



Newsletter 1-91

THE INDUSTRIAL INSTITUTE FOR ECONOMIC AND SOCIAL RESEARCH

This is the first issue of *IUI Newsletter* from the Industrial Institute for Economic and Social Research, Stockholm, Sweden. It will be published twice a year. IUI also publishes a Swedish newsletter, *IUI-Bladet*.

We have two ambitions with the IUI Newsletter. First, we want our research results to reach a wider audience. Second, we want to make some of our results known more rapidly than is possible through regular scientific publication.

The IUI Newsletter will also highlight what is currently happening at the Institute; conferences, visiting researchers and changes in the IUI staff. New at the IUI staff is Tho-

mas Andersson, Ph.D. from the Stockholm School of Economics. He will be responsible for research in international economics. Thomas Andersson is currently visiting the Institute for Monetary and Economic Studies at the Bank of Japan, Tokyo, and is studying the effects on the EC internal market on trade between Japan and Europe.

The spring of 1991 is very international at IUI. In February professor Gérard Ballot from Université Pantéon Assas Paris II visited the Institute. He held two seminars on micro-macro modelling and worked with Erol Taymaz and Gunnar Eliasson on the Moses-model (see

page 2). A Danish economist from Aalborg University has spent 5 weeks at the IUI working on his thesis "National Finance and Technological Development". In March an international seminar on *Capital; its value, its rate of return and its productivity* was an occasion for many foreign scholars to visit IUI (see page 2). In May we will host two Russian economists from The Central Institute of Mathematical Economy, (CEMI) Moscow, and Kenneth Burdett, University of Essex.

Jeannette Åkerman,
editor

Who needs a technology policy?

midst growing concern over sagging productivity growth in the Swedish economy, voices are being raised for a more active public involvement in stimulating the use of new technology. During the past decade, subsidies at a cost of roughly one billion SEK/year have been granted to firms' research and adoption of new technology. In a forthcoming IUI book entitled *The Art of Encouraging Invention: A New Approach to Government Innovation Policy* Stefan Fölster examines how effective government support has been.

Subsidies have little effect

In an empirical study based on a survey of



Stefan Fölster

Swedish firms Fölster shows that the effectiveness of R & D subsidies is limited. General subsidies, such as tax credits, are likely to have very small effects. Specific subsidies, such as project grants and subsidized loans, induce more new R & D. Table 1 shows the effectiveness of government subsidies to R & D in Sweden. It is measured in terms of the ratio of additional R & D induced by the subsidy to the net cost of the subsidy. That means for example that 1 million SEK in grants in large firms, which is the most commonly used subsidy, induced 400,000 SEK of new R & D.

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The largest effect on new R & D was achieved by subsidies that are given in the form of equity investments in R & D ventures. This is mainly due to the fact that firms hesitate to accept such equity investments for projects which have a high probability of returning a profit. Accepting an equity investment would mean that the profit has to be shared.

Subsidies in the form of public equity in investments, while being potentially most effective in inducing new R & D, do face a number of restrictions. One is that

Table 1
New R & D induced by the subsidy
in relation to net subsidy costs

	Large firms	Small firms
1. Tax credit	0.2	0.1
2. Grants	0.4	0.5
3. Loans	0.4	0.6
4. Guarantees	0.5	0.5
5. Equity	0.7	0.9

their use is restricted to R & D projects that are launched in the form of independent stock companies.

Private companies the best way

A problem with R & D subsidies is that the subsidizing agency may not have the competence to choose the best projects or to administer the public equity stake. Small venture firms require a great deal of help with management and establishing contacts. Since private venture capital firms often have more experience in coaching

International IUI seminar on CAPITAL



Curt Nicolin in discussion with researchers at the IUI conference in March. From the right Curt Nicolin, Jeannette Åkerman, Bo Carlsson, Anders Klevmarken.

The nature of capital in the production process of firms and in the economy has long been on the research agenda of IUI. The nature of capital and its composition have changed considerably over time and the market valuation of firm assets has become increasingly more important in the investment decision of firms.

Dr. Curt Nicolin, Chairman of the IUI-board, has long taken a special interest in IUI research on capital. On the occasion of Dr. Nicolin's 70th birthday we therefore organized an international seminar under the title *Capital: Its value, its rate of return and its productivity*. Dr. Nicolin has initiated a project at IUI under the same title. Curt Nicolin is also Chairman of ASEA AB, ESAB AB, Fläkt AB and Incentive AB and Swedish Chairman of SAS.

Among the participants of the conference should be mentioned Ragnar Bent-

zel, Uppsala University, Ernst Berndt, MIT, Bo Carlsson, Case Western Reserve University, Michael Intriligator, UCLA, Lawrence Lau, Stanford University, Jan Södersten, Uppsala University, Lars Werin, Stockholm University and Clas Wihlborg, New York University.

Papers from the seminar and the complete program can be ordered from IUI, Marie-Louise Falk, Box 5501, S-114 85 Stockholm, Sweden, phone 46 8 783 84 05 or fax 46 8 661 79 69.

high-tech ventures, the best form of subsidy may be to channel public equity investments via private companies. These investment companies would be able to invest public funds in projects they find too risky to place their own money in. Once the project has proceeded to a less risky stage an investment company will add its own funds in order to acquire a

share in the profit. Thus the investment companies handle the public investments in return for gaining access to less risky investment objects.

The Art of Encouraging Invention: A New Approach to Government Innovation Policy, Stefan Fölster, IUI book to be published in May 1991.

The Swedish Micro-to-Macro Model MOSES

The large scale Micro-Macro (M-M) modelling project at the Institute is gradually being documented. Erol Taymaz has modified and updated the model and has transferred it to PC. Erol Taymaz has a Ph.D. from Case Western Reserve University, Cleveland, Ohio, and has been working at IUI since 1989.

The M-M model is currently used in two ongoing IUI studies on (1) the rela-

tionships between technology developed at the micro level, economic organization and macroeconomic growth and (2) the efficiency of information processing in the economy.

As part of the final documentation of the model, *MOSES Database* is currently being edited for publication and *MOSES on PC; Manual, Initialization and Calibration* by Erol Taymaz is in progress.

If you are interested in further documentation on the model, please send your name and address to IUI, Marie-Louise Falk, Box 5501, S-114 85 Stockholm, Sweden, phone 46 8 783 84 05 or fax 46 8 661 79 69.

EC - a threat or a possibility for Swedish industry?

The impact of the harmonization efforts within EC, economically and politically, stretches far beyond its member countries. In fact, the implications, with regard to investment patterns and the allocation of production, is perhaps more clearcut for outsiders. Two IUI studies by Pontus Braunerhjelm deal with the effect of the EC internal market on the Swedish industry. One studies manufacturing industries and the other concentrates on subcontractors and small companies.

Investment boom in EC

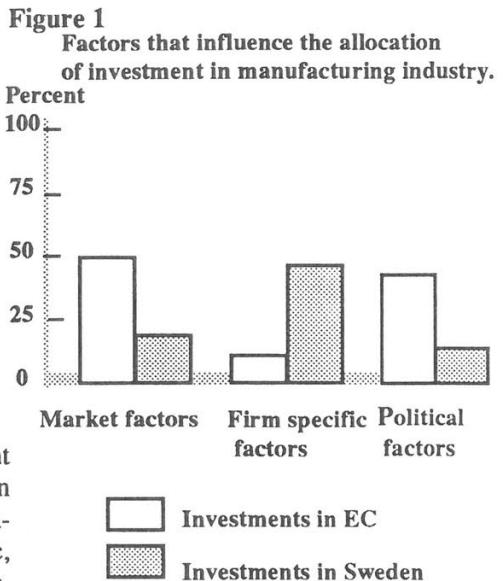
Swedish firms have reacted strongly to the 1992 program. Investments, predominantly by large Swedish multinational firms, have surged into EC since the mid 80s. The direct investments increased with 400 % between 1985 and 1988. Different factors, like market factors, political factors and firm specific factors, influence companies' investment decisions. Braunerhjelm has studied the impact of these factors on the allocation of investments between Sweden and the EC. As shown in Figure 1, political and market factors support increased investment within EC. Firm specific factors, particularly scale economies in existing plants, favor continued investments in Sweden. This could have structural implications for the Swedish manufacturing sector.

Small firms and subcontractors have up to now only to a small extent invested abroad. There are several reasons for this. One is that small companies have limited experience of production abroad. Differences in competence is another possible reason, the labor force in large firms contains more qualified employees than in small firms and subcontractors. Table 2 shows that multinational firms employ twice as large middle management staff than do subcontractors. A likely interpre-

tation of this is that middle management and white collar workers are engaged in the service sectors, in specialist information functions like R & D, marketing, etc, which are crucial for internationalization.

Subcontractors threatened

Braunerhjelm's study shows that subcontractors have on average lower profitability than other firms. As Europe becomes a single market, competition between subcontractors will become more intensified. The study predicts that a significant part of the Swedish subcontracting industry, mainly the small firms, will not succeed in adjusting to the new Europe and will go out of business. This could have drastic long run effects on the whole Swedish economy.



EC 1992 is expected to cause significant structural change within the Swedish economy. The brunt of the adjustment burden, however, will be concentrated to the medium and small sized firms since they do not have the competence to exploit new possibilities through investing abroad.

Svenska industriföretag inför EG 1992 - Förväntningar och planer (1990) and *Svenska underleverantörer och småföretag i det nya Europa*, (forthcoming) by Pontus Braunerhjelm

Table 2 Percentage of manpower in different positions in Swedish subcontractor firms and multinational firms, 1989

	Subcontractors	Multinational firms
Managers and executives	3	2
Specialists and middle management	7	11
White collar workers	15	29
Skilled workers	35	25
Others	40	33
Total	100	100

IUI Books

IUI books can be ordered from: Industrilitteratur, Box 5506, S-114 85 Stockholm, Sweden, or by telephone: 46 8 783 84 81 or 46 8 783 82 14, and telefax: 46 8 783 05 19. Please state the book's publication number.

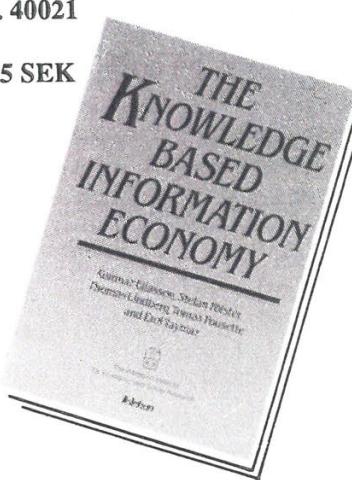
The Knowledge Based Information Economy

by Gunnar Eliasson, Stefan Fölster, Thomas Lindberg, Tomas Pousette and Erol Taymaz

Innovation, economic coordination and diffusion of knowledge are found to be dominant, resource-using activities in the modern knowledge-based information economy. This is explained by the extent of service. If manufactured goods and related services are properly measured, their share of GNP will be close to 50 per cent. This share has not decreased over the post-war period. Analogously, the definition of capital should be expanded to include also soft capital items like technical knowledge, marketing investments etc.

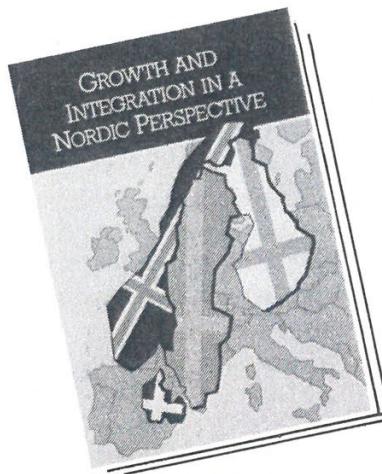
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Growth and Integration in a Nordic Perspective

The book surveys the close-knit relations between the Nordic economies and describes recent economic development and structural change. Growth performance and prospect until 1993 are presented by country. The challenges and opportunities posed by the European integration for the countries are specially studied.

The book is produced by four Nordic research institutions: IUI in Stockholm, ETLA in Helsinki, IFF in Copenhagen and NØI in Bergen.

Publ. No. 40020

Price: 320 SEK

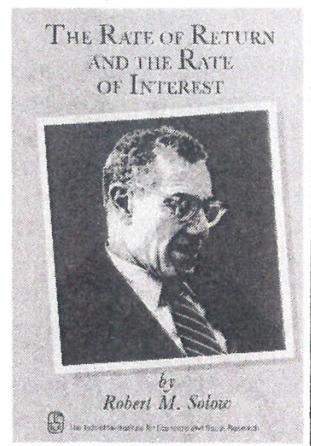
The Rate of Return and the Rate of Interest

a lecture by Robert M. Solow

Robert M. Solow, Nobel Prize Winner in Economics in 1987, gave the traditional IUI lecture in 1989. The relations between the rate of return, the rate of interest and the return of capital are clarified. New developments in economic theory incorporating investments in human capital and technological progress into models of growth are discussed.

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profit research institution, founded in 1939 by the Swedish Employers' Confederation and the Federation of Swedish Industries. Its objectives are to carry out research into economic and social conditions of importance for industrial development.

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