Influence of Tax Differentials on International Competitiveness

Proceedings of the VIIIth Munich Symposium on International Taxation

Papers by

McLure, Sinn, Musgrave and others

Kluwer Law and Taxation Publishers
Deventer • Boston

Kluwer Law and Taxation Publishers
P.O. Box 23 Tel. : 31-5700-47261
7400 GA Deventer Telex: 49295
The Netherlands Fax : 31-5700-22244

Cover design: Eset

ISBN: 90 6544 459 9

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U.S. Tax Reform 1981 and 1986:

Impact on International Capital Markets and Capital Flows

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published in:

K. Vogel (Ed.):

„Influence of Tax Differentials on International Competitiveness“,

Kluwer Academic Publishers: Deventer 1990, pp. 25-58.

United States Tax Reform 1981 and 1986: Impact on International Capital Markets and Capital Flows

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Paper originally prepared for World Bank and Meeting of National Tax Association, Arlington, 16-17 May 1988

United States Reform 1981 and 1986: Impact on International Capital Markets and Capital Flows*

Hans-Werner Sinn

1. The problem

Since about 1981, international capital markets have been subject to substantial fluctuations. By way of the high interest rates, the United States exported its recession to Europe and it exacerbated the international debt crisis. Real and nominal US interest rates were extremely high and have only recently declined. The dollar first rose to a peak of DM 3.45 in February 1985, and now, three years later, only massive interventions have prevented it from falling below DM 1.60. The US capital import rose to heights of $ 144 billion in 1986 and $ 157 billion in 1987, more than one third of which was officially financed by the central banks of US trading partners.[1] Japan, Germany and other exporting countries experienced rapid growth in their export industries and stagnation in the domestic, interest sensitive, sectors, a trend that has only recently been reversed as a result of the falling value of the dollar and the lower interest rates.[2]

Numerous explanations, including the computer boom, a tight monetary policy, and the persistent US budget deficit have been offered for this development, and the last mentioned is clearly the most popular of all. This paper studies the influence exerted by the 1981 and 1986 US tax reforms[3] on international capital movements and it attempts to demonstrate that the economic fluctuations described may well have been reinforced, if not caused, by these reforms. The paper is a summary and extension of a number of previous studies on the subject that have been published in Europe.

In his introduction to the first volume of the new *Journal of Economic Perspectives* which contains a number of useful articles on the 1986 tax reform, Henry Aaron (1987, p. 8) writes: 'The tax reform debate also highlighted gaps in economic knowledge that will almost certainly influence future research. Per-

* First published in: *National Tax Journal*, Vol. XLI, No. 3 - September 1988, pp. 327-340.

1. *See IWD* 17, 28 April 1988. The exact percentages are 30 for 1986 and 41 for 1987. On top of the official interventions, there were extensive purchases of dollar denominated debt instruments in the Euromarket which, in the statistics, are counted as private capital exports into the United States.
2. Because of the revaluation of German exports and sluggish demand reactions, West Germany was the world's largest exporting country in 1986 and 1987.
3. *See* Joint Committee on Taxation (1981, 1986).

haps the most important gap concerns the failure of most current theory and empirical work on the incidence and effects of taxes to take into account the effects of world economic interdependence.' This paper is a modest attempt to help close the gap.

2. The 1981 reform and the US trade deficit

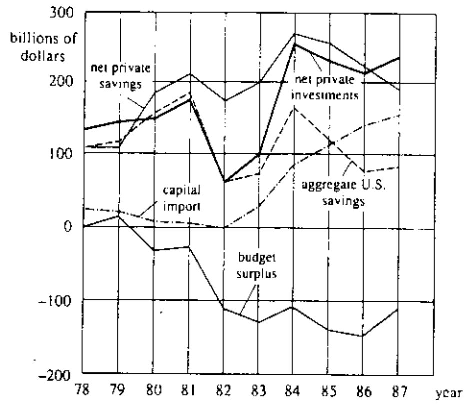
The 1981 reform, amended by some minor adjustments in 1982, created a huge budget deficit primarily as the result of numerous tax exemptions, a personal income tax cut and the introduction of the Accelerated Cost Recovery System (ACRS). It had been estimated that the budget deficit would approach \$ 700 billion over a five-year period and, in retrospect, this figure turned out to be surprisingly correct.[4] During the same period (1982-1986), the cumulative deficit in the US balance on goods and services was \$ 358 billion.

A budget deficit is a demand for funds in the domestic capital market and a trade deficit is a supply. It therefore seems plausible that the budget deficit caused the trade deficit via a sufficient rise in interest rates and, perhaps, Keynesian multiplier effects. There are, however, problems with this explanation which suggest that the budget deficit cannot be the only explanation for the trade balance deficit.

First, a budget deficit resulting from tax cuts does not necessarily imply a net demand for funds in the capital market. Far-sighted consumers will know that replacing taxes with government debt simply changes the time pattern of taxation without affecting the present value of the tax burden. They will save the increase in disposable income resulting from the tax cut, and this is just enough to compensate for the increase in government's credit demand (Ricardian equivalence). There can be little doubt that many consumers are not far-sighted, but it is also clear that they cannot all be stupid. The argument suggests that only part of the increase in the budget deficit translates into a net demand for funds in the capital market. This interpretation is compatible with the fact that, despite a sharp increase in the US budget deficit, the sum of private and government savings developed more steadily than each of its components (*see* Figure 1).

4. Cf. US Joint Committee on Taxation (1981, Tab. 2, p. 58), and *Business Conditions Digest*, July 1987.

Figure 1: *A Summary of Flow of Funds Statistics*



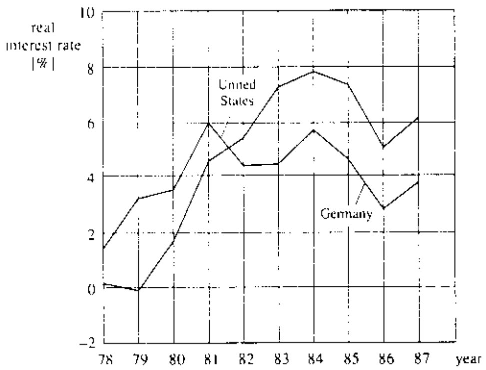
SOURCE: *Survey of Current Business*, January 1980, January 1982, July 1987, and January 1988.

The second problem with the popular view is the strength of US private investment. If there had been only a net increase in the demand for funds by the US government and American households, the resulting rise in interest rates would have crowded out private investment. However, such a crowding out did not take place. Investment not only failed to shrink in the years following the 1981 reform, it even rose and stayed high despite an excessively high level of US interest rates.[5] (*Compare* Figures 1 and 2.)

These problems suggest that there may have been a second cause for the trade deficit that reinforced or even dominated the income effects of the budget deficit. A strong candidate is the incentive effect created by ACRS. Compared to the Asset Depreciation Range System (ADR) that was in operation before 1981, ACRS dramatically reduced the depreciation periods for most equipment and plant from about 8-12 years to 5 years and for construction from 36-54 years to 15 years. Combined with the investment tax credit (ITC), this resulted in investment incentives approximating and often even exceeding expensing.[6] With a corporate tax rate of 46 per cent, expensing meant that the market rate of interest US investment projects were able to bear was about twice that similar investment projects in countries without accelerated depreciation or an investment tax credit could bear. It seems that this dramatic increase in the ability to withstand high interest rates shoud have had some bearing on international capital movements.[7]

5. Bosworth (1985) showed that the first two years after the recession of 1982 were characterized by an investment boom that was significantly different from, and about twice as strong as, those in previous upswings following a recession. The author criticized the view that the investment boom was the result of the 1981 and 1982 tax reforms, but a comment by Lawrence Summers made it clear that Bosworth's paper suffered from serious shortcomings in the way tax effects were measured.
6. *See* Gravelle (1982), US Department of the Treasury (1984, pp. 106, 107, and 112; and 1985, p. 135), and Fullerton, Gilette, and Mackie (1987, p. 144, table 5.4).
7. *See* Sinn (1984 and 1985) for a discussion of the international repercussions of ACRS.

Figure 2: *The Development of Interest Rates**



* Real long term interest rates (nominal long term interest rate minus GDP inflation rate)

SOURCE: OECD (1987). *OECD Main Economic Indicators*, April 1988, and *Survey of Current Business*, January 1988.

In principle, international capital movements can result from diverging national savings flows and/or from attempts to reshuffle existing stocks of assets. Explaining the US trade deficit in terms of the budget deficit is to see it as a flow phenomenon, explaining it in terms of the ACRS is to see it as a result of stock adjustments. There are at least two reasons for expecting stock adjustments to be more important than diverging savings flows as the source of international capital flows in the short and medium run.

The first is simply that it takes time for a flow to accumulate into a stock. There seems to be broad agreement in today's foreign trade literature that by far the largest part of international capital movements results from the attempt to restructure existing portfolios rather than from allocating their increments.

The second reason for the dominance of stock adjustments is that, in a non-specialized open economy, the marginal product of capital may be insensitive to changes in the stock of capital because such changes affect the economy's aggregate capital intensity via shifts in its sectoral structure rather than shifts in the capital intensities of the sectors themselves. Even small disturbances in capital arbitrage conditions may therefore require huge and long lasting international capital movements before a new equilibrium allocation of the world capital stock is reached.

To demonstrate the role of ACRS under such circumstances recall the properties of the textbook-type Heckscher-Ohlin model. In this model, commodity trade equalizes the marginal products of capital across borders even when there are no capital flows, provided only that the countries do not specialize (factor price equalization theorem). Suppose, we extend the model by allowing for capital movements and taxation. Such capital movements would not take place with harmonized tax systems as an investor would not gain by transferring capital from one country to another. Things are different though if one country introduces unilateral investment incentives such as ACRS. There will be a capital import into

this country that will continue until a wedge the size of the marginal investment incentive is driven between the marginal products of capital in the two countries. However, in the Heckscher-Ohlin model, the marginal-product-of-capital curves of the two countries are horizontal and overlap when both countries produce both commodities. The divergence in the marginal products therefore cannot occur unless at least one country is driven into perfect specialization.[8]

To be sure, the Heckscher-Ohlin model is not reality. The presence of sector-specific fixed factors of production prevents the countries' capital demand curves from being perfectly elastic. However, the model clearly reveals the drastic implications for international capital markets that tax reforms may have when they affect the arbitrage conditions for an international capital market equilibrium.

To get an idea of what the *minimum* volume of capital imports induced by ACRS would be in a world where absorbing capital flows through changes in the sectoral structure of the economies is *not* possible, a one-sector Cobb-Douglas example was calculated in Sinn (1984, p. 564). The example was based on stylized figures characterizing the United States and the rest of the world and it assumed a cut in depreciation periods from 10 to 5 years. It implied that ACRS would have channelled about 7 per cent of the world capital stock or an amount between $ 1 billion and $ 1.5 billion into the United States.

It is clear that such stock adjustments could not be carried out instantaneously but were being slowed down by the sluggishness of trade balance reactions. Given the current US trade deficit it would have taken a decade or more before a new equilibrium compatible with the investment incentives created by ACRS could have been reached even if the budget deficit had not absorbed part of the funds foreign investors were willing to lend to the United States.

3. ACRS AND NATIONAL ADVANTAGE

Gravelle (1982) pointed out that ACRS implied very uneven investment incentives for different assets and therefore was likely to increase the Harberger type distortions in the allocation of capital to competing uses in America. On the other hand, ACRS reduced the overall wedge the tax system drove between the marginal product of capital and the consumer rate of time preference and created dynamic welfare gains that, according to a study of Fullerton and Henderson (1985), overcompensated the static welfare losses. ACRS may also have had important international welfare effects in addition to these closed economy effects.[9]

As is well-known, world efficiency in the allocation of capital to the various countries requires equating the marginal products of capital, but it may be to a country's national advantage to deviate from this rule. Peggy Musgrave (1969) argued that it would be optimal for a capital exporting country to repatriate funds until the marginal domestic product of capital has fallen to the level of the foreign rate of return net of withholding taxes. This is correct if the country is small and faces a given net rate of return that it cannot change through its own actions.

8. *See* Sinn (1984) for a formal analysis of ACRS in a Heckscher-Ohlin model.

9. *See* Sinn (1987a, pp. 224-231) for an extensive discussion of the problem.

However, for a large country like the United States, which produces about one third of OECD output, this assumption does not seem plausible, for it certainly can affect the world interest rate level through its own actions. Maximizing the US rent from lending capital abroad means reducing the capital supply not only below the point of world efficiency but even below the Musgrave optimum. The optimal supply from the point of view of national advantage is one that satisfies Cournot's monopoly conditions. The marginal cost is the marginal product of capital foregone by withdrawing capital from domestic uses. The marginal revenue is the foreign return to capital net of withholding taxes and net of the revenue loss that the intramarginal capital supply experiences when one additional unit of capital is offered to the world capital market.

Suppose, in line with empirical facts, that debt instruments are the dominant source of funds by which marginal international reallocations of capital are brought about. When there is a double taxation agreement, the interest income generated by these funds is subject to income taxation in the country of residence, but the source country is allowed to charge a withholding tax of up to 10 per cent for which the residence country gives a credit. In the presence of true economic depreciation and debt financing of marginal investment projects, or true economic depreciation and uniform taxes on interest income and retained profits within a country, the equilibrium in the world capital market will then be characterized by equality in the marginal products of capital regardless of whether the tax systems are harmonized or not. Thus, world efficiency will be the implication of a capital market equilibrium.

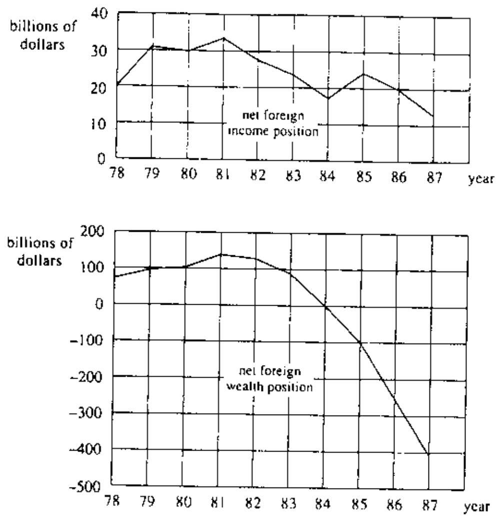
To steer a capital exporting country away from this equilibrium into the situation where it maximizes its national advantage, it would be necessary to introduce incentives to repatriate part of its capital operating abroad. A possible measure would be to impose a surtax on foreign investment income. Yet, a less obvious and much more elegant equivalent measure is to subsidize domestic investment. In this sense, although certainly not intended to have this result, ACRS can be seen as a means of helping the United States to exploit a monopoly position in world capital markets and to maximize its national advantage.

Unfortunately, however, there is some evidence that the US national optimum was nowhere near being reached. According to official statistics, the United States turned from a net creditor to a net debtor position in 1985. This is clearly a sign of suboptimality, for a monopolist would never reduce his supply to zero, let alone make it negative.

On the other hand, it is clear that the official statistics are not very reliable since they include directly invested assets that are evaluated at nominal historical book values. A large fraction of US direct investment abroad dates back to the post-war period where significant parts of European industry were bought under exceptionally favorable conditions. An attempt had been made to adjust the data for this distortion by weighting the annual gross direct investment flows between the United States and the rest of the world since 1948 with growth factors that were derived from American and European stock market indices. The result is a jump of the 1984 US foreign net position from $ 4 billion, the number published in the *Survey of Current Business*, to $ 405 billion.[10]

10. Sinn (1987a, p. 230).

Figure 3: Is the United States
a Net Debtor Nation?



SOURCE: *Business Conditions Digest*, July 1987, March 1988, and *Survey of Current Business*, June 1987, January 1988.

Even stronger evidence is provided in Figure 3 which exhibits the time paths of the US net foreign wealth and income positions. In 1987, the income US investment earned abroad exceeded the income foreigners earned in the United States by $ 13.4 billion, but nevertheless the official US net foreign position was -$ 420.5 billion. As the United States should apply the same discount rate when calculating its assets and liabilities and as the income measures are certainly more accurate than the wealth measures, this suggests that the United States is still a creditor country. With discount rates between 4 and 8 per cent and even when capital gains are neglected, the US net wealth invested abroad ranges between $ 167 billion and $ 335 billion in 1987, and in 1984, the year where the officially estimated net foreign wealth position approximated zero, the true net foreign wealth position must have been somewhere in the range between $ 231 billion and $ 462 billion, numbers that approximate the value of $ 405 billion mentioned above.

This suggests that the United States may not yet have repatriated too much capital from the view point of national advantage. Yet, the persistent trade deficit, currently about $ 140 billion per year, may soon produce such a situation. Both in the interest of its own advantage and of world efficiency, it is wise for the United States to take measures to prevent this from happening. Perhaps the 1986 tax reform was such a measure. It was certainly not designed to optimize the US net foreign position, but it may nevertheless have implications that help the US economy to approach an optimum.

4. The 1986 reform

The 1986 US tax reform was a reaction to the revenue implications of the 1981 reform. From 1980 to 1986, and primarily because of ACRS, the share of corporate taxes in the total tax revenue declined from 12.5 per cent to 8.1 per cent. One of the goals of the reform was to correct this outcome and to raise the corporate tax share to its original level. For this purpose, the ITC was abolished and the depreciation periods of ACRS were somewhat increased, without, however, reaching the pre-1981 levels as specified in the ADR system. Although the corporate tax rate has been reduced from 46 per cent to 34 per cent, the corporate tax revenue is expected to increase by about $120 billion over a five year period. This increase is not expected to reduce the budget deficit, but merely to compensate for a reduction in the personal income tax burden, the reduction being the net effect of a decline of marginal personal tax rates from a maximum of 50 per cent to 33 per cent or 28 per cent and an increase in the capital gains tax base from formerly 40 per cent to now 100 per cent of realized capital gains. Overall, the reform can be described as a policy of tax-cut-cum-base-broadening, designed to be revenue neutral.[11]

Whether the 1981 reform disturbed the world economy because of its income or its substitution effects is still subject to debate, nevertheless the intended revenue neutrality leaves little doubt that substitution effects dominante in the 1986 reform. This section briefly reviews the substitution effects that will have international repercussions.

4.1. A digression on the use of effective tax rates

A *priori*, the implications of the 1986 tax reform for international capital movements seem ambiguous, as the base broadening and the tax cuts exert countervailing effects on the tax burden which is imposed on capital income earned in the United States. It is only the increase in the corporate tax burden that seems to indicate a possible discrimination against investment in America. There are, however, at least two problems with such a view.

First, it should be clear that it is not the size of a tax burden, but only its derivative with regard to private choice variables, that can create substitution effects. With well-functioning capital markets, lump-sum transfers between American wealth owners' left and right pockets would not affect investment demand.

Second, even the marginal tax burden on capital as measured by 'effective tax rates' on private investment does not reveal much about the direction of capital movements when these capital movements take the form of portfolio investment. Typically, effective tax rate formulae are based either on the approach of Hall and Jorgenson (1967) or on that of Fullerton and King (1984). The two approaches differ with regard to the underlying assumptions on the firms' marginal sources of funds, but they both define an effective tax rate as the overall wedge the tax system drives between the pre-tax return to real capital and the net-of-tax return received by savers. Thus defined, the effective tax rate is an important tool for predicting savings incentives in a closed economy. However, to predict the tax system's implications for international capital movements, it is necessary to split up the effective tax rate into two separate components, one that measures the wedge between the pre-tax return to real capital and the market rate of interest and one that measures the wedge between the latter and the net-of-tax rate of return received by savers. The two components have adverse implications for the direction of international capital movements. The first discriminates against domestic investment, reduces the market rate of interest, and induces a capital export. The second discriminates against domestic savings, raises the market rate of interest, and induces a capital import. Clearly, it does not make sense to focus on the sum of the two components to predict the direction of capital flows.

The reason for the irrelevance of the effective tax rate is the residence principle for the taxation of border crossing interest income flows which, as mentioned before, is typically applied by countries with double taxation agreements. Leaving aside the possibility of anticipated currency appreciation this principle makes investors indifferent between domestic and foreign assets when all national pre-tax interest rates are the same and it implies a tendency towards a uniform world interest rate. If, by way of contrast, the source principle were applied, then there would be a tendency to equate the national post-tax interest rates and effective tax rates would indeed be relevant for the size of domestic investment and the direction of international capital flows.

4.2. The policy of tax-cut-cum-base-broadening: implications for international capital movements

Given the distinction between the two components of the effective tax rate, the international repercussions of the policy of tax-cut-cum-base-broadening can easily be analyzed.

By cutting the personal tax rates, the 1986 reform reduced the wedge between US interest rates and US savers' net rates of return. It thereby created savings incentives and increased the US net supply of funds in the world capital market with any given market rate of interest. Taken by itself, this effect implies a decline in American interest rates and will thus induce capital exports.[12] However, it refers to a flow phenomenon and may be of minor importance.

The important effects of the 1986 reform result from the way this reform affects the wedge between the pre-tax rate of return to real capital and the pre-tax market rate of interest as a change in this wedge will result in international stock adjustments.

Not much needs to be said about the repeal of the ITC and the prolongation of depreciation periods. Both measures obviously increase this wedge, discrimi-

11. Cf. Sinn (1987a, pp. 221-224; 1987b, c; 1988).

12. As will be reported below, the reform increased the wedge between the pre-tax rate of return to capital and the market rate of interest more than it reduced the wedge between the latter and the savers' net rate of interest. This makes it possible that, in equilibrium, the market rate of interest drops far enough to reduce the savers' net rate of interest and with it the volume of savings itself. This possibility clearly does not invalidate any of the conclusions of this section.

nate against American investment, and reduce the US interest rate. The result is a capital export.

Somewhat less obvious are the implications of the new treatment of capital gains. As was the case before the reform, a substantial fraction of capital gains continue to escape taxation because they are not realized. The implicit tax rate on accrued capital gains had been estimated to be 1/4 of the personal tax rate when 50 per cent of realized capital gains were being included in the personal income tax base (before 1981).[13] Assuming a stable pattern of asset holding periods and a decline in shareholders' marginal personal tax rates from about 40 per cent to 28 per cent, the full taxation of realized capital gains which the 1986 reform implied results in a rise of the implicit tax rate on accrued capital gains from about 8 per cent to 14 per cent. The personal capital gains tax is a tax on profit financed real investment. The increase in the tax rate therefore can be expected to discriminate against US investment with any given market rate of interest, and hence reduce this rate. It will induce capital exports just as the other base broadening effects do.

Consider now the effects on US investment resulting from the cuts in personal and corporate tax rates. To understand these effects it is useful to assume for a moment that tax depreciation rules for real investment coincide with true economic depreciation. Under this assumption, a balanced general tax cut would not affect American firms' investment demand with any given market rate of interest because it would favor shareholders' financial investment to the same extent as real investment within the firms.[14] The wedge between the pre-tax rate of return to real capital and the market rate of interest would not be affected.

In fact, however, the assumption of true economic depreciation is not justified, not even when the lengthening of depreciation periods the 1986 reform brought about is taken into account. It follows from estimates of Fullerton, Gilette, and Mackie (1987, Table 5.4, columns 2 and 4) that the majority of American assets still enjoys the privilege of accelerated depreciation. In comparison to true economic depreciation, accelerated depreciation means that real investment is subsidized at a rate that equals the corporate tax rate. A general tax cut reduces this subsidy and therefore favors domestic and foreign financial investment relatively more than domestic real investment. The result is an *increase* of the difference between the pre-tax rate of return to capital and the market rate of interest, and not a decline as one might be tempted to suspect. Somewhat paradoxically, even the tax cuts lower the American interest rates and induce a capital export.[15]

The result must be qualified insofar as it refers to portfolio investment and is based on the assumption that firms finance their investment projects primarily with retained profits and debt. When new shares are used as a marginal source of

13. Cf. Fullerton, King, Shoven, and Whalley (1981, p. 684).
14. In taxation theory, this result is known as the Johansson-Samuelson theorem. *See* Sinn (1987a, pp. 119-123).
15. In Sinn (1987b and 1988) precise results for the effects of *isolated* cuts in the corporate and personal tax rates were derived and it was shown that, depending on the size of the minimum marginal equity asset ratio, either a cut in the corporate tax rate or a cut in the personal tax rate will induce a capital export. When both tax rates are cut simultaneously, as happened with the 1986 reform, the capital export appears independently of the size of the minimum marginal equity asset ratio.

finance, the double taxation of dividends matters and the cut in corporate and personal tax rates favors US real investment more than foreign financial investment. The tax cut then induces a rise in American interest rates and a capital import. Similarly, when direct rather than portfolio investment is the channel through which international capital movements are brought about, the US tax cuts in themselves would attract capital from abroad because the returns from direct investment are essentially taxed according to the source principle. Effective tax rates would then be a good indicator of the international repercussions of a tax reform.

In the present case of the American tax reform, an emphasis of direct investment would not change the qualitative conclusions on the direction of international capital flows. As estimated by Fullerton, Gilette, and Mackie (1987), the base broadening effects just overcompensated the tax cuts in terms of the effective tax rate. With minor modifications for the taxation of border crossing dividend flows, this result can be taken to imply that direct investment in America has been somewhat discriminated against. Thus, with any given market rate of interest, the reform will not only induce an outflow of portfolio investment, but even a modest outflow of direct investment.

From an empirical point of view, the roles of direct investment and new share issues should not be overly emphasized though. There can be little doubt that, at least in the short and medium run, portfolio investment is by far the most important channel of international capital movements and that new share issues are only a minor source of finance for American firms.[16] Under these circumstances, the tax cuts will not counteract but reinforce the base broadening effects and capital exports can be expected to be much larger than a focus on effective tax rates would predict.

This result was formally derived in analytical models of Sinn (1987a, Chapter 7; 1987b) which include portfolio and direct investment and which are based on intertemporal optimization approaches to explaining the financial and real investment decisions of a firm. It seems to contradict the findings of Grubert and Mutti (1987) based on a differently designed, but certainly no less sophisticated numerical equilibrium model with four commodities and two countries. Grubert and Mutti do not distinguish between portfolio and direct investment and they do not allow for stock adjustments. They explain capital movements exclusively by diverging national savings flows concentrating on the steady state implications of their model. Their main result is that the reform implies a trade balance deficit in the long run.[17]

Contrary to first appearances, this result is compatible with the one predicted here. The resolution of the puzzle lies in the definition of the trade balance and the concentration on steady states. If the reform induces a capital export as predicted, then it also generates an inflow of foreign earned capital income. This income produces a surplus in the invisible balance which requires a deficit in the

16. From 1960 to 1985, on average 67.8 per cent of gross investment by US non-financial corporations was internally financed and 31.0 per cent was debt financed. Only 1.2 per cent was financed by new share issues. *See* Sinn (1987a, p. 92).
17. The short run result of Mutti and Grubert (*see* p. 245) is somewhat confusing since the authors simultaneously predict a 'reduced saving outflow' and an 'improvement of the trade balance'.

trade balance if the current account is to be in balance and further capital movements are to be excluded. The steady state result of Grubert and Mutti supports rather than contradicts the conclusion that the 1986 US tax reform will reduce the current level of capital imports and improve the trade balance for a considerable period of time.

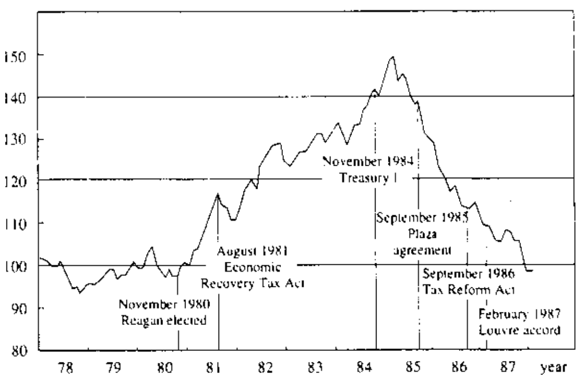
Another implication of the model of Mutti and Grubert is that the international repercussions of the 1986 reform seem to be small by all standards. This result may not be well-founded though. It is an obvious implication of the neglect of stock adjustments, of the Heckscher-Ohlin effect described in Section 2, and, in particular, of the perverse reactions the tax cuts create when portfolio investment is the dominant channel of international capital flows and accelerated depreciation is allowed.

5. The tax reforms and the dollar

The previous sections have shown how the 1981 and 1986 US tax reforms may have affected the direction of international capital movements but they have not clarified the mechanism through which these movements could have occurred. A convincing mechanism is described by the monetary theory of foreign trade. When combined with the tax effects discussed above, this theory yields predictions that are fully compatible with the fluctuations in international capital markets that were described in the introduction.

The rise of the dollar and the US interest level began about the time President Reagan was elected and announced his investment oriented tax reform which was then enacted less than a year later. At the time, a tight monetary policy was operating to eliminate inflation and this policy certainly contributed to the high level of interest rates. However, ACRS weakened the effect of the high interest rates on American investment and even helped to create an investment boom. The high US interest rates induced international portfolio holders, primarily banking institutions, to reshuffle their portfolios in favor of US assets. For this purpose, portfolio managers had tried to sell their foreign assets for foreign currencies and then sell these currencies in the foreign exchange markets to get dollars for the intended purchase of American assets. However, in the short run and in the aggregate, they were not successful. The trade balance did not deteriorate sufficiently to produce the supply of dollars that was needed to actually carry out the desired volume of portfolio restructuring. The result was an excessive rise in the value of the dollar, strong enough to offset the attraction the high American interest rates had created for a growing number of investors. Gradually, however, with the passage of time the trade balance reacted more and more strongly and released a growing flow of dollars to the foreign exchange markets which allowed a grow-

Figure 4: *The Development of the Dollar**



* Real effective exchange rate
(Trade weighted exchange rate, adjusted for relative inflation rates. 1980 annual average = 100)

SOURCE: *International Monetary Fund*, unpublished data provided to World Bank.

ing flow of capital imports into the United States. (*Compare* Figures 1 and 4.) In theory, there is a turning point for the value of the dollar where the growing public interest in American assets is being overcompensated by the trade balance reaction. After this point, continuing devaluations are necessary to make asset holders want to invest a steadily increasing proportion of their portfolios in American assets, sufficient to create a continuing flow demand for the dollars supplied by traders in the foreign exchange markets.

The dollar did indeed reach a turning point in February 1985, but it is unclear whether this was the natural result of the trade balance deficit which presumably was caused by the 1981 reform or whether it resulted from new policy measures taken in the meantime. Bankers tend to argue that the Plaza agreement of 1985 was the reason for the subsequent sharp fall in the dollar value. However, the Plaza agreement came 7 months after the dollar's peak and did not produce significant changes in the time path of the exchange rate (*See* Figure 4.) A more plausible candidate is the publication of the Treasury I proposal[18] in November 1984 for this was three months *before* the dollar's peak. The Treasury I proposal was the first step towards the 1986 reform and it proclaimed an even more radical removal of investment incentives than was in the event actually carried out. Clearly, it was a signal for far-sighted investors to expect lower interest rates in the United States and a lower value of the dollar in the long run. Anticipating exchange rate losses on dollar denominated assets, or gains on assets denominated in foreign currencies, these investors became increasingly reluctant to continue their portfolio restructing in favor of American assets and thus caused the dollar to fall. The planned reform was carried out in 1986, and there

18. US Department of the Treasury (1984).

was indeed a decline in the interest rates as would have been expected.

The low value of the dollar, far below purchasing power parities, will certainly reduce the US trade deficit and hence reduce the US capital imports. Again, however, the trade balance cannot be expected to react quickly since it takes time for the American export industry to expand and for foreign exporters to realize that they cannot keep on offsetting the low dollar by accepting negative profit margins. It is true that the first signals for an improvement of the trade balance in quantitative terms have appeared. However, the high dollar prices of American imports are still preventing the trade balance deficit from shrinking in value terms. The turning point must be near though.

The turning point of the trade balance is not necessarily the turning point of the dollar. As long as a trade deficit persists that exceeds the level sustainable in a long run steady state growth situation, there is a flow supply of dollars in the foreign exchange markets that asset holders are not willing to absorb with given interest rates and exchange rate expectations. Despite short-run waves of optimism the dollar may therefore remain under pressure for a while.

As mentioned in the introduction, during the last two years at least one third of the US trade deficit was being financed by foreign central banks. This policy is in line with the Louvre accord of February 1987 and it is strongly supported by foreign export lobbies. It remains to be seen whether central banks will prove to have enough breath to continue and even expand their policy until a significant improvement in the trade balance occurs.

Altogether, the 1981 and 1986 US tax reforms were gigantic economic experiments turning the steering wheel into opposite directions. These experiments gave useful insights into the way a world economy with highly integrated capital markets operates. They may also have helped to improve the US net advantage from lending its capital abroad. Whether the world as a whole should have applauded the experiments is, to say the least, open to doubt.

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Discussion

Gandenberger (Chairman):

Thank you very much Mr. Sinn for this exciting presentation. I am sure that everybody has realized one interesting point Mr. Sinn has made, namely that a cut of corporate tax rates - at least under recent American conditions - has had a depressing (rather than an enhancing) effect on private investment. This view might give some material for discussion since almost everybody in this country seems to take the opposite effect for granted, if not as self-evident: that lower tax rates are stimulating private investment.

We have already had one remarkable reaction to Mr. Sinn's paper. Mr. McLure explicitly stated that he largely agrees with the views of Mr. Sinn. And, indeed, looking at the McLure paper, it is surprising to see the similarities in the analysis of our two speakers. Their views are almost concurring, not only as to the nature of the effects of the US tax reform on international capital flows, but also with respect to the intensity of the impact of these changes in fiscal variables: both speakers consider the US tax reforms to be a major driving force in the development of the international capital streams during the last decade. This is all the more worth noting, since - particularly in the United States - usually other than the fiscal variables and their changes are held responsible for the development of international capital flows and for the strength or weakness of the dollar. In other words, one outstanding impression of this morning has been the lack of disagreement between our two speakers.

We now have two prepared comments on the papers of this morning, one by Dr. Flick of the *Deutscher Industrie- und Handelstag* and the other by *Ministerialrat* Thomas Menck of the Federal Ministry of Finance, and I would not be surprised at all, if our discussants were in disagreement with some of the views presented this morning.

Flick:

My approach is one of an entrepreneur who has to compete in international business. Therefore, I am concentrating on direct investment neglecting portfolio investment.

The main tax question for international business decisions is the net profit after taxes. That may be influenced by the tax rate, the tax basis or an investment incentive.

I doubt, that the tax basis or the tax incentives are the main points of an entrepreneur's interest, because I believe that in the long run all fisci of the world want to tax the complete profit of the entrepreneur as soon as possible. The tax incentive only helps for a short period as long as the investment becomes greater every year.

There are a lot of other differences in the tax basis of countries beside the kind and rate of depreciation that have to be considered, e.g. the costs included in the depreciation. There may be costs which are deductible immediately in one state and which have to be capitalized in another state.

Therefore, I still think - based on my long term practical experience - that the top rate as a marginal tax rate is the decisive factor for international direct investment. In the long run it gives the best answer to the entrepreneur's question: 'What is the net profit of a successful investment after all taxes?' Tax rates, it is true, are not the only point of interest for international direct investments. The possibility to carry losses forward or backward or to consolidate profits and losses of different entities together may be of greater interest than lower tax rates. However, the high German top tax rate is - together with additional elsewhere unknown special business taxes (*Gewerbesteuer*) - the most important psychological factor for the entrepreneur's decision. Entrepreneurs are not so familiar with the details of taxation but all of them are allergic against high tax rates. Whenever the states take more than half of the profits the entrepreneur tries to avoid taxes, looses motivation or makes economically incorrect decisions because of tax aspects. Other psychological aspects include the tax efficiency, the intensity of the auditing, which is sometimes underrestimated by economists, the length of legal proceedings and the possibility to get an official ruling in advance.

The problems of international tax competition from the entrepreneur's view must be examined closer. A fast developing greater mobility of business functions in world trade and especially in the EEC increases the influence of tax rates on business decisions. In most cases a business site has to be constructed where the goods can be sold. The location of production facilities is mainly a question of manpower, wages and of trade unions. However, taxes may become the dominant factor. Financing and holdings are moveable. Scientists working in research and development are highly allergic against higher tax rates and also movable. The greater mobility of persons and products in the Common Market will enlarge the influence of the tax factor on business decisions. On the other hand, the necessary flexibility of the firm's organisational structure is mainly a tax question. For that reason the Netherlands, which include the capital gains in their holding privilege, is a favoured place for European holdings. On the other hand, tax havens must be viewed with caution, because some of them are built like a mouse trap. You are heartily welcomed to enter, but, you have to pay a lot when leaving.

According to my experience the question of the top rate has a differential approach in international practice. There are in fact three rates which decide upon business location. The first rate is the rate which you have to pay if you reinvest in the same entity. The second rate applies to investments in the whole international group. The third rate relates to the tax burden on dividends to shareholder. Therefore, the double taxation agreements and the taxation of foreign income and even the residence of the shareholders must be integrated in the investment decision. I do believe that

the new German double taxation policy, lowering the tax rates on dividends from 15 per cent to 5 per cent and perhaps - inside the EEC - to zero will have a graver impact on international business decisions than that of the whole German tax reform from 1988 and 1990.

Nevertheless - and this is my final remark - lowering the tax rate is good news both for the business community and for the world economy.

Thank you.

MENCK:

Our two speakers have tried to evaluate the American tax reforms of 1981 and 1986. German tax policy makers were worried as early as 1985 about a German answer to a US cut in the corporate income tax rate to 35 per cent or less. I do not dare to give a definite answer to that question even today; its solution is part of the current effort to reform German taxation of enterprises. So let me focus on its more technical effects, that is to say on a micro economic rather than a macro economic point of view. As we all know, the 1986 reform was a combination of base broadening (*inter alia* by eliminating incentives introduced in 1981) and a big cut in the tax rate. Both elements had to be considered when comparing the competitive position of a German company and an American company before and after the 1986 reform. First reactions, which have never been contradicted, indicated that tax broadening clearly exceeded the effects of the tax cut. So at least in the short run and for large portions of the economy the reform could not have a considerable negative effect on the competitive portion of the German enterprises. This would be true at least in those areas where the 1981 policy had given (and the 1986 reform had taken away) large advantages to the American competitors, i.e. in capital intensive areas. A slight improvement in the American companies' position was conceivable in other areas where capital input plays no important role, as in the service industries or in the case of smaller companies. In addition to this, a number of very technical reactions were to be expected. Thus, we predicted a high sensibility to the tax rate differential wherever mobility of profit by a more formal shifting of income from one jurisdiction to another is possible. Examples are passive investment and income shifting within groups by purposeful transfer pricing. This provisional analysis led, furthermore, to a strange paradox in international taxation: The 1986 reform did not really change competitiveness between the Federal Republic of Germany and the United States of America; it had, however, competitive effects between Germany and, for example, Great Britain or the Netherlands; indeed it reactivated European tax differentials which had been covered and neutralized for American groups operating in Europe by intricacies of the United States tax credit system; the lowering of the US corporate income tax rate made American investment in Europe quite sensitive to these intra-European tax differentials. This is a strange paradox indeed but it has been confirmed by those who are responsible for the decision-making process of multinational enterprises. There are other paradoxes in this field - among other things the effect of our own split rate system which makes it difficult to evaluate the impact of our own tax law in internationally operating enterprises.

As you know, a German committee will be coming into life in the near future in order to consider German reform of enterprise taxation. Let me stress three points today. First, the evaluation of the existing situation is still open - and this, among other reasons, because we have no clear understanding of the international impact of modest tax differentials. Secondly, there is concern regarding the growing international competition to make tax systems as favorable as possible for investment and employment. There is a challenge here, indeed - but *it should not imply* a *race to achieve the lowest possible tax rates*. Policy decisions regarding tax rates are made on the basis of a multitude of requirements and conditions. They also have a multilateral dimension. Tax differentials will thus continue to exist. But fair competition for the best and the most efficient of all systems can only be of benefit to all the countries concerned. Thirdly, there is a more technical aspect: We have to be concerned about the compatibility of tax laws competing with each other. This concern for compatibility of tax laws is illustrated by the recent changes in German policies regarding tax treaties. Dr. Flick has already given the necessary details. These changes were triggered by changes in our own German tax system. They are, however, part of the answer which we have to give to the situation created by the American tax reform of 1986.

GANDENBERGER:

From the comments I overheard during our intermission, I am sure that we shall now have a lively discussion. Let us note first that both of our commentators have taken an approach which is diverging from that of the two papers delivered this morning. In the papers of both Mr. McLure and Mr. Sinn the quantitatively more important effects of the US tax reform on international capital flows were due to adjustments of international portfolios with respect to money capital rather than real capital, whereas both discussants concentrated on the effects on direct investment, that is, above all, on real capital. The floor is now open for discussion.

KRAUSE-JUNK:

I am not disagreeing with anything the two speakers had to say to us because these are really the experts. How could one disagree with these two outstanding experts from the United States and the Federal Republic? However, I am just wondering about two minor points. First, what is to be understood under the notion 'beggar-my-neighbour policy'? When I was a student I was told that beggaring my neighbour is running a huge trade balance surplus. In fact, many of the world politicians still seem to think that way. If I remember the 'Treaty of Louvre' correctly, the Federal Republic was urged to change their international trade policy and to lower her trade balance surplus. Today we learnt that the modern notion of the 'beggaring-my-neighbour policy' seems to be running a capital balance surplus

which has a larger surplus of capital imports compared with capital exports. I am wondering how to reconcile two obviously opposing definitions of the notion 'beggaring-my-neighbour policy'. Is it completely wrong to state that, for example, developing countries also have some kind of reward, being allowed to import goods and services into the United States, as is obviously the case when considering the trade balance? Therefore, my first point is that: I don't think we can use the term 'beggar-my-neighbour policy' in two quite opposing ways. We have to decide, one way or the other. Maybe the answer somehow lies in the origin: whether it is the capital account or it is the trade account where all the imbalances have their origin. That would be something I would like to learn from the speakers.

My second point is related to the first one. Looking at the figures Hans-Werner Sinn showed us, it is somehow striking that the US obviously changed their tax policy the very moment when they turned from a net capital export country to a net capital import country. I agree completely that it is very difficult to determine when the change exactly took place because we don't know exactly how much US capital is circulating in the world. But by and large it is fair to say that there is a coincidence. Charles McLure told us that the US tax policy was outlined more or less without any relation in regard to the international scene. Is it just purely accidental that the second large tax reform took place more or less the very moment when the United States turned from a net capital exporter to a net capital importer? There could be an explanation because the United States is gaining, of course, when the world interest rates go down and it was gaining before as an exporter when the world interest rates went up.

SINN:

I have a remark concerning the 'beggar-thy-neighbour' question. In the thirties the 'beggar-thy-neighbour'policy meant a devaluation to create a surplus in the current account. The reason was that, at the time, the countries had unemployment problems which they wanted to overcome by stimulating export demand. Today the situation is different. Over the last years, the United States in effect carried out a beggar-thy-neighbour policy by providing huge investment incentives to their industry, although it is clear that they did not deliberately set out to beggar their neighbours. The policy was simply a side effect that accompanied the reform. The new variant of the beggar-thy-neighbour policy is, I think, also important with regard to the notion of competitiveness that Mr. Menck mentioned. By definition, a capital export is equal to a current account surplus, i.e. a net commodity export. Therefore, any measure that improves the competitiveness of a country in terms of attracting international capital flows will necessarily imply that this country loses competitiveness in terms of commodity sales. The United States increased its competitiveness in the capital flow sense with the investment incentives it introduced 1981. It succeeded in absorbing capital from the rest of the world. However, the mechanism by which this happened was a revaluation of the dollar and that reduced the American competitiveness in goods and services. The policy created a defi-

cit in the current account and this deficit enabled the capital import into the United States to take place. You can never have both. You cannot be competitive in terms of capital flows and at the same time be competitive in terms of commodity flows. And in which respect one wants to be more competitive I guess depends on the circumstances.
Thank you.

PEGGY MUSGRAVE:

Professor Sinn is correct in pointing out that in the short run capital import will generate exchange rate revaluation which in turn will lead to a decline in net exports to match the capital flow. However, it seems to me that in the longer run there can be structural price effects on international competitiveness. Increased capital formation in the capital importing country will increase productivity and efficiency with resulting improvements in the trade balance.

SINN:

It is true that there are changes in terms of trade when there is a revaluation. However, if we have flexible exchange rates - and I think this holds true also under more general conditions, but the simplest case is that of flexible exchange rates - then, by definition, the central bank does not buy or sell foreign currency and hence the capital import into a country is equal to a current account deficit. You cannot do anything about it. Economic policy can either try to improve the trade balance or the capital balance, but not both. This is true regardless of all the effects that are summarized under the headings 'terms of trade effects', 'multiplier effects' and the like.

LEIBFRITZ:

Prof. McLure sees the origin of international disturbances in goods and capital markets in the 1981 tax reform, and I think Prof. Sinn also agrees with that. But in 1981 there were not many economists in the United States, and certainly also not in Europe, who foresaw the effects we have since seen. In fact, the 1981 tax reform was welcomed by economists from all schools as beneficial to productivity growth in the United States. Demand-oriented economists underestimated the supply effect on investment, and supplyside economists overestimated the effect on private savings. The effect on the budget was also underestimated at least by the adherents. I recall the prominence of the Laffer curve. There was no economist at the time who expected such a strong effect on the dollar really coming from the tax side. This brings me to my question to Mr. McLure: What effects do you expect from the 1986 reform and what effects have we seen so far? Are there still important effects to come? So far I think we haven't seen many of the expected effects. I also agree, in general, with Prof. Sinn's paper and with his statement, but I wonder about the empirical relevance of the theoretical tax effects. His analysis implies that other things have remained equal, which is never the case in the real world. During the period analysed there was a recession in the United States and a recession later in Europe. There were important changes in monetary policies in the United States and in Europe, and I wonder if these non-tax effects were not also very important. How can the development of investment in the United States in the last three years, i.e. after the 1986 tax reform, be explained if not by non-tax factors, and also the development of the dollar and of US capital imports? The question is: What is the weight of tax policy in the real world as compared to non-tax factors?

ZEITLER:

I'd like to come back - as Dr. Leibfritz did before - to the basic question of this symposium: the practical use of experience with tax differentials. I think the question is relatively easily answered if you look at the *capital market*. The capital market is highly sensible. It is transparent, so it can be easily influenced by tax differentials and if you look at the capital market you see the impact of tax differences. We in Germany have had some experience in this sector with our 10 per cent *withholding tax*. As Professor McLure noted the United States did it the same way some years ago with the 30 per cent withholding tax. My question is where, and up to what extent do tax differentials, not on the capital market but on the market of *direct investment*, influence to the competitiveness? There are many other factors which are important on the market of direct investment and which are not so important on the capital market. For instance on the market of direct investment the general attractivity of a country, its infrastructure, its education system, its environment conditions, the attractivity of a country for the managers and their families play important roles. If you consider all these other factors, is there any analysis, is there any empirical evidence proving to what extent - if the same tax base is roughly supposed - the difference of *tax rates* - corporation tax and individual income tax - is of real influence to the competitiveness of a country?

Perhaps our question could be answered by the representatives from the United States. As far as I know, there are tax differentials, for example, between New York and Connecticut. Connecticut doesn't have any individual income tax on the state level whereas New York has a very high income tax on the state level. Is there any evidence that a great amount of people shifted their residence from one state to another and is there any evidence demonstrating at which "distance" between the tax rates this tendency begins - i.e. 5 percent, 10 per cent or even more? The answer should give us some practical point of reference in our discussion in Germany and in other European countries of the European Common Market where the tax question is really highly discussed.

RICHARD MUSGRAVE:

I like to make a couple of points, first, regarding the way in which the 1981 tax cut stimulated the economy. A major point in Prof. Sinn's exposition was that the tax cut could not have increased consumer expenditures because people are not stupid; they would thus realize that they would have to pay higher taxes later to service the debt, and save in anticipation thereof. This is the so-called Ricardo effect, a proposition in which Ricardo himself did not believe and which it seems to me involves a very unrealistic behavioral assumption. Nor did matters work out that way, as the personal savings rate declined to record lows during the eighties. Keynes after all was no fool. What happened was that the combination of an income tax cut with rising defense outlays produced a massive increase in demand with resulting expansion. In the process, it also generated rising interest rates, which in turn attracted capital from abroad and raised investment.

This is not to deny that accelerated depreciation also played a role, but I do not see it as the major factor. By the end of the seventies and in the early eighties inflation had reached a high rate (for US tastes at least) and this reduced the value of depreciation. To a significant degree, the acceleration of depreciation merely served as a substitute for what would have been a superior solution of indexing.

MCLURE:

I thought it might be useful to comment on a variety of things. First, with regard to Dr. Flick's comments, I would agree that the depreciation rate is not the only important question. It does matter what is being depreciated, and many of the 1986 changes in the U.S. did affect that kind of question; indeed, there are many changes that constituted base broadening in the corporate sector that we have not even talked about. Basically we are talking only about depreciation and investment tax credits. Tax rates are also not the entire story. With regard to this point, I would note that many businessmen do understand, if only implicitly, what Hans-Werner Sinn was saying about the taxation paradox. Certainly in 1985 when we are trying to sell Treasury I, there were many many businesses that would clearly have preferred high tax rates and very generous depreciation and investment type credits. So far as operation of a business is concerned, businessmen are allergic to high tax rates, because high tax rates do take away money at the margin and they provide disincentives for efficient operations. But when you think about investment decisions, high tax rates can actually work in your favor; you may prefer high tax rates because you get more benefit from the depreciation allowances. Let me just add a comment about something I think is curious. I have been struck by the extent of which the whole world seems to think they have to react to the 1986 tax reform - which most economists in the United States say are terrible for U.S. investment. Most of the world did not respond to the 1981 reforms, which were beneficial in general for U.S. investment. I keep wondering, does nobody understand?

I think that Willi Leibfritz is right that almost everyone welcomed the 1981 Act and very few expected its full effects. But I find the mention of the Laffer curve somewhat puzzling. I do not know of any serious economist who believed the extreme version of the Laffer curve that within the range of tax rates we are operating you can cut tax rates and raise revenues. Certainly you can recoup some of the revenue from supply side effects. But I do not know of anybody who really thought that we could balance the budget by cutting taxes.

I have a question for Hans-Werner, or perhaps for Dick or Peggy Musgrave. I have been curious where one finds the first widely known reference to the kinds of arguments that Hans-Werner has made in his papers, which I repeat, and which Larry Summers and others have made. Once you hear what Hans-Werner is saying about the national accounts you know it is true; if you are going to import capital you have to have trade problems. I wonder when this was first really pointed out in a way that got attention. I think it was not before 1981, at least in the U.S. I am embarrassed not to have seen it myself.

Finally, I would like to say something I have not said before which should be of interest to a conference such as this. When we were developing the U.S. Treasury Department tax reform proposals to President Reagan, there were seven people in the meetings with Secretary Regan. There were the Secretary of the Treasury, who did understand tax policy, the Deputy Secretary, who did not, and the Assistant Secretary for Tax Policy who clearly understood tax policy; he is a lawyer, not an economist. I was the Deputy Assistant Secretary for Tax Analysis. Then there were 3 others, the Assistant Secretary for Business Affairs, the Assistant Secretary for Congressional Affairs, and the Assistant Secretary for Public Affairs. (About halfway through the process Beryl Sprinkel started attending the meetings. He was the Undersecretary who dealt with international matters. But in the early stages when we were formulating the basic outline of Treasury I, he was usually off in Tokyo or Bonn or someplace else, and so he did not attend.) I think it is important to understand that at least two potentially important Assistant Secretaries did not attend these meetings. One was the Assistant Secretary for Domestic Finance and the other was the Assistant Secretary for International Affairs. It is worth emphasizing that until two days before the report became public the White House had no idea what was in it. The office of Management and Budgeting had never seen it and had never discussed it. The Special Trade Representative and the Commerce and State Departments did not know what was in it. In other words, the only agency that was involved in Treasury I was the Treasury Department. Now, that may or may not be a good way to make policy, but it is how the policy in Treasury I was made.

SINN:

I would first like to comment on Richard Musgrave's points. I think we do not really disagree on the strength of Ricardian equivalence. I also have my doubts. My point is simply that all the people cannot be stupid all the time.

If some people are not stupid, then they might react in line with the equivalence theorem. I do not deny that the huge budget deficit created Keynesian multiplier effects that contributed to the high interest rates and the capital imports. My point is simply that this was not the only effect. It is even unclear whether this was the dominant effect.

Another remark of yours refers to the paradoxical effect of tax cuts. You agree that with partial expensing a tax cut has an effect on investment but you argue that with full expensing there should be no effect since the effective tax rate is zero. In my opinion, there is no real problem because, as I said, we cannot, when we want to understand international capital movements, focus on effective tax rates. It is true that the effective tax rate with full expensing is zero when the effective tax rate is measured as the difference between the pretax return to capital and the net-of-all taxes return a saver receives. However, the crucial tax rate for the allocation of any given world capital stock to the different countries - I focus on portfolio investment - is the difference between the pretax return to capital and the gross, not the net, market rate of interest. With full expensing this tax rate is not zero, but negative. So there is a negative investment tax rate and a positive savings tax rate which just cancel out. The overall tax rate according to the first definition is zero. Suppose you reduce the general level of taxes. What you do then is that you make this investment tax rate less negative then before. At the same time you reduce the savings tax rate, which is a positive tax rate. It remains true that the effective tax rate as it is usually defined equals zero, but with any given market rate of interest, the incentive to invest in a particular country is declining. So there is no paradox.

This is a very theoretical answer which probably not everyone in this room will understand because it is pure economic theory. What I like more is the portfolio explanation which is more easily accessible to verbal reasoning. With accelerated depreciation a tax cut means that a financial investment a firm might undertake elsewhere in the world is favored. But it also means that the real investment the firm can undertake at home is favored. The question where the money goes, whether there is an incentive to invest more or less at home, depends on which alternative is favored more strongly. Think of Siemens. We all know the famous Siemens-effect. Siemens is operating more like a bank than a real firm. It has tremendous investments in financial assets in the rest of the world. If the tax code required true economic depreciation in Germany, then a general tax cut would not affect Siemens' choice between investing in chips and investing in American bonds. If the tax code allowed for depreciation lower than true economic depreciation, then a tax cut would favor the investment in chips more than the investment in bonds. But if we have accelerated depreciation, then there is a stronger incentive to invest in foreign bonds than in domestic chips. And this is what creates this perverse effect. To be sure, the strength of this effect is open to doubt. However, in qualitative terms the direction it is taking is clear. Therefore I find it impossible to argue that the American tax cuts in themselves create a tendency to reshuffle the world capital stock in favor of American investment. I do, of course, agree that the tax cuts favor direct investment in the United States - this is a completely different issue - but they do not favour financial flows into the United States which then would also induce real investment as a sequel.

Financial capital flows precede and cause real investment flows. Financial flows and the resulting flows of real capital are much more important than direct investment flows. I wish to stress this in particular because I address lawyers for whom it is natural to focus on direct investment which creates more complicated legal problems than financial investment. Economists tend to emphasize the role of financial investment and assign the more important role to it. When financial investment dominates, the perverse effect that I explained will necessarily follow.

Let me just make two further comments. Herr Leibfritz, I agree with most of what you said. Just one point concerning the underestimation of the budget deficit in 1981. We have heard from Charles McLure that insiders really did not believe in the Laffer curve. The proof of this is given by the official estimates that were published in 1981 together with the Tax Reform Act. These estimates implied that there would be a 700 Billion Dollar budget deficit in a five year period, a figure that in retrospect turned out to be very accurate. There is nothing in the official estimates about the Laffer curve, although, of course, many economists talked about it.

I also agree that there was more than just the tax effects. Of course there was more! There was, in particular, the role of monetary policy. Monetary policy in the United States had been very restrictive to high inflation throughout the seventies. It certainly contributed to the high interest rates; no doubt about that. But the question then is, how could real investment nevertheless be so high. I think the investment incentives and the tight monetary policy worked together quite well and enabled the American economy to withstand the high interest rates. The only unfortunate thing is that the high interest rates created problems in the rest of the world. Our interest-sensitive sectors, the construction industry for example, broke down as a result of that.

A final point concerning Dr. Flick and Dr. Zeitler. What determines direct investment? I think one misconception which many people have is that direct investment depends to a large extent on the tax burden imposed on repatriated dividends. I think economic theory in recent years has provided evidence that common beliefs may be very misleading. I refer to the so-called tax capitalization view. The essence of this view is that taxes on dividends do affect the value of shares, but they do not greatly interfere with a firm's real investment decision. Because the real investment usually is financed with retained earnings, dividend taxes are fairly neutral. Dividend taxes interfere with the firm's investment decision only to the extent that new share issues are used as a source of finance. However, empirically, this is rather unimportant. Even international direct investment is typically not simply a movement of equity capital from one country to the other. It is not normally the case that there is a parent company that puts money into the subsidiary. Of course I do not want to deny such a possibility but the majority of direct investment is profit retentions within existing subsidiaries. For example, if Opel retains its profits, this is direct investment. If profit retentions within existing subsidiaries are the major channel for direct investment, then the tax burden on dividends is of minor importance. Charles McLure has also pointed that out. In the Treasury I proposal which he wrote, there was a suggestion for reducing the double taxation of dividends. However, this suggestion was eliminated because it would only have meant huge revenue losses for the US government, while investment would not have been stimulated. There is an important distinction between taxes on old capital and taxes on new capital. A tax policy that wants to stimulate growth should lower the taxes on new capital, not the taxes on old capital. Dividend taxes are taxes on old capital. Thus there is no point in removing them.

PUKATZKI:

I have a question for Professor McLure. Having been in South East Asia for seven years I certainly have an appreciation for your point regarding 'begging-your-neighbour' because the money flows out of the country where, after all, it is needed most. The fact that many times it ends up in the United States is just incidental. For the people I know, security of their money is most important. Secondly, they look for the highest possible return. If the United States offers them a better deal than other countries, that's where the money goes.

The question I have for you, Professor McLure: What in your opinion can be done about this dilemma? You think that something like the GATT model may work. I doubt this seriously. Do you have any other suggestion as to what might work?

FLICK:

Two further remarks.

The British tax reform showed us that cutting tax incentive (more than 100 per cent depreciation) and lowering the tax rate at the same time produced a higher new investment. This British experience - I presume - does correspond with the US experience.

That there is more capital movement in portfolio than in direct investment may be true. But I am not sure if there is a lot of taxation of portfolio investment. In Germany more than 50 per cent of portfolio investment is not taxed. A lot of people are looking for investments with the zero rate of withholding tax. Direct investment on the other side is always taxed and often even twice in international business. Therefore not the taxation but the nontaxation is the question in portfolio investment; only direct investment is interested in tax rates.

MCLURE:

I think these are two very good comments and questions. First, it was very convenient for the US Treasury Department that the UK acted first. It gave comfort to Donald Regan that Nigel Lawson had already gone down the road of eliminating tax preferences to investment. Indeed, we were able to use the words written in Britain to great effect. They made quite clear that the Inland Revenue in the United Kingdom felt that investment was being motivated too much by tax considerations and not by real considerations. That was very important for us, both because of the non-neutrality of tax-induced investments and also the perception that the system is not fair. Leaving aside whether or not it is unfair, a situation where high income taxpayers and corporations pay no tax is perceived as being unfair. That was really important.

Willi Leibfritz asked earlier about the effects of tax reform. I would not pretend to answer this question definitively, but it appears that the US has not fallen apart as many commentators were suggesting would happen before tax reform. The US seems to have survived tax reforms at least up to now.

Peggy Musgrave may have as much to say about the next question as I do because she is also very concerned about international tax competition. The estimate that half of portfolio income in Germany is taxed is the highest estimate I heard in the last week. I have heard estimates for interest income of 10 to 20 per cent. This is relevant for a number of points. First, there is a big debate about whether or not various countries should shift to a system of direct taxation based on consumption, rather than on income. Some of those who oppose this would see the shift as entailing a reduction in the taxation of capital. I would suggest there would not necessarily be a reduction in the taxation of capital. I would guess that very few taxpayers leave any money on the table when it comes to interest deductions; fairly nearly 100 per cent of interest expense is deducted, except by individuals who do not itemize deductions. On the other hand, we know the government is leaving a lot of money on the table when it comes to taxing interest income. This says that a worldwide move to consumption taxation would not necessarily reduce the taxation of income from capital. This is an empirical question, but I would suggest that a switch to a consumption based tax may not reduce taxation.

This does not mean that we should adopt such a system. We need to choose between worldwide systems of taxing income or taxing consumption. If we chose the income tax version it takes substantial international cooperation. We cannot hope to tax income with each country unilaterally providing loopholes in order to attract capital. We all speak about taxing income and in fact we do not. We do not tax at source because we fear competitive problems. But we do not necessarily tax at residence for administrative reasons; certainly we cannot tax at residence without substantial cooperation. This leads us to the need for substantial cooperation if we want to have an income tax. The next question is, how much cooperation that requires and in what form. One way of putting it is to ask how long the European Community will tolerate Luxembourg. How long will the developed world continue to tolerate various tax havens. It is going to take a lot of cooperation to eliminate the ability of what I call tax bandits to take advantage of the rest of the world. (With Noriega having his problems recently, there may have been a shift in the tax haven business out of Panama.)

SINN:

Just one comment on Dr. Flicks remark.

I appreciate this comment because it is certainly true that interest income is to a large extent untaxed when it comes to individuals. It is also true that the firm may not have enough equity capital to be confronted with the choice between an internal investment and a capital market investment. There are just two remarks that I would like to make.

The first is that international financial and portfolio investments primarily take place between firms, banks, and other financial intermediaries. These institutions certainly cannot cheat as a easily private household can. My second point is more important. To understand the investment decision of a firm, it is not really necessary to think of a choice between a real investment project and a capital market investment, and it is by no means necessary to focus on an equity-rich firm. Consider an indebted firm instead. In fact, most firms are indebted. The indebted firm has the choice between redeeming part of its existing debt and investing in its real assets. But redeeming one's debt is about the same as making a financial capital market investment. Thus the reasoning which I presented to explain why a tax cut will not induce a capital import and may even have the perverse effect of inducing a capital export does not require the assumption of equity-rich firms. It is equally valid for debt financed firms.

Thank you.

MATTAUSCH:

I'm afraid I cannot discuss the topic in such a sophisticated or scientific way, however, as a man with practical experience I would like to say that I'm in agreement with Mr. Flick's statement. It is my personal feeling that it is a difference whether we talk about portfolio investment or about direct investment.

As far as direct investment is concerned, I would like to make clear that in practice the main attention is not directed on the tax base. There are two criteria: the tax base and the tax rates. Regarding tax bases it is difficult to compare them in detail. To work out a comparative paper for the management who has to make the investment decision is not easy; and it takes time. You do not only have to work out the differences in the tax laws of the various countries which you compare. Rather, it is as important to look at the real situation, how the law is practiced. Recently this whole situation concerning the tax base was discussed controversially in Germany.

Therefore, in the case of an investment decision during the first considerations, much importance is attributed to the tax rates. Certainly, taxation to management is one point among other points. First of all comes the question if business could be done and if profit could be made in the country where you are going to invest. Then the percentage of the tax rate is important because to a manager who has to decide whether to make an investment it is easy to compare the rates, even if he is not an expert in tax matters. Therefore, as already mentioned above, more importance is given to the tax rate than to the tax base if the manager has to decide about the attractivity of a country regarding the decision of an investment. In this connection the tax rates get a high 'emotional' importance and therefore they should be low.

MENCK:

There is still an open question by Dr. Zeitler: What are empirically the results of existing state tax differentials in the United States? This is in fact a major question. Having heard Mr. Mattausch's comments I may add another question: Are there any efforts in the United States to limit these tax differentials - e.g. by imposing on states an upper limit to their internal state taxes?

RÄDLER:

Another issue which has not been touched so far is inflation. If we look at effective tax rates today the German individual investor in bonds will easily pay an effective tax rate of more than 100 per cent. That is very easy. If he gets 7 per cent interest, which is already on the high side, and he pays the marginal rate of 56 per cent and 0, 5 per cent non-deductible net worth tax he is below the current rate of inflation of 3 per cent. I think this is really the main issue as far as tax neutrality *vis-à-vis* the individual investor is concerned. If you consider these figures, it is more easily understandable why many private investors are evading tax.

Maybe I should ask another question which goes in the same direction. Namely, how would you define a neutral tax base?

GANDENBERGER:

If there are no further comments I would like to ask the two speakers to make a concluding statement.

SINN:

The question about the empirical relevance of tax effects is an appropriate question. I must admit I am not an econometrician. However, there is a vast econometric literature. I would like to mention names like John Shoven, John Whalley, or Michael Boskin. These authors study the empirical effects of taxes on the allocation of capital by means of econometric models. They belong to a branch of literature that dates back to the 1960s and started with the seminal work of Harberger. There must be many dozens or even hundreds of empirical investigations into the economic roles of taxes. This literature does not give the impression that taxes are unimportant. If taxes were unimportant, then we would not have to worry about the German tax reform at all, right? Then we would not have to worry about international competitiveness and we could just run any tax system with tax rates as high as we like. In this case we would not be at this conference. There are certainly strong economic effects resulting from tax base and tax differentials!

Inflation, to be sure, is a very important point. We haven't talked about that. It is true that when there is inflation and historical cost accounting, as there is in Germany and nearly all other countries, then an additional tax burden is imposed on real investment. The higher the inflation rate the higher the effective real burden imposed by the tax system, and it is clear that inflation will create international distortions. For example, it can be shown that if one country has higher inflation than another, there will be a capital export flow from this country because capital tries to avoid the differential inflationary tax involved.

GANDENBERGER:

This has been a lively and interesting discussion. Thanks to all of you, and thanks in particular to our two speakers.