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EIB-Information

Historical overview of EIB borrowing operations

To say that the EIB borrows to onlend may be stating the obvious. The degree to which the one activity is the logical extension of the other is however amply illustrated by the brisk growth in EIB borrowing in recent years in line with the upturn in the Bank's lending operations⁽¹⁾: by the end of 1985, aggregate borrowings raised by the EIB since its foundation totalled 32.25bn ECUs⁽²⁾, of which 5.7bn had been raised in 1985 alone.

The EIB has carved itself a position among institutional borrowers second only to the World Bank. Rather than confining itself to stepping up its calls on the markets in sheer volume terms, it has also widened the spectrum of currencies raised, markets broached and borrowing techniques deployed. In the process, it has managed to accelerate the tempo of its calls for funds and to maintain its high credit rating, while continuing to ensure a favourable reception for its paper on the markets.

Borrowing techniques

The EIB often gives the impression of being a fairly traditional institution in terms of lending and borrowing techniques. Although it is true that the Bank has had frequent recourse to fixed-rate, long-term issues, conventional by definition, it has also displayed versatility in adapting to market fluctuations in the face of occasionally straitened economic and monet-

ary conditions. This adaptability to changing circumstances has enabled the Bank both to cater for increased demand from its borrowers and to obtain even finer terms for its own borrowings. A non-profit-making institution, the EIB has managed to offer borrowers attractive rates and maturities, chiefly by virtue of its first-class credit rating ("AAA" on the American market) and the acknowledged acumen of its capital market experts.

In its capacity as an almost permanent borrower approaching the markets for large amounts, ever since its maiden issue in the Netherlands in 1961 the EIB has never lost sight of the need to adopt a flexible approach. Tailored to individual markets, the aim of this approach has always been to obtain the finest possible terms available at the time. The increasing level of its requirements has prompted the Bank to vary its strategy, diversify its fund-raising techniques, offer different maturities for its borrowings and widen the range of both the currencies of its issues and the

In brief...

A particular feature of the European Investment Bank is its dual role as both a Community and banking institution. Its task as a Community institution is to promote European integration, a goal which it strives to attain by deploying banking techniques: serving as intermediary between the capital markets and investors, the EIB borrows to onlend. A historical overview of its borrowing operations is provided in the article opposite which also reviews techniques used and markets approached.

As part of the task assigned to it, the Bank finances investment of priority importance for the Community. Hence, the majority of its loans continue to benefit regional development, despite a certain easing of activity under this heading in relative terms over the past few years. Since the first oil shock in 1973, a sharp upturn has been recorded in lending designed to attain Community energy policy objectives; in the 1980s, financing for both advanced technology (see article on p. 5) and environmental protection has been added to the EIB's priorities; loans for environmental protection, for example, have headed renewed EIB lending in Germany (see article on p. 4).

Entries are invited for
The 1987 EIB Prize
see page 8 (repeat announcement)

⁽¹⁾ The EIB lent 7.2bn ECUs in 1985, of which 5.7bn ECUs was tapped from the proceeds of its own borrowings, almost 960m ECUs came from borrowings raised on the capital markets by the Commission of the European Communities under the New Community Instrument (NCI) and 75.9m ECUs from budgetary resources (risk capital and "soft" loans made available outside the EEC). The balance was drawn from the Bank's own funds, i.e. the paid-in portion of its capital and reserves built up in line with statutory requirements and decisions of the Board of Directors.

⁽²⁾ These amounts have been calculated in ECUs, the unit of account adopted by the Bank for its operations. The actual currency or currencies in which the different operations concerned were denominated does not therefore emerge from the figures given here.

markets approached, notably through the gradual development of the Eurocurrency market. Last but not least, it has kept a close watch on the performance of its bonds on the secondary market with a view to paving the way for future issues.

Notwithstanding the plethora of new borrowing formulae and securities spawned by the markets in recent years, the Bank's concern to keep abreast of developments has not added to the proliferation of new and sometimes sophisticated instruments. The Bank has therefore had scant recourse to issues of bonds with warrants attached and has stayed clear of zero coupon, bonus and indexed issues.

The Bank goes about placing its bonds on the market in one of three ways: it can enlist the services of established syndicates specialising in certain currencies; it can appoint a lead manager for the purpose of setting up an ad hoc syndicate, or it can invite banks to tender for an issue, an arrangement which ensures that its paper is taken up at the most advantageous cost.

Needless to say, **long-term operations** constitute the cornerstone of the Bank's borrowing strategy given that the term of its loans normally ranges from 5 to 20 years. (Although most loans tend to occupy the 8 to 12-year band, 20-year loans are not exceptional. For some time now the EIB has also enjoyed the scope to offer up to 30 years in certain rare cases). Public issues account for the lion's share (about 70%) of funds raised and garnered more than 4.2bn ECUs in 1985. As for private borrowings, these brought in some 1.1bn ECUs in 1985, mainly through the issue of negotiable securities placed with a bank or group of banks, or directly with institutional investors such as insurance companies, unit trusts, pension

funds, savings banks, etc. In addition, the EIB has occasionally tapped modest amounts via interbank operations: 389m ECUs in all.

Another way in which the Bank has made use of the scope for mobilising liquidity has been through the allocation to third parties of participation certificates offering a share in its loans and carrying its own guarantee. The currencies, amounts and maturities of such operations, totalling 10.6m in 1985, are agreed on a case-by-case basis.

Dating from 1984, **short-term borrowings** are an altogether more recent phenomenon linked to variable-rate loans. The Bank used this facility to raise 374m ECUs in 1985 via a commercial paper programme.

The 1984 financial year was also one which saw the Bank issuing short-term notes as part of its liquidity management.

Currencies and markets

In view of the fact that, more often than not, the EIB provides its loans in a mix of currencies, it is important for the Bank to diversify its borrowings accordingly. Its borrowers base their choice of funds on a combination of factors: their own needs and the relative appeal of the currencies concerned in terms of interest rate, length of term and presumed exchange risk. They contract to settle interest payments and principal repayments on their loans in the currency or currencies originally received.

The **currency breakdown** of the Bank's borrowings depends not only upon borrowers' preferences but also upon conditions obtaining on the currency market(s) in question, i.e. whether there is a Euro-market for the currency sought, how interest rates are performing, the volume of liquidity on tap and so on. As already

mentioned, the marked increase in EIB borrowing activity has gone hand in hand with a diversification of the markets on which the Bank has made its calls. Understandably, for both borrowing and lending purposes, the US dollar is still the Bank's leading currency although its relative pre-eminence has been eroded over the years as a result of the increasingly stronger showing made by other currencies, including, in recent years, the European Currency Unit (ECU).

Hence, despite the fact that the dollar continues to head the list of currencies raised by the Bank, the gap between it and those occupying second and third place is tending to narrow. Compared with certain years when the dollar had accounted for over 50% of Bank borrowings, and as much as 75% in 1974, by the end of 1985 it had come to represent 29.3% of borrowings outstanding with the DM ranking second (19.3%), followed by the Yen (10.9%), the Guilder (10.3%), the Swiss franc (8.4%) and the ECU (5.9%). It should however be borne in mind that the first ECU-denominated issue was floated in 1981 and that ECU borrowings have only really begun to take off over the past three years. The Bank has so far raised funds in as many as sixteen different currencies; about 49.7% has been raised in non-Community currencies and 50.3% in the currencies of EEC Member States.

Exercising due circumspection, the Bank has also turned its borrowing policy to account in order to lead the way by broaching or helping to broach **new markets**. Its first move in this area was in 1961 when it approached the domestic capital markets of the then six Member States and the Swiss market. True to the wishes of the Bank's founding fathers, the authors of the Treaty of Rome, who saw the EIB's borrowing activity in those early days extending to the American market, the Bank's calls for funds were gradually reaching out worldwide. Introduction of the interest equalisation tax in the United States in 1963 however penalised foreign borrowings and dissuaded the EIB from making issues on the American market, as a result of which it turned towards the nascent Eurocurrency market.

Under the rapidly mounting impetus of its lending operations, over the next ten years or so the EIB had increased recourse to domestic capital markets outside the EEC while also stepping up its calls on the interna-

Opening of an office in Lisbon

The European Investment Bank has, opened a new office in Lisbon, to pursue closer and more thorough contacts with public administrative agencies and companies in Portugal.

The office will give the Bank a permanent presence in Portugal and should prove a valuable asset in the development of its financing activities in support of the Portuguese economy.

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Funds raised from 1961 to 1985

(million ECUs)

Years	Number	Medium and long-term borrowings				Short-term operations			Total funds raised
		Private borrowings	Interbank operations	Public issues	Total	Commercial paper	ECU-denominated short-term notes	Participation certificates	
1961/1980	386	4 688.3	128.4	7 830.9	12 647.6			402.5	13 050.1 ⁽¹⁾
1981	57	882.1	92.8	1 267.8	2 242.7			67.0	2 309.7
1982	91	1 213.7	105.7	1 826.3	3 145.7			59.5	3 205.2
1983	81	1 130.9	62.1	2 315.4	3 508.4			111.0	3 619.4
1984	104	822.2		3 227.5	4 049.7	189.1	100.0	22.1	4 360.9
1985	75	1 095.5		4 229.0	5 324.5	374.0		10.6	5 709.1
1961-1985	794	9 832.7	389.0	20 696.9	30 918.6	563.1	100.0	672.7	32 254.4

⁽¹⁾ Annual average: 652.5 million

tional markets. In 1973 and 1974 it floated loan issues denominated in Eurcos (European Composite Units). While not meeting with the same success as the borrowing unit which was to come later, the Eurco nevertheless paved the way for this, the European Currency Unit.

Following abolition of the interest equalisation tax, the EIB was able to make its first public loan issues in 1974 directly on the domestic American market in foreign securities (the "yankee bond" market); these were followed a year later by its maiden yen issue on the Japanese market ("Samurai bonds"). Again in 1975 and also in 1976 the Bank was the first European borrower of long-term funds to broach the Asian dollar market in Singapore and in Hong Kong. In 1976 it approached the Austrian market and in 1977 the Euro-yen market; in 1978, it was among the first borrowers to raise US\$ on the Japanese market; then in 1982 it launched its first sterling-denominated issue on the "bulldog market", the UK domestic market in foreign securities. More recently, the Bank has been the first foreign borrower on the Irish market and it has helped to open up and widen the Eurolira, Euro-Danish krone and Eurofranc markets as well as the domestic lira market.

The EIB has also played a key part on the ECU market: here the landmark year was 1981 when the Bank was the first Community institution to issue ECU-denominated bonds. Indeed, the EIB remains to this day the leading borrower and lender of ECUs having pioneered ECU issues on the Danish, French, Italian, Japanese and Swiss markets. At the time of writing, it remains the sole ECU borrower to have made calls on the French market.

Irrespective of the market or currency concerned, the EIB can offer maturities tailored to borrowers' requirements. At the end of 1985, the average maturity of its outstanding borrowings ran to five years and ten months as against six years and three months for its loans.

Floating-rate borrowings

The emergence in 1983 of the floating-rate market prompted something of a break with tradition: hitherto the Bank had borrowed solely fixed-rate funds, onlending the proceeds on the same basis, but now there was scope for diversification, particularly in view of the demand for variable-rate funds from its own borrowers. The Bank made its first approach to this new market on a trial basis and for a limited amount in 1984 to the extent that it became possible to mobilise funds for far longer maturities than before and hence on terms more interesting to the EIB's customers.

In mobilising these new resources, the EIB has tended to concentrate on floating-rate US dollars because of their greater availability. It has launched a commercial paper programme on the American market accompanied by a revolving underwriting facility and has, in a limited number of cases, engaged in swap operations (interest-rate swaps, currency swaps or a combination of both). This has put the Bank in a position to approach the markets for currencies and maturities not used by it for fixed-rate lending or to take advantage of the temporary abundance of funds on certain markets to make private placings in, for example, yen.

Making the most of steps taken to liberalise the capital markets, in De-

cember 1985 the EIB issued its first floating-rate DM borrowing. More recently, in October 1986 it succeeded in branching out into a new compartment of the market with the flotation of a US\$ FRN issue.

The performance of the Bank's securities

The EIB has also scored a number of "firsts" in promoting the growth of both the primary and secondary markets for the Bank's bonds. One of its innovations has been the global bearer bond, a facility under which rather than requesting payment of the subscription price solely against a provisional or final certificate, the Bank lodges a global bearer bond with securities-clearing systems such as Cedel or Euroclear. The nominal value of this bond is credited to the account of the institution lead-managing the issue which can allocate subscriptions immediately against settlement of the issue price. The simplicity of this new formula has prompted its adoption by other issuers to the extent that the global bearer bond is now a commonplace feature on a number of international capital markets.

The EIB attaches great importance to the sound performance of its securities on the secondary market, a factor which has a considerable bearing on the successful placing of subsequent issues. The Bank's issues are listed on all the main stock exchanges within the European Community as well as in Switzerland, Austria, the United States, Japan, Hong Kong and Singapore. Although a substantial proportion of dealings in the Bank's securities takes place outside the

stock exchanges, official quotations are essential from the point of view of tapping the resources of institutional investors.

The EIB closely monitors the performance of its international market issues by having recourse to the technique of "purchase funds". This gives it the latitude to intervene on the markets

and to buy back its bonds, subject to a predetermined ceiling, should prices fall below par. In this way, the Bank underpins loan issues and promotes the marketability of its paper.

In its capacity as the banking institution of the EEC Member States, the EIB generally enjoys the treatment reserved for first-class borrowers. In

France, for example, its securities are exempt from the 10% withholding tax on interest, which means that they can carry a rate appreciably lower than that attaching to issues by other borrowers. This also enables the Bank to onlend on the best possible terms in support of the priority capital projects which it exists to finance in the service of the Community.

Loans for environment protection head renewed EIB lending in Germany

One of the Bank's assignments written into Article 130 of the Treaty of Rome is to contribute loan finance towards facilitating capital investment aiding the balanced development of the Community. Rather than interpreting this as a narrowly confining provision, the EIB has endeavoured to adapt to shifts in Community priorities within the context of the world economy. This explains how protection of the environment has come to rate as a criterion qualifying a project, in principle, for a loan from the Bank. Indeed, in 1984 the Bank's Governors, in endorsing recommendations put to them by the Board of Directors, provided the EIB with considerably increased scope to finance environmental protection works.

Following the entry into force in Germany of legislation laying down extremely strict anti-pollution standards promoters in this country have been approaching the Bank for loans towards capital investment aimed at converting a number of fossil-fired power stations to comply with the new norms: projects financed by the EIB this year, as at 30 November 1986, with a view to improving the environment have attracted loans totalling 295.7m ECUs (DM 634m).

Uncompromising anti-pollution laws

The new German legislation is centred on large-scale energy-generating plants; in practice, the initial emphasis is on thermal power stations which are required to meet the new standards before the end of 1988, failing which they must close down by 1993 and phase out production over the intervening period.

The capital investment financed by the Bank will make for considerable improvements in terms of bringing cleaner air to highly populated areas; emissions will in fact be scaled down to levels below those called for by law. The new installations also accord with the European Community's environmental objectives spelled out in the Council's directive of 28 June 1984 on combating atmospheric pollution caused by industrial plant.

In Hanover, a number of plants generating electricity and/or heat are to be replaced by a single new cogenerating installation producing both forms of energy and fitted with the most up-to-date flue gas treatment equipment. The units to be de-

commissioned belong to Volkswagen AG, Continental-Gummi AG and Stadtkraftwerke Hannover AG, all of which will now be served by the one installation designed also to extend Hanover's district heating grid. The Bank has lent 47.8m ECUs, or the equivalent of DM 100m⁽¹⁾, for this project.

The EIB has also provided a loan of 46.3m ECUs (DM 100m) for replacement works involving combined heat and power units at a generating plant at Wuppertal and a loan for 18.6m ECUs (DM 40m) for fitting out a thermal power plant at Cologne. In both cases, compliance with emission control legislation will be ensured by introduction of the fluidised bed combustion process (coal-fuelled at Wuppertal and lignite-fuelled at Cologne), the least polluting state-of-the art process commercially available.

Also being financed is a project designed to install flue gas cleaning equipment at Voerde power station near Duisburg which will serve to reduce noxious emissions of sulphur and nitrogen oxide. The Bank has lent 14m ECUs (DM 30m) towards this project.

Finance for ambitious infrastructure schemes goes hand in hand with support for smaller-scale works

In tandem with loans directly associated with the above legislation, the EIB has also provided finance in Germany aimed at improving other aspects of the environment.

Through a loan for 70m ECUs (DM 150m) it has supported construction near Cologne of a reservoir with a capacity of over 80m cu.m of drinking water intended to replace polluted supplies, drawn from groundwater resources and the Rhine, with clean surface water. The project will guarantee domestic water supplies to some 1 million people and will bring the quality of this water up to Community standards. The works also provide for back-up resources to ensure that a population of some 2.5 million would continue to receive water supplies should a pollution incident occur in the Rhine. Both this and the aforementioned loan for the power plant at Cologne were mounted in collaboration with Westdeutsche Landesbank Girozentrale which is acting as intermediary for channelling the funds to the promoters.

For reasons of operating efficiency, it is not practical for the Bank to finance directly a large number of small or medium-scale projects. Consequently, the EIB assists such ventures indirectly by means of its "global loan" facility, a line of credit opened with intermediary institutions which pass the proceeds on to their clients in smaller sub-loans.

It was to this end that the Bank recently concluded a global loan for 70m

⁽¹⁾ The conversion rates applicable to the loans referred to in this article are those obtaining at the time of contract signature.

ECUs (DM 150m) with the above intermediary institution, Westdeutsche Landesbank Girozentrale, for financing small and medium-scale projects centred on reducing or preventing pollution or on achieving energy savings.

Indirect impact on the environment

Solely those loans provided on the strength of the environmental protection criterion are classified under this heading in the Bank's operating

statistics. There are however many other instances of EIB lending having an impact at the environmental level. The Bank helps to finance numerous projects throughout the Community pursuing regional development or energy-saving objectives but also offering valuable contributions on the environmental front. Sewerage and sewage treatment schemes financed as part of altogether wider-reaching regional development projects provide an obvious example, but substantial amounts have also been lent towards making more efficient use of

energy, installing district heating grids, etc.

A case in point is a loan for 27.5m ECUs (DM 60m) made available this year in Germany towards funding construction in the Saar of a heat transmission network between Dillingen and Saarlouis. The heat feeding the system will be recovered from industrial installations. As well as reducing air pollution in the area, the project will result in energy savings by cutting down on the number of existing heating units by virtue of the recycling process.

EIB chips in to high-tech investment drive

The European Investment Bank gives concrete form to Community policy objectives by financing capital investment projects contributing to their realisation. Throughout its existence, the EIB has helped to stimulate regional development. Adapting itself to changing economic circumstances and priorities, the Bank has taken on new tasks. Since the seventies, at the request of its Board of Governors, it has increasingly financed investments contributing to energy policy objectives (development of indigenous resources, energy saving, import diversification). From the beginning of the eighties on, again acting on Board of Governors guidelines, the Bank has stepped up lending for protection of the environment and advanced technology.

Development and introduction of advanced technology to improve the competitive strength of European industry is a priority for the Community objective. Modern technology has a pivotal role to play in this respect and that realisation has led to a series of programmes, including ESPRIT (information technology), RACE (telecommunications), COMETT (advanced training in development and application of new technologies), BRITE (advanced technology in support of traditional industry), FAST (science and technology) and COST (scientific and technical co-operation)⁽¹⁾. These well-known names are complemented by many less familiar Member States' and Community programmes which range from biotechnology to the aircraft industry and the energy sector.

EUREKA is another major programme aimed at improving the competitive edge of European industry through the introduction of modern technology. Not limited to the Member States of the Community, it is supported by 19 European governments. Already, EUREKA covers seventy-two joint development projects between European companies; another thirty projects are to be discussed at a meeting of government ministers in Stockholm in December 1986.

The European Investment Bank has followed suit by increasingly focusing its financial means on the field of high-tech. A significant technological component was already present in many of the projects the EIB has financed over the years, be it in manufacturing, in the energy sector, in modern means of transportation, or in telecommunication. But the Bank's governing bodies wanted to go further.

Expanding horizons

The Board of Governors, at its annual meeting in June 1984, endorsed recommendations for the EIB's lending in the field of high-tech. Advanced technology projects which involve the manufacture of high-tech products not yet widely diffused throughout the Community (i.e. product innovation), or which bring about the development of new technology production processes (i.e. process innovation) are, on these grounds, eligible for EIB support. Particular attention should be given to projects which involve industrial co-operation between firms in different Member States, avoiding duplication and taking advantage of the economies of scale of the Common Market.

The guidelines laid down by the EIB's Board of Governors tie in with priorities as defined in other European Community programmes. An annex to the guidelines gives the following indicative list of sectors and products in which high-tech projects would be eligible for EIB finance:

- Office systems, data processing, telematics;
- Microelectronic components, optoelectronics;
- Advanced machine-tool industries (robotics, automation, etc.);
- Biotechnology;
- Space technology;
- Advanced energy technology;
- Aeronautics;
- Biomedical engineering;
- New materials, composite materials;
- Equipment for environmental protection and recycling purposes;
- Aquaculture.

An important aspect is the Bank's emphasis on the development and eventual manufacture of marketable products. In this context, the European Council recommended that the Common Market dimension should be exploited, inter alia by having recourse to the financing facilities of the European Investment Bank.

⁽¹⁾ ESPRIT: European Strategic Programme for Research and Development in Information Technology

RACE: R & D in Advanced Communications Technologies for Europe

COMETT: Community Action Programme in Education and Training for Technology

BRITE: Basic Research in Industrial Technologies for Europe

FAST: Forecasting and Assessment in Science and Technology.

COST: European Co-operation on Scientific and Technical Research

Ever-widening range of high-tech investments

Recent years have seen a steady increase in EIB loans for advanced technology projects, both in absolute terms and as a proportion of the Bank's total activities. Whereas between 1976 and 1982, loans for high-tech projects totalled 115 million ECUs, lending reached 170 million in 1983 and 207 million in 1984. It then jumped to 311 million in 1985 and in October of this year, over 400 million ECUs had already been taken up in new loans for 24 high-tech projects. These figures do not include the lending for projects supporting traditional policy objectives but involving modern technology.

As there are very few sectors of industry which would not benefit from the introduction of state-of-the-art technology, the projects financed by the European Investment Bank cover a broad range of capital investments. Product and process innovation help to improve the market situation in the priority sectors outlined in the indicative list above, but in more traditional industries as well.

In April this year, the EIB lent 86 million ECUs to Olivetti for investment in factory automation and Computer Integrated Manufacturing in its professional personal computers plant. By no means the first investment in European office systems and data-processing equipment to receive EIB finance, it is the largest project of its kind and it exemplifies what is both possible and necessary to keep European industry in the front lines:

One of the principles behind factory automation is high flexibility to allow for the simultaneous production of a number of different models and future generations of personal computers. The concept of Computer Integrated Manufacturing developed by Olivetti, is one of the first industrial-scale applications of this technology. Through the installation of peripheral terminals on the production line for constant feed-back on rates of output, stock levels and quality control, it enables optimal, continuous use of the production cycle within the plant. All data will be processed through a main-frame computer and constantly collated and reprocessed against external information, especially on sales.

At the same time, the project will allow for a widening of the product

range to include more sophisticated products, such as professional PCs and work-stations, and self-service bank terminals.

In **microelectronic components**, Europe's industry also needs to keep up with its international competitors. The market share of the European semiconductor industry fell from 13.9% in 1979 to 8.5% in 1984. EIB support helps to reverse this disquieting trend.

In March of this year, Philips took up a loan equivalent to 80 million ECUs to part-finance its development of a Megachip. Philips' large-scale investment programme is directed towards the mastering of sub-micron technology, i.e. the technology to be used for the production of the next generation of semiconductor integrated circuits. The first type of integrated circuits of this generation is to be a semiconductor static memory with a storage capacity of 1 megabit (one million bits) per chip.

The investments in research and development of the Megachip are being made jointly by Philips and Siemens. The Mega-project is to play a decisive role in strengthening the competitiveness of European industry as Philips and Siemens aim to improve their position on the international chip market. Engineering samples of the 1 Megabit Static Memory will be available in 1988.

EIB support for the construction of an integrated circuits factory by European Silicon Structures (ES2) may reach 17.5 million ECUs. A first loan was taken up in October of this year. Attracting shareholders which include British Aerospace, Brown Boveri, Bull, Olivetti, Philips, Saab Scania, Telefonica, Telfin and venture capital firms, the project ties in with the EUREKA programme.

The ES2 factory will produce application-specific integrated circuits. Using direct writing by electron beam on silicon wafers, a technology not applied in Europe as yet, the company will be the first in the Community to bring design and manufacture of custom-made chips under one roof.

As with much investment in high-tech, the effects will be felt well beyond the sector of the industry immediately involved. They will make for increased Community exports of advanced-technology products on world markets. In addition, the technology involved in the manufacture of applica-

tion-specific chips, in Computer Integrated Manufacturing and in the development of the Megachip, is likely to find its way to other European industries. To the extent that this takes place, the result will be a rise in productivity on a European-wide scale.

Advanced technology in the service of man

Biomedical research and development, leading to the marketing of pharmaceutical products offering health benefits, clearly fall within the range of investments eligible for EIB finance. In 1985, the Bank financed a series of R&D projects in this sector in Italy for a total of some 27 million ECUs. These projects are designed to produce:

- a new range of high-sensitivity, high-resolution radiographic films designed to minimise patient exposure to radiation and featuring digital processing of the data captured on film;
- a new generation of pacemakers, cardiac valves and haemodialysis filters using new types of fibrous filter materials;
- monoclonal antibodies for use in immunodiagnostics;
- new, more effective and less toxic antibiotics and cancer treatment agents, produced using processes and monitoring systems featuring highly sophisticated equipment;
- new pharmaceutical products to be developed at a research centre working on therapeutic and diagnostic agents, with efforts concentrated on products for the chemotherapeutic treatment of tumours, on methods to ally photochemotherapy with laser technology.

Biotechnology in industry is also supported by EIB loans. In October 1986, the Bank lent the equivalent of 14.5 million ECUs for the construction of a plant producing aspartame, a concentrated sweetener, in the Netherlands. Once completed in 1988, the plant will supply artificial sweetener to large industrial consumers, such as soft drink manufacturers, in European and other markets worldwide. The production of aspartame will be based on the latest findings in biotechnology, in the field of enzymatic processes.

Satellite **telecommunication** systems offer users in all sectors of the economy improved operating efficiency and a competitive edge. Offering high-capacity digital facilities, these systems provide telephone communication and also meet de-

mands with regard to teleprocessing, electronic mail, and videoconferencing.

In June 1986, the EIB lent 75 million ECUs to the European Telecommunications Satellite Organization, EUTELSAT, for the construction and placing into orbit of EUTELSAT's second generation of satellites. The EUTELSAT Organization, which has its headquarters in Paris, was set up in provisional form in 1977 and became an intergovernmental organization in 1985. Today, all the countries of Western Europe plus Yugoslavia make up its 26 European Member Countries. Its purpose is the design, establishment and operation of the space segment of European regional telecommunications satellite systems to meet the requirements of its members.

EUTELSAT's present satellites – two have been in service since 1983 and 1984 and two others are due to be placed in orbit in the next few years – will come to the end of their useful lifetime between 1990 and 1994. In order to assure the continuity of the services provided by these satellites and to allow for expansion in the 1990s, the EIB-financed satellites will have a higher performance and capacity. The antenna design ensures optimum coverage for all European countries.

The automobile industry

Whereas product and process innovation often go hand in glove in new sectors of industry, the introduction of more efficient and less costly production processes is a condition for survival in those traditional industries being faced with increasing competition in world markets. The automotive industry is a case in point.

Early, in 1983, FIAT received a 90 million ECU loan for investments at two of its factories. The company introduced a series of improvements in the production process of the chassis and of engine parts, allowing for greater flexibility and improved efficiency.

In 1986, Peugeot took up 45 million ECUs for a new vehicle paint shop. Scheduled for completion in 1989, the "laboratory paint shop", is designed to take in all relevant technological developments. The models assembled at the plant will be given a higher-quality and more durable finish.

Conditions at the workplace will also improve and the new paint drying and curing sections of the plant will make for reduced energy consumption.

Also this year, Pirelli received 13.5 million ECUs for investment in innovations at its Torino tyre plant. After five years' research and testing, Pirelli has developed both a new generation of steel-core radial truck tyres. The new tyre allows for a more uniform load distribution on the tread, permitting, inter alia, higher mileage, lower rolling resistance, improved stability and better fuel economy. High-tech features of the production process include advanced automation of each manufacturing step, supported by a computer information system and fully automated product handling.

Large and small

But large firms do not have a monopoly on EIB finance. The major part of the Bank's lending in industry is for small and medium-sized projects. Given the innovative potential of smaller firms, their investments in the field of advanced technology are often of special interest. The EIB has provided global loans totalling more than 100 million ECUs in France and Italy specifically for small-scale high-tech investments. Basically, global loans are lines of credit opened to banks or other financial intermediaries which on-lend the funds in smaller amounts. In this way, the EIB's financial resources as an international body are combined with the local expertise of the intermediary to benefit smaller-scale investment. Pioneered in 1985, these global loans for high-tech investment have helped to finance some twenty smaller projects so far.

"Increasing the competitiveness of European industry by developing its high technology potential has become vital for the future of the Community. The Bank must devote a larger share of its financing to this end", said Ernst-Günther Bröder, the EIB's president, at the 1986 annual meeting of the Bank's Governors. The degree to which the Bank supports Community policy in this field is still growing. Over one billion ECUs in EIB loans for the development and introduction of advanced technology have already been taken up since 1984. Not captured in the Bank's statistics, the high-tech component in projects serving other policy objectives is also steadily increasing.

ECU

Below are the ECU's values in national currencies, as at 30 September 1986; these rates are applied to the present quarter in preparing financial statements and operational statistics of the Bank:

DM	2.09059	Bfrs	43.3485
£	0.712521	Lfrs	43.3485
Ffrs	6.84577	Dkr	7.89441
Lit	1 445.29	Dr	139.098
Fl	2.36189	IRE	0.762944
Ptas	137.554	Esc	151.35
		US\$	1.02959

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(Repeat announcement)

The EIB Prize "Investment and Financing"

The European Investment Bank invites entries for its 1987 EIB Prize which will be awarded next June.

Established on the occasion of its 25th Anniversary in 1983, the EIB Prize is awarded every two years for a doctoral dissertation on the topic of investment and finance. It consists of 10 000 ECUs and a diploma signed by the Chairman of the Prize Jury and the President of the Bank. An international jury of experts has been appointed, consisting of:

Beniamino Andreatta
Professor of Economics, University of Bologna

Arnold Heertje
Professor of Economics, University of Amsterdam

Jacques Lesourne
Professor of Economics, Conservatoire National des Arts et Métiers, Paris

Michael MacCormac
Professor of Business Administration, University College Dublin

Lord Roll of Ipsden
Chairman, S.G. Warburg & Co. Ltd., London

Wolfgang Stützel
Professor of Economics, University of the Saar, Saarbrücken.

Lord Roll has been elected Chairman of the jury.

To qualify, theses must have been accepted as doctoral dissertations by a university or equivalent institution in a Member Country of the European Community between January 1983 and 1 February 1987. Candidates must have the nationality of one of the Member Countries and be under 40 years of age on the date the thesis is sent to the EIB as an entry for the Prize. The closing date for submission of suitable theses is 1 February 1987.

The first EIB Prize was presented in 1985. It was awarded to Ms Giovanna Nicodano for her thesis "Struttura finanziaria, costo del capitale e decisioni d'investimento", for which she obtained her doctorate at the Università Commerciale Luigi Bocconi in Milan 1983.

Rules for the EIB Prize

Art. 1. The EIB Prize was instituted by the European Investment Bank on the occasion of its 25th Anniversary in 1983.

Art. 2. The EIB Prize was instituted to promote in the academic institutions of the European Community Member States the study of investment and financing in all its various aspects.

Art. 3. The EIB Prize shall be awarded for a thesis on the topic of investment and financing in their broadest sense.

Art. 4. To qualify as an entry for the EIB Prize, each thesis will have to have been successfully presented as a doctorate dissertation to a university or equivalent academic institution in a Member State of the European Community.

Art. 5. The EIB Prize may be awarded to any person having the nationality of one of the Member States of the European Community, who is under 40 years of age on the date the thesis is sent to the EIB.

Art. 6. The Jury will accept as entries for the Prize theses by which doctorates have been obtained during the four calendar years prior to the year in which the Prize is to be awarded and up to the final date of submission in the year of award.

Art. 7. The Prize shall consist of: (a) the sum of 10 000 ECUs; (b) a diploma signed by the Chairman of the Prize Jury and the President of the European Investment Bank.

Art. 8. The Prize was awarded in 1985 and will be again in 1987. The terms for its award may be reviewed following the conferral of the Prize. The continuation of the Prize in future years will be considered after the conferral of 1987.

Art. 9. The Prize shall be announced in the Official Journal of the European Communities and in relevant economic and financial publications published in the Member States at least 3 months prior to the closing date for the submission of entries.

Art. 10. The Prize Jury shall consist of six independent learned experts of high repute, to be appointed by the Management Committee of the European Investment Bank.

Art. 11. The Prize Jury shall make known its decision to the President of the European Investment Bank, no later than 1 June of the year of the award, in the form of a summary report, stating its grounds. The Management Committee shall award the Prize on the basis of that report. The Prize Jury shall have the option of not recommending a candidate for the award. The Prize Jury's findings shall be final, and not open to appeal.

Art. 12. The name of the prizewinner will be announced and the Prize will be awarded on the day of the Annual Meeting of the EIB Board of Governors of the year in question.

Art. 13. The costs of adjudication and award shall be borne by the European Investment Bank.

Art. 14. EIB staff shall not be eligible to enter for the EIB Prize.

Art. 15. Theses may be submitted in any of the official languages of the European Community. A detailed summary in any of the official languages of the European Community must be annexed.

Art. 16. Candidates for the 1987 Prize should send two copies of their entries by registered mail to the EIB, 100 Boulevard Konrad Adenauer, L-2950, Luxembourg by 1 February 1987.