from Tjädern to Banco
4 820 166	VAT refund plus VAT-linked investment allowance; 23.46% plus 10% of 14 405 756; formally part of loan from Tjädern to Banco
10 495 620	20 lease payments from Sundsvallsbanken, VAT not included; formally part of loan from Tjädern to Banco
102 898	Final purchase of computer by Sundsvallsbanken, VAT not included
1 852 000	Cancelled by interest on loan from Tjädern to Banco
<u>17 785 174</u>	

of money surrendered by Tjädern to Banco in this fashion would be almost exactly equal to the amount due, 17,785,346. The final column in Table 2 shows the resulting total cash flow consequences to Banco over the life of the lease contract. These consequences are after-tax, since Banco was not in a tax-paying position: Banco did not have sufficient taxable income to exhaust the depreciation charges from its own (non-partner) financial leasing activities (and other possible transfers to untaxed reserves, such as the reserve for anticipated losses). Table 3 shows how the price to be paid by Tjädern was calculated, and how Tjädern's purchase was financed, through the VAT refund and the VAT-linked investment allowance, through payments from Sundsvallsbanken, and through interest on money which was formally lent by Tjädern to Banco. Tjädern itself had to provide only a minor part of the purchase price (514,490).

The cash flow consequences to *Tjädern* are outlined in Table 4. Actually, those consequences pertain to one owner of that limited partnership. As mentioned in Section 3, the owners of Tjädern, a partnership, could freely decide which one of them would incur the business as well as tax consequences. The taxable conse-

quences of the partner lease would enter into that owner's income tax return and be taxed at that owner's relevant tax rate for personal income tax. That tax rate can be assumed to have been 50% (cf. Lodin, Lindencrona, Melz, and Silfverberg 1984, pp. 357–377, for the applicable tax rules, which were rather complicated).

The first six columns in Table 4 show the net tax consequences to the selected owner. Those consequences are assumed to take place on May 1 each year, one day after the final date for paying preliminary (self-assessed) income tax on last year's income. The first column lists last year's lease income (i. e., two months of lease payments for 1983, one year of such payments for 1984, etc.). The second column states the income from the final sale of the computer to Sundsvallsbanken (which enters into the tax computations on May 1, 1989). These amounts (lease payments and income from the final purchase of the computer by the lessee) are net of VAT, since VAT would be paid immediately by Tjädern. The third column in Table 4 lists the depreciation charges. The price excluding VAT, 14,405,756, would be depreciated over five years according to the optimal sequence 30%, 21%, 14.7%, 14.3%, and 20% (resulting in residual values of 70%, 49%, 34.3%, 20%, and 0% after each of the five years; cf. Section 3 above). Tjädern would be able to depreciate according to this optimal sequence since it had virtually no business other than this particular partner lease (it did acquire and lease out a couple of cars earlier in 1983, evidently for cosmetic reasons).

The fourth column in Table 4 shows the taxable interest income accruing from the gradually increasing loan to Banco. As mentioned above, the interest rate on the loan was 0.82% per three months. The interest amounts in the fourth column in Table 4 enter into taxable income in the computation of tax consequences on May 1 of the following year. The fifth column in Table 4 summarizes the net addition to taxable income for the Tjädern owner deriving from the lease and final sale payments, depreciation of the computer, and accrued interest on the money lent to Banco. The sixth column lists the resulting net tax consequences, which constitute actual cash flows. For instance, there is

Table 4: Cash flow consequences to owner of Tjädern

	Last year's lease income	Last year's final sale income	Last year's depreciation of computer	Last year's interest income	Net addition to taxable income	Net tax consequences	Initial payment to Banco	Net cash flows to owner
1 November 1983							-514 490	-514 490
1 May 1984	349 854		-4 321 727	5 671	-3 966 201	1 983 101		1 983 101
1 May 1985	2 099 124		-3 025 209	218 696	-707 389	353 695		353 695
1 May 1986	2 099 124		-2 117 646	309 165	290 643	-145 321		-145 321
1 May 1987	2 099 124		-2 060 023	389 103	428 204	-214 102		-214 102
1 May 1988	2 099 124		-2 881 151	471 695	-310 332	155 166		155 166
1 May 1989	1 749 270	102 898		457 669	2 309 837	-1 154 919		-1 154 919

a tax reduction of 1,983,101 in 1984. The items leading up to the tax consequences do not involve any cash flows for Tjädern. The lease and final sale payments from Sundsvallsbanken were routed directly to Banco. The depreciation charges are, of course, non-cash expense. The accrued interest would not be paid out in cash but, rather, stay with Banco until the final settlement on November 1, 1988.

The only actual cash consequence to Tjädern other than reductions or additions to personal income taxes is the initial payment to Banco of 514,490. The second payment from Tjädern to Banco of 4,820,166 is exactly matched by the VAT-linked investment allowance of 10% of the price of the computer of (excluding VAT) 14,405,756 and the refunding of 23.46% VAT on that same price. In other words, the VAT office would provide Tjädern with 4,820,166 in cash on February 1, 1984, and Tjädern would immediately hand that cash over to Banco. Similarly, the final payment of 1,852,000 from Tjädern to Banco is cancelled by an identical payment in the other direction of interest on money lent to Banco. The net cash flow consequences to the designated owner of Tjädern are thus the ones displayed in the final column of Table 4. These consequences are computed after the owner's personal income tax of 50%.

5. Tax arbitrage gains in the Tjädern case

The Tjädern scheme was fairly safe, with the exception of tax uncertainty. There was no doubt that Sundsvallsbanken would be able to

pay the rentals and final purchase price. There was also no uncertainty about payments from Tjädern to Banco, since there was actually only one out-of-pocket such payment, the initial one of 514,490 on November 1, 1983. Generally speaking, cash flows in partner leases during the 1980's were often quite safe, since the lessees were credit-worthy institutions such as banks, insurance companies, and county hospitals.

We will now try to estimate the tax arbitrage gains in the Tjädern case. We will do so in an ex-ante sense, as the parties involved in the scheme could have done. Such a calculation is difficult, though, since we do not know precisely what the alternative to the actual deal would have been. Since we have just argued that the Tjädern scheme was fairly safe, we will use a valuation model which is applicable to safe, nominal cash flows, i. e., to discount at the usual after-tax (short-term) borrowing rate (or lending rate; it is assumed for simplicity that borrowing as well as lending is possible at the same interest rate). This valuation model, to discount safe, nominal cash flows at the usual after-tax borrowing rate, is founded on an arbitrage argument and is standard in corporate finance (cf. Brealey and Myers 1996, pp. 537–541 and 747–757; Jennergren 1990; Ruback 1986). It has often been applied to lease contracts (Franks and Hodges 1978; Levy and Sarnat 1979; Myers, Dill, and Bautista 1976). The short-term T-bill rate was around 12% at the end of 1983 (Sveriges Riksbank 1983, pp. 140–141). We assume that the short-term borrowing (or lending) rate for Sundsvallsbanken, Banco and Tjädern (the owners of which had special connections to Banco) was the T-bill rate plus

1% (on an annual basis), meaning 3.25% per quarter.

Sundsvallsbanken and Banco were not in tax-paying positions, as we have mentioned in the previous section. Their after-tax and before-tax borrowing rates were therefore the same, 3.25% per quarter. The marginal tax rate of the designated Tjädern owner, however, can be assumed to have been 50%, as we have also mentioned above, meaning that the usual after-tax borrowing rate for Tjädern was 1.625% per quarter.

The fundamental difference to Sundsvallsbanken between purchase and lease was that leasing implied a subsidized loan with an immediate inflow of 12,055,922 and subsequent debt service (interest and amortization) outflows equal to the quarterly lease payments and the final purchase payment. Discounting these cash flow consequences, summarized in the last column of Table 1, at 3.25% per quarter gives a present value as of November 1, 1983, of approximately 2.91 million. Consequently, this is the value to Sundsvallsbanken of the tax arbitrage inherent in the lease contract.

For Banco, we discount the total cash flow consequences in the last column of Table 2 at the interest rate 3.25% per quarter. This results in a present value of around 1.04 million. This is our estimate of the value of the scheme to Banco.

We compute the gains to Tjädern in the same fashion. Discounting the net cash flows to the designated owner in the last column of Table 4 at 1.625% per quarter, we obtain the value of the tax arbitrage through the lease contract from Tjädern's point of view to be 0.74 million. This value 0.74 million does not depend on Tjädern being a limited partnership. It would have been the same for a limited liability company with a marginal tax rate of 50% (but obviously not to the owners of a limited liability company).

Hence, we find the ex-ante tax arbitrage gains in the Tjädern case to be 2.91 million for Sundsvallsbanken, 1.04 million for Banco, and 0.74 million for the designated owner of Tjädern, or a total of 4.69 million, on an original acquisition of roughly 12.70 million. This could actually be an understatement, since there would have been further possibilities for tax planning by the owners of Tjädern. In particular, Tjädern

could have been sold at a loss to some other company with ample deductions against taxable income (i. e., a loss-making company). If so, the designated owner of Tjädern could reduce his/her income taxes in two ways, as already indicated at the end of Section 3, from maximum depreciation of the computer during the first two years and from selling the Tjädern limited partnership at a loss, while still avoiding the net taxable gains from the partner lease in the subsequent years.

Our computed ex-ante tax arbitrage gains of 4.69 million could also be an overstatement, though. Our calculation presupposes that the alternative to the partner lease would have been an outright purchase of the equipment by Sundsvallsbanken. This alternative may not have been the second best for the three parties. For instance, the VAT-linked investment allowance could have been obtained also through other arrangements, as will be mentioned in the following section.

6. Tax asymmetries in the Tjädern case

Financial innovations involving tax arbitrage are usually founded on asymmetries in tax treatment. In the Tjädern case, there are no less than four asymmetries which are simultaneously exploited. The first obvious asymmetry is that Sundsvallsbanken and Banco could not benefit from the VAT-linked investment allowance, whereas Tjädern could do so. This investment allowance could actually have been obtained even without a partner lease, though: Banco and Sundsvallsbanken could have drawn up a lease contract shorter than three years followed by a subsequent sale of the computer to Sundsvallsbanken (or by a second lease period of two years). If so, Banco could have claimed the VAT-linked investment allowance.

The second asymmetry is that Tjädern would claim VAT on its purchase of the computer from Banco immediately. On the other hand, Banco would deliver VAT on the sale to Tjädern to the VAT office only on November 1, 1988, when Banco (in a rather formal sense) would be paid by Tjädern. This second asymmetry could not

have been exploited by Tjädern and Sundsvallsbanken acting alone. Only through the inclusion of a third party, Banco, could that asymmetry be exploited.

The total tax arbitrage gains of 4.69 million that were calculated in the previous section are mainly due to the two asymmetries just mentioned. Suppose these two asymmetries are eliminated in the Tjädern case. That is, suppose that the VAT-linked investment allowance did not exist, and that it was not permitted to deliver VAT on a cash basis. If so, there would have been no need to involve Banco in a partner lease between Sundsvallsbanken and Tjädern. For Sundsvallsbanken, a revised contract (without Banco) would involve the same kinds of cash flows as in Table 1 (although the quarterly lease payments would certainly be different). The value of such a contract to Sundsvallsbanken can be calculated as in the previous section, i. e., by discounting the associated cash flows at the assumed usual after-tax borrowing rate 3.25% per quarter. (Again we point out that Sundsvallsbanken's after-tax and before-tax borrowing rates were the same.)

For Tjädern, a contract with Sundsvallsbanken only would mean paying the purchase price of the computer 10,289,824 (i. e., exclusive of VAT, which would be reclaimed from the VAT office immediately) and receiving quarterly lease payments and the final sale price (again exclusive of VAT). Tjädern would deduct annual depreciation charges 30%, 21%, 14.7%, 14.3%, and 20% of the purchase price 10,289,824 and obtain tax consequences on May 1, 1984 through 1989. Those tax consequences would be tax reductions or increases equal to the tax rate multiplied by last year's lease and final sale incomes minus last year's depreciation. The cash flow consequences would hence be the initial purchase price of the computer, the quarterly lease payments, the final sale price (all exclusive of VAT), and the tax consequences. The value of such a contract to Tjädern can be calculated by discounting these cash flows at the usual after-tax borrowing rate 1.625% per quarter.

As before, the total tax arbitrage gains are equal to the sum of the contract values to the parties involved (Sundsvallsbanken and Tjädern

in this modified situation). Under the assumption that the quarterly lease payment is set so that *the value of the contract is the same for lessee and lessor*, the total tax arbitrage gains become 0.60 million. The drop from 4.69 to 0.60 million reflects the importance of the two tax asymmetries which were mentioned above.

The third asymmetry is that Tjädern was registered for paying VAT but Sundsvallsbanken was not. In particular, the cash flow consequences of a lease contract to Sundsvallsbanken, as in Table 1, include VAT. Those cash flow consequences would hence be reduced by $(1 / 1.2346)$, if Sundsvallsbanken were registered for paying VAT. Redoing the same calculation as in the previous paragraph, but under the assumption that Sundsvallsbanken was registered for paying VAT, results in total tax arbitrage gains of 0.56 million. The further drop from 0.60 to 0.56 million indicates the (rather small) importance of the third asymmetry, in registration for paying VAT.

The fourth asymmetry is the difference in usefulness of depreciation charges between lessee and partner. More precisely, Sundsvallsbanken could not use depreciation charges or lease payments to reduce taxes payable, whereas Tjädern could benefit from depreciation charges that would be incurred relatively early compared to the lease payments. This asymmetry is the one which is usually mentioned in the corporate finance literature in connection with taxes and leasing. In the Tjädern case, however, it was much less important than the first two asymmetries which were mentioned above.

Yet another asymmetry which is often mentioned in connection with leasing (but did not occur in the Tjädern case) is the so-called "double dip". This phenomenon occurs when the lessor is located in one country and the lessee in another. If so, both parties may be able to deduct depreciation charges on the object of the lease.

We have focussed on tax asymmetries. In fairness, there were other tax and regulation reasons for partner leasing as well: Partners could avoid compulsory allocations to investment reserves, or dissolve such reserves. Through partner leasing, profitable companies

could be shielded from taxation prior to sales, resulting in higher values to the buyers. Collaboration with partner companies was also a way for finance companies to circumvent regulations and obtain off-balance sheet funding.

7. Reactions of the authorities: intimidation, harassment, court cases, tax rule changes, and the 1991 tax reform

According to Edward Kane's *regulatory dialectic framework* (Kane 1981, Kane 1983), financial innovations move through cycles of regulation, avoidance, and re-regulation. This framework, which comes close to Merton Miller's view that successful financial innovations are motivated by taxes and regulations, agrees with the development of partner leasing in Sweden. The emergence of partner leasing on a large scale in 1982 and 1983 constituted regulation avoidance, of tax provisions pertaining to the VAT-linked investment allowance. We now discuss the various attempts at re-regulation by the authorities.

The Bank Inspection Board (Bankinspektionen) sent a so-called ethics letter (dated December 5, 1983, and reprinted in RSV rapport 1985:8) to all finance companies (and various other institutions, including banks). In this letter, it is stated that partner leasing could be viewed as similar to tax avoidance according to the tax avoidance law (skatteflyktslagen). The over-all tone is threatening. Banco received an even more threatening letter (also reprinted in RSV rapport 1985:8) where it was rebuked for its role in the Tjädern case. That letter ends rather sternly: The Bank Inspection Board "... has reason to level serious criticism against the company. Banco Finans should henceforth better bear in mind its societal responsibility."

This attempt at what can only be described as intimidation probably did not impress the finance companies very much. The "ethics committee" of the Swedish Association of Finance Houses issued guidelines for good conduct in connection with partner leasing. According to those guidelines, a partner company should not be created for the sole purpose of obtaining tax

advantages through a partner lease. Also, a partner should contribute to the financing of the object of the lease.

Another reaction on the part of the authorities can be described as harassment. It is clear from the Tjädern case that the benefit of the VAT-linked investment allowance could only be obtained if the partner were registered for paying VAT. In 1982 and 1983, the VAT registration units of the local tax authorities (belonging to the county administrative boards; länsstyrelserna) received an increasing number of applications for registration for paying VAT from prospective partner companies. As it became clear to the local tax authorities what was going on, they reacted by delaying those applications, demanding more explanations, etc.

In the Tjädern case, the VAT registration unit of the local tax authority received an application for registration for paying VAT from Tjädern towards the end of 1983. This application was refused. Tjädern appealed to the county administrative court (länsrätten). The tax authority representative argued before that court that Tjädern's appeal should be refused, stating the following arguments: The contracts signed by Tjädern (in particular, the computer partner lease but also the car leases) were, in the first place, of a purely fictitious nature and could not motivate paying VAT. Secondly, if the first argument were to be rejected, then the conditions in those contracts and the circumstances leading up to the signing of the contracts were so peculiar that Tjädern could not be considered as an operating company (rörelsedrivande företag) (and hence not eligible for registration for paying VAT). In particular, there was no serious business motive other than generating tax deductions for the designated owner. Thirdly, if the previous two arguments were to be rejected, then Tjädern's line of business should be regarded as banking-like (penningrörelse) (and hence not eligible for registration for paying VAT). The county administrative court upheld the decision of the VAT registration unit of the local tax authority. Tjädern appealed again, to the administrative court of appeal (kammarrätten), which ruled in favor of Tjädern in April, 1985. The tax authority representative then appealed to the Supreme Administrative Court

(Regeringsrätten), which refused to reopen the case.

In a couple of similar cases, the tax authorities lost in the Supreme Administrative Court. One fairly large case, involving a partner lease in 1988 of a Boeing 747 to a foreign airline, is currently (February 1998) before the Supreme Administrative Court, with no quick verdict in sight.

Altogether, the tax authorities had little success in the tax courts in their efforts to stop partner leasing. This is surprising, since the tax avoidance law is often viewed as far-reaching and a threat to public justice. That law did not apply to VAT issues, though. Also, the partner lease schemes were very complex transaction chains with several interlocking components. The tax authorities sometimes opted to (or were forced to) attack partial aspects only of the schemes (such as VAT registration in the Tjädern case). This meant that the counterparties had to provide only limited arguments and documentation to convince the courts. On the other hand, when the tax authorities tried to use more general arguments involving the whole transaction chains, that did not succeed either. Such arguments were, for instance: The schemes did not satisfy standard criteria for business activities (profit purpose, permanence, and independence). They only purported to lead to tax reductions. The transfer of ownership of the lease objects to the partner companies had not been conducted in a legally correct fashion. In a commentary on the final verdict in the Tjädern case, the National Tax Board notes sadly: "The verdict also indicates the very considerable difficulties relating to evidence which are at hand, when the tax authorities try to claim that a contract has been drawn up for fictitious reasons" (RSV rapport 1985:8, appendix 2, p. 5).

The authorities also made changes in tax decrees (cf. RSV rapport 1985:8, p. 91). The VAT-linked investment allowance was a temporary one during 1982 and 1983 and was simply not renewed. Payment of VAT on a cash basis was no longer permitted after April 1, 1984. The rules for using investment reserves were changed in 1985. Such reserves could henceforth be used for investments in equipment to be leased only if there were common business

interests (e. g., membership in the same company group) between lessee and lessor. A press release from the Finance Ministry dated January 31, 1985, states that investment reserves had increasingly been used in conjunction with financial leasing and that there was no reason to subsidize that type of financial activity through the system of investment reserves.

In August 1988 the taxation of shares in (limited) partnerships was changed. The double deductions mentioned in Section 3, deriving first from annual business losses in a partnership and after that from selling the partnership at a loss, were no longer permitted. The government reacted to the increased "trade in depreciation charges" (excerpt from the minutes of a government meeting on January 25, 1990), i. e. partner leasing, in anticipation of a lower corporate income tax rate after the tax reform in 1991 and the elimination of the profit sharing tax and the special profit tax: The depreciation rules were temporarily changed (but only in the case of the profit sharing and special profit taxes).

The ultimate attempt at re-regulation affecting partner leasing in Sweden was the 1991 tax reform. This was a broad-scope reform, pertaining to taxes on individuals as well as on companies. One purpose was clearly to reduce the amount of tax planning in Swedish companies, through a broadening of the tax base and lower nominal tax rates.

One particular measure that would have struck directly against partner leasing was *not* included in the tax reform: To permit only *economic* fiscal depreciation (i. e., akin to the repayment of a loan under the annuity method) on leased objects. Such a measure would probably have eliminated partner leasing. As a negative side effect, it would probably have eliminated ordinary financial leasing as well. Perhaps because the latter was considered as beneficial from a societal point of view, economic depreciation of lease objects has not been made mandatory. Or perhaps the tax authorities have hesitated to prescribe different depreciation rules for the same kind of assets, depending on their use.

Instead, the main effect on partner leasing came through the lowering of the corporate income tax rate to 30% and later to 28%. Indeed,

the incentive for partner leasing did decrease. Suppose one recalculates the ex-ante tax arbitrage gains in the Tjädern case as in Section 6 (i. e., without Banco, and with the value of the contract being the same for lessee and lessor; the former is assumed not to be registered for paying VAT), but assuming a 28% tax rate for Tjädern. The ex-ante tax arbitrage gains then fall from 0.60 million to 0.41 million. This calculation actually assumes that the partner is a limited liability company, since the corresponding tax rate for partnerships has not been reduced to 28%. Partner leasing through (limited) partnerships had already earlier become less attractive, though, due to the elimination of double deductions in 1988. Also, except in special cases it is no longer possible for natural persons use losses from partnerships to reduce other taxable income, as already mentioned in Section 3.

Lower interest rates have also contributed to a decrease in the profitability of partner leasing. A fairly realistic usual before-tax short-term borrowing rate in February 1998 is 1.5% per quarter rather than 3.25%. If so, the usual after-tax borrowing rate would be 1.08% per quarter for a partner company with a 28% corporate income tax rate and 1.5% per quarter for a lessee that is not in a tax-paying position. Redoing the calculation in the previous paragraph with these usual after-tax borrowing rates for Tjädern and Sundsvallsbanken results in a fall in total ex-ante tax arbitrage gains from 0.41 million to 0.18 million. That is, the value of the tax arbitrage is now only about 0.09 million each for Sundsvallsbanken and Tjädern on an original acquisition of roughly 12.70 million.

The conclusion is that as a consequence of changes in tax rules and falling interest rates, partner leasing is not any longer a very interesting corporate tax planning device. One authoritative text book on income taxation (Lodin, Lindencrona, Melz, and Silfverberg 1990, p. 298) made the following prophecy about the effects of the tax reform: "The incentive for company investments in municipal district heating plants, etc. ... for tax reasons may be expected to decrease" (i. e., partner leasing was expected to decrease). This prophecy seems to have become fulfilled. It is our impression

(based on discussions with individuals knowledgeable about the market) that there is now rather little partner leasing going on, except in special cases, e. g., where a prospective partner is currently paying taxes but expects not to do so in the next couple of years, or where double dips can be exploited in cross-border contracts.

8. Conclusion: What were the effects of partner leasing?

We consider briefly the effects of partner leasing. It is clear that partner leasing was a large-scale activity, on the order of 20% of total investment in Sweden in machinery and equipment towards the end of the 1980's, as indicated in Section 2. The effects of partner leasing must therefore have been important. To begin with, the state must have lost a fair amount of tax revenue. It is of course not excluded that similar amounts could have been lost through some other financial innovation, if partner leasing had not been available. It also appears that Swedish tax subsidies have been awarded to companies located abroad. Partner leasing may also have affected investment behavior in Swedish industry. Investments in partner lease objects may not have been as carefully evaluated and screened as investments not undertaken for tax planning purposes. One can also speculate that sale and lease-back arrangements by local governments have increased local government spending to levels which could not have been sustained by conventional financing only. In other words, it is plausible that partner leasing has affected over-all resource-allocation in the economy. Yet another effect is that partner leasing has distorted official statistics relating to investments and foreign trade (for instance, the Boeing 747 mentioned in Section 7 was registered as part of Swedish foreign trade). A rather different type of effect is that partner leasing may have served as a business cycle moderator, by enabling partner companies to carry forward untaxed profits, to be absorbed by tax losses in subsequent recession years.

The effects just mentioned obviously cannot be measured in any meaningful way. It would

appear, though, that they have been mainly negative. But there is some evidence to suggest somewhat positive effects as well. As noted by Sven-Olof Lodin (personal communication), about 90% of civil aircraft sales by the Swedish company Saab are financed through leasing. Presumably, there is some element of tax planning involved in those leasing arrangements. If so, it would appear that civil airplanes cannot today be profitably produced and sold without subsidies through partner leasing (of course, it is not clear that airplane sales should be subsidized in the first place, or that subsidies should take this particular form). Similarly, the fact that the government of Sweden and the state railways have sold and leased back pieces of heavy equipment as partner lease objects (cf. Section 2 above) indicates that partner leasing may be somewhat useful even from the national government's point of view.

Financial innovations whose sole purpose is to circumvent regulations or avoid taxes are often regarded as worthless or even detrimental to society at large. From such a perspective, there is little positive to say about partner leasing. As also noted by Merton (1992, p. 16), it is an implicit assumption in that perspective that no credit is given to innovations which improve welfare by sabotaging taxes and regulations that would otherwise impose more costs than benefits on society. The reason for giving no such credit is that possible welfare losses can be more expediently eliminated through direct changes in the offending taxes and regulations. But suppose it is difficult, for political and other reasons, to make the required direct changes. If so, a financial innovation which enables economic actors to escape the negative consequences of harmful taxes and regulations may actually be beneficial to society. Consequently, partner leasing could be viewed in a more positive light. Perhaps partner leasing should be given some partial credit for bringing about the the 1991 tax reform. To conclude, we pass no judgment on our own but note merely that partner leasing is a kind of financial innovation that could be expected to emerge in a climate of heavy taxation and regulation.

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