CAMBRIDGE ASSOCIATES LLC

EUROPEAN VENTURE CAPITAL INVESTING

2000

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ABSTRACT

1. Sweeping change is invigorating the European venture capital market. Historically, the industry has been cosy, inefficient, and moribund, generating miserable returns to investors. More recently, however, it has been energised by an infusion of new talent and energy, as a flood of new capital has been attracted by much improved performance and by growth opportunities in the digital economy, particularly in communications, information technology, and anything dot-com. Investment is now more or less doubling each year, with France, Germany, Scandinavia, and the United Kingdom leading the field.

   Although the asset class certainly offers extraordinary investment opportunities, we would also emphasise the very high level of risk investors incur.

2. These risks are

   - Whether in the United States or in Europe, the boom in venture investing is irrevocably tied to the boom in technology stocks, which has become a global phenomenon we have characterised as a "dangerous bubble." Venture investing on both sides of the Atlantic will continue to thrive only as long as that bubble remains inflated. Its deflation-and more especially its bursting-could destroy many fledgling venture capital firms with insufficient resources to survive a hard shakeout. Although there are some mature venture firms in Europe, the "extraordinary opportunities" are primarily with newer, emerging firms that we perceive as more vulnerable to any such downturn.
   - Europe still lacks adequate public equity markets of the sort needed to provide venture investors with optimal exit opportunities. Consequently, most venture capitalists regard U.S. trade sales or initial public offerings (IPOs) on the NASDAQ market as the best means of realising their returns. New small-company exchanges are under development in Europe and those that already exist, like EASDAQ and Germany's Neuer Markt, are rapidly expanding, but this necessary infrastructure is as yet immature, and further highlights European venture's continued dependence on the United States.
   - As we have stressed repeatedly in our reports on U.S. venture investing, the dispersion of returns among managers is vast, with the more talented and experienced typically outperforming newer and less capable rivals by very large margins. Consequently, manager-specific risk is very high in venture investing, but even more so in Europe than in the United States, because–again–much of the opportunity we perceive in Europe is the emergence of many promising new firms, loaded with promising new talent. As in most endeavours, however, talent is a necessary, but sometimes insufficient requirement for success-what the new generation of European venture capitalists

lacks is experience. Less a problem in fat years, experience may be the key to surviving the lean years, and if those lean years show up sooner rather than later, talent alone will not suffice.

- As in the United States, money is flooding into European venture firms' coffers at an unprecedented rate. Optimists would argue that because attractive investment opportunities have developed at an even faster pace, this money is being deployed in productive new enterprises likely to generate extraordinary returns–subject to the usual risks attendant on venture investing generally. Pessimists would argue that pre-money valuations have almost certainly risen sharply in Europe (although this is hard to document because the requisite data for Europe are largely unavailable), that investors therefore receive far less equity than they did just a few years ago for the same amount invested, and that although valuations are probably somewhat better than in the United States, the asset class nevertheless looks overfunded and overvalued.

3. The extraordinary opportunities are

- The primary drivers of European venture's dramatic reinvigoration are the continent's increasing integration, catalysed by the introduction of the Euro, and the rapid development of the Internet and mobile telecommunications, both of which cut through national and cultural barriers. Although the transformation of Europe's economic landscape is already well underway, this process will continue to evolve (with periodic setbacks) over the next several decades, providing a tailwind for equity investors. (See our 1999 paper, Europe After EMU, for a more complete discussion of this subject.)

  Meanwhile, Europeans are increasingly conscious of having lagged the United States in the development and productive use of information technology, and eager to catch up. At the same time, Europe leads the United States in some important sectors, like wireless telecommunications. Fear of voter backlash inhibits European governments from voicing what they well know: the consolidation necessary to make European companies competitive will result in job losses. The increasing importance of employment policy has created powerful incentives to reduce impediments to new business formation and to emulate the U.S. model of new job creation through entrepreneurial activity.

  Whether they belong to the left, right, or centre, politicians of all persuasions are also far more inclined than 20 years ago to accept that private markets are more efficient allocators of capital than governments, and therefore seek to foster an environment hospitable to venture investing. The increasing liberation of entrepreneurs and venture capitalists from restrictive webs of regulatory constraints is a key component of our thesis that opportunities for capital investment will continue to expand at a healthy rate.

- Precisely because the new European venture capital market is immature, emerging, and evolving-and therefore high risk-it is also less efficient than the U.S. market, which is always advantageous to those best equipped to exploit the available opportunities. If investors can identify specific characteristics most likely to contribute to venture firms' success or failure in this changing environment, they can then establish early relationships with tomorrow's leaders, which are those firms whose investors will be most consistently rewarded.

4. In short, we would regard the risks as heavily concentrated in the short term and attributable primarily to the European market's vulnerability to any adverse developments in the United States or to technology stocks in general. Any bear market in U.S. and global technology stocks would inflict serious damage on European venture investing, and the sooner the bear shows up, the worse the damage will be. The European venture industry needs at least two more strong years to achieve self-sufficiency, which we would define as the ability to survive a cyclical downturn and then resume its growth independent of the United States. The bubble in technology stocks might persist for that long-bubbles are notoriously fickle and unpredictable–or might abruptly burst next month-no one knows.

   And so the risk is that the flood of money now being disbursed by European venture firms at ever higher valuations will prove to have been uneconomically invested in fledgling companies unable to survive either a general economic contraction or investor disillusion with exaggerated growth prospects for their sector. On the other hand, the extraordinary opportunity we perceive in European venture is predicated on a longer-term view that strong tailwinds are likely to favour the development of this nascent industry, both in terms of the longer-term evolution of European economies (including those of developing countries likely to join the EU in the next decades) and of European capital markets.

5. Should investors therefore wait on the sidelines, in expectation of finding a more opportune time to invest? No. They should make selective commitments today, exercising particular care in manager selection, with the objective of developing long-term relationships with the most promising firms, while systematically building an investment program over a period of five or more years. This market will boom and bust repeatedly–despite its illiquidity and long time horizon, venture investing is in fact highly cyclical–and investors must therefore develop a disciplined, long-term investment plan from which neither hype (as now) nor despair (which may follow) will distract them. The hallmarks of all successful venture investment programs are discipline, patience, consistency, diversification, and expertise in manager selection. These will apply to European venture just as they have in the United States.

SUMMARY

Introduction

After decades of moribund performance, a new dynamism has infected the European venture capital markets. Almost daily, new funds are formed and new initiatives generated. The early players are returning for second- and third-time fund raisings and increasingly demonstrating respectable returns even by U.S. standards.

The larger context for this resurgence is economic and monetary union, which is redrawing the economic map of Europe, promoting greater focus on sectors that hold promise of substantial growth, and creating a new climate in which entrepreneurship is encouraged, supported, and rewarded. For venture capital investing, this represents a very strong tailwind, which governments have strong incentives to support with business-friendly fiscal policies and revisions of regulatory impediments to new business formation. At the same time, the dramatic explosion of new information technologies and the creative destruction of the Internet revolution both generate fertile ground for venture investors.

However, Europe remains short on experienced staff and resources, with nothing close to California's Silicon Valley in offering the professional support, labour supply, and management expertise required to foster start-ups. Nevertheless, the gap with the United States is steadily narrowing.

In the event of a bear market in global equities, led by the United States, European venture investing would certainly suffer, particularly since many exit opportunities are currently found in public offerings or trade sales in America. Europe's own immature stock markets would certainly flounder. The longer the current bull market persists, the greater the probability that the European venture industry could weather any such storm. With another two or three years of growth, for example, the market will have reached a critical mass, with greater breadth and depth of managerial talent, and a sufficient number of realised deals to provide most firms with a secure base.

These are all good reasons for optimism about the prospects for venture investing in Europe over the next decade and longer. In the short run, however, unhealthy hype abounds. In the traditionally staid Financial Times, for example, every page seems to feature an article about some wildly successful technology investment. Although not yet as manic as the U.S. market, European venture investing is certainly in danger of overheating for the same fundamental reason–far too much cheap capital chasing any and every available deal, driving prices up and prospective returns down. If this persists, the short-term outcome may be spectacular profits from IPOs, but the intermediate outcome is more likely to involve weeping and gnashing of teeth.

The current appetite of investors for European venture investing will depend much upon their individual circumstances and appetite for risk. European and Middle East investors will feel more

comfortable and are likely to be attracted to one of several strategies for investment now. However, mature U.S. investors, particularly those that already have prime access to the U.S. venture market, may see little incentive to attack the European venture market but may wish to keep closely in touch to review developments.

Those U.S. investors that have a longer horizon, wishing to spread their risk, or those that do not have access to the upper-quartile U.S. managers, may view European venture more positively. They may note that European families that have taken early positions in the local venture market have been rewarded by returns (partly as yet on paper only) that would not disgrace many West Coast funds.

When an immature market is undergoing dramatic change, forecasting its outcome is fraught with peril. At present, much of the data are thin, particularly those from the British Venture Capital Association (BVCA) and European Venture Capital Association (EVCA), and analysis we can readily present for the U.S. market is simply not available for Europe as yet. Thus, we have avoided, where appropriate, trying to apply the 12-inch ruler to limited data points. For that reason our projections have been supported by extensive interviews with a wide range of investment managers, advisers, and policymakers within the United Kingdom and across the continent of Europe.

History: A Poor Start

In the 1980s the European venture capital market consisted of a dozen firms at best, of which all but three were located in the United Kingdom. Although venture investing was not unknown in Britain, investors were almost exclusively local pension funds and the amount of capital under management by venture capital partnerships was insignificant. In Germany, Spain, and Italy, venture investing was virtually non-existent, since banks were the only source of funding for new enterprises, and there were no government grants for small business development. France and the Netherlands had fledgling venture capital communities from which Atlas Ventures, out of Amsterdam, is one of the real survivors and a major current pan-European player. In France almost all venture initiatives were government inspired and subsequently faded.

By 1995, several of the early venture firms, such as Euroventures, had crumbled, but new ones had started to spring up. For the industry as a whole, the average annual return for the previous ten years had been less than 5%, compared to 13.2% for European listed equities, 11.5% for European bonds, and 14.2% for U.S. venture investors. European investors with a taste for venture investing very sensibly sent their money across the Atlantic.

Why did European venture investors fare so poorly when those in the United States were reaping such handsome returns?

- In contrast to the United States, where the entrepreneur is a folk hero, the socioeconomic and cultural climate in Europe did not promote risk-taking or wealth creation. Fiscal and regulatory regimes actively discouraged new business development, while the financial, legal, and commercial infrastructure available to U.S. start-ups was lacking.
- Both start-up firms, and the venture capitalists that invested in them, suffered from poor management and cyclical economies.
- Europe's defence, aerospace, and space exploration industries were largely state-owned or controlled, and did not serve as incubators for the private-market development of profitable new technologies as they did in the United States.
- Europeans saw pure science, rather than practical, commercially exploitable technology as the province of venture capital. Despite its importance in the long run, scientific research rarely pays financial dividends within a time horizon relevant to investors. For example, the nascent European venture capital industry paid heavily for its misplaced optimism for bioscience and biotechnology in the 1980s, since few of the biotech innovations turned out to have significant commercial value in the short (or even intermediate) term, and so investors generally lost their shirts.
- Poor results and the lack of successful entrepreneurs naturally led to a dearth of investors willing to finance start-up ventures.
- Even where they had successfully identified commercially viable new businesses in which to invest, venture capitalists had few means to realise investment returns since Europe's stock markets were not hospitable to new listings of small companies.

The Current Market

Today, the European venture capital industry consists of more than 120 firms in 15 European countries. There is a wide range of smaller investment managers, many now coming forward to raise their second and third funds, and a select few that have pan-European networks coupled with well-developed track records. Still a small band compared to the 580 firms in the United States but growing rapidly.

In Europe, €10.5 billion was invested in more than 5,000 new companies from 1996-98 and the figures are nearly doubling each year (see Exhibit 1). Growth in the level of investment is mirroring the

rate of growth in the United States with a four-year lag (see Exhibit 3).

In the last five years, during a period of substantial growth for the buyout industry, venture grew from 15.5% of all European unquoted investing, to 27.8% (see Exhibit 4). In 1998, venture firms raised €6.7 billion from investors, but no comparative figures are available for previous years. Similarly, disbursements to early-stage, start-up, and technology firms totalled €5.7 billion in 1998, compared to €3.0 billion in 1997, and €1.8 billion in 1997. Of the money disbursed in 1998, 28% was start-up and early-stage financing, the balance in other stages of technology investing.

Telecomms and computer-related sectors have been the principal beneficiaries of venture disbursements. In contrast to the 1980s, the major source of capital is now overseas (primarily U.S.) institutional and corporate investors, and high-net-worth families (primarily German and Swiss).

U.S.-based firms have also shown an increasing interest in Europe, following the example of their brethren in non-venture private equity investing (a.k.a. buyout investing) who have crossed the Atlantic in droves in the past two years.

Relatively few U.S. venture firms actually have offices in Europe (exceptions are Crescendo, JH Whitney, and the recently announced Benchmark), but many more have shown some interest in co-investing with European firms.[1] The latter have come to recognise the value-added of American venture capitalists' experience and expertise in selecting the best deals and steering new enterprises through the rocks and shoals that threaten any infant business.

It is instructive to note the reasons given by Benchmark for now setting up a European Fund:

- A subtle and profound change (career entrepreneuring) has taken place in much of Western Europe;
- a plentiful supply of talented entrepreneurs with good ideas; and
- a social framework that allows the recruiting of the best executives from the "Old Economy" companies into those sectors that are changing business around the world.

Furthermore, there has been a recent spate of material new initiatives including tie-ups between venture operations and buyout firms, launching in Europe. Notable amongst these are:

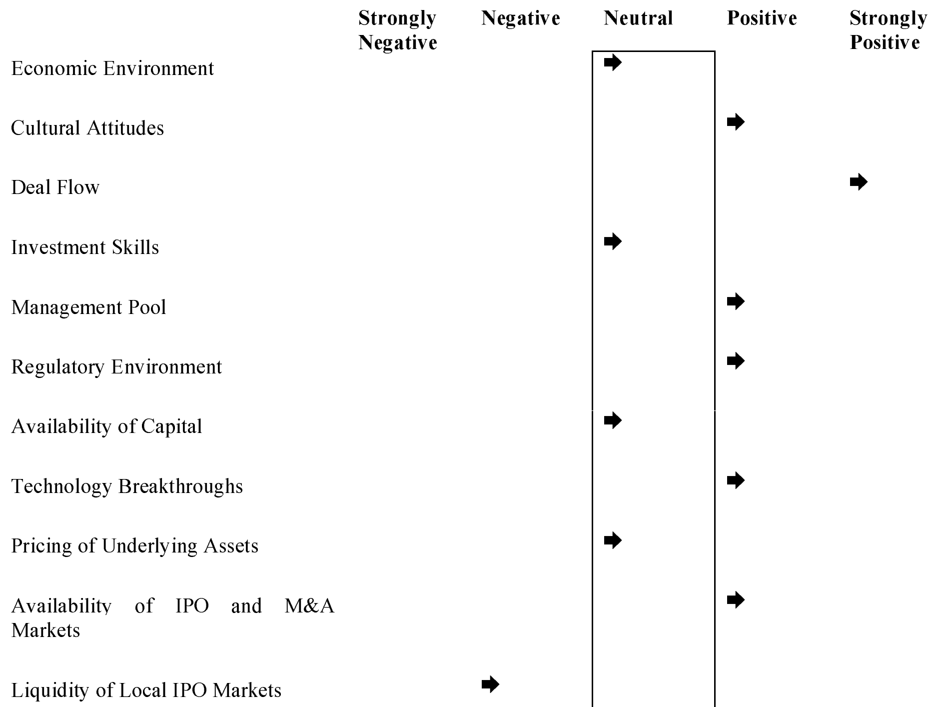
[1] Funds that have been visiting in Europe or are currently seeking to tie up alliances include Oak and General Atlantic. In addition larger financial groups including BancBoston, Chase, Goldman Sachs, and Morgan Stanley have allocated pools of funds to this area and are working to tie up relationships.

- CMGI, Hicks Muse, and Pacific Century CyberWorks' formation of a $1.5 million European Internet start-up fund, @Ventures Global Partners.
- Accel Partners and KKR's formation of Accel-KKR Internet Co., which will have an office in London.
- Softbank's commitment of $1 billion to three European investment vehicles, Softbank U.K. V, epartners (in conjunction with News Corporation), and Europe Ventures (in conjunction with Vivendi).

Additionally, U.S. professional firms with strong and relevant experience (e.g., lawyers, strategy consultants, technology consultants, and boutique investment banks) are setting up offices across Europe, principally in London and Munich. In response, the European professional advisors are setting up their own technology support units.

The Market Drivers Going Forward

Looking forward, we expect the dramatic growth of the European venture industry to persist–despite the occasional setbacks experienced by any volatile asset class–with the following drivers:



Environment - Neutral/Positive

On a very different cycle from the United States, mainland Europe is coming out of a period in the doldrums and growth of 3% per annum is now forecast. Inflation is low but interest rates (that do not directly affect the venture capital arena) may rise to keep inflation in check. Unemployment is declining and in the United Kingdom, which has a more flexible labour market than the Continent, it is close to or below its theoretically maintainable level (as is the case in the United States). Across Europe, the positive growth and employment data hides real declines in basic manufacturing industry balanced by explosive growth in most service sectors, especially those related to new technologies.

Cultural Attitudes - Positive

Even in Germany entrepreneurship is booming. There is now a solid European recognition of shareholder value and the need for corporate efficiency. The privatisation bandwagon set off by Margaret Thatcher in the United Kingdom is steaming across mainland Europe. Wealth creation is now admired and applauded.

Deal Flow - Strongly Positive

However, the ready availability of risk capital is of no consequence if there is nowhere to invest it. Fortunately, investment opportunities are also abundant, particularly wireless telecomms. Moreover, incubator units are being set up across Europe[2] to provide expertise and experience in support of the accelerated development of new businesses, particularly in the Internet and telecomms.

Managers tell us that deal flow is strong, and much of it of good quality.

Investment Skills - Neutral

Even good opportunities wither on the vine in the absence of investment managers with the appropriate skills and experience to select and nurture them. Although the pool of European managers

[2] Notable initiatives are being led by Bain (BainLab), Hewlett Packard, Credo, Ernst & Young, and FutureStep (a recruitment company). In addition, there are several pan-European initiatives such as Gorilla Park and Start Ventures, but also numerous regional incubators such as Ant Factory, K-Incubator, Adaptive & LootLab (U.K.), Net Juice & Ata New Ventures (Spain), Econa & Upside (Germany), Défi Start-up (France), ICOM (Netherlands), and Cell Ventures (Nordic).

with verifiable track records is growing rapidly, it is probably still inadequate to cope with the more rapid growth in investment opportunities. Many new entrants are crowding in from the investment banks and consultancies (notably McKinsey) to help fill the gap, and an increasing number of experienced U.S. competitors are also establishing European satellite offices.

Larger venture groups such as APAX, Schroder Ventures, Gilde, and Atlas have already lost some staff. Over time, 3i Group (the world's largest venture capital firm, headquartered in London) will create a large supply of staff experienced in technology investing, albeit lacking hands-on experience, some of which will undoubtedly be attracted elsewhere by ownership of carry, or the management of their own fund. There are early signs that this is already happening, particularly on the Continent, and may well mirror the flood of exiting 3i staff that fed the growth of the buyout industry in the United Kingdom in the 1980s.

Management Pool - Positive

Nor is there any shortage of entrepreneurs, the merchants of change, despite Europe's reputation as barren soil for such personalities. Many are extremely young and have no commercial or industrial experience of note. What they bring is a fresh perception of traditional markets from entirely new angles and an ability to conceptualise markets that do not yet exist.

They also come from completely unexpected sources, such as consultancy, that have been largely inappropriate and unsuccessful in the European private equity arena. Significantly, several venture managers with offices in both the United States and Europe have commented that they are finding the quality of European entrepreneurs increasingly on a par with those in the United States, though noticeably lacking in marketing skills when compared to the U.S. management pool.

Some restraint in this area will arise from the lack of a Silicon Valley to act as a hot bed for the fertilisation and cross-fertilisation of skills.

Regulatory Environment - Positive

Continental European governments recognise that European integration and the forces of global competition are driving major European companies into mergers designed to realise economies and efficiencies of scale, which are euphemisms for cost cutting and layoffs. Despite their reservations about some aspects of American-style capitalism, these governments admire the way the United States has created millions of new jobs in the past decade through new business development, and seek to emulate this as a means to deliver on their promises of reduced unemployment. This will require incentives for

entrepreneurs and those who finance them, and a reduction in the regulatory barriers to new business formation.

For example, both the Netherlands and Germany have given significant support to their fledgling venture capital industries. Currently, venture capitalists that make full use of all available grants, tax breaks, and subsidised loans in Germany assume only 22% of the financial risk of their investments. Although Brussels bureaucrats may eventually rule against such government subsidies, they are in the meantime proving remarkably successful in promoting entrepreneurship and risk taking in countries not previously noted for these characteristics, albeit also supporting some investment managers that are not top quartile. Longer term, however, it is questionable whether such an approach will be successful, or whether the outcome will mirror that of the U.S. Small Business Administration, most of whose small business loans in the early years went belly-up because they stimulated the development of enterprises that were not economically viable.

Availability of Capital - Neutral/Positive

There is no shortage of risk capital in Europe-provided fiscal policies do not discourage its deployment–as economic and monetary integration has contributed to improved economic stability, stimulating the development of an equity culture among continental Europeans. Indeed, the pool of available capital is expanding rapidly–for example, more than $1.5 billion has been planned or already dedicated from just three new sources: U.S. buyout houses Carlyle and Thomas H Lee/Putnam, and LVMH's Bernard Arnault (europ@web). Other private equity managers such as Hicks Muse and Blackstone are also seeking to get in on the game as are at least two major European managers. In addition, the rapid development of private pension funds in Continental Europe represents a significant potential additional source of capital for venture funds.

Technology Breakthroughs - Positive

Venture capital can only thrive in periods of change fertilised by technology. Technology is now 'cool' and sectors where Europe leads, including wireless/mobile technology are exploding as European Community initiatives spur local support to build the technology sector. Corporate venturing is at last a reality as corporations are also seeking to become important players in the venture arena, with companies like Microsoft, Intel, 3-Com, Philips, Nokia, Oracle, and Sun seeking active co-investment/corporate venturing opportunities in Europe.

Pricing of Underlying Assets - Neutral

Cheaper deals in Europe would attract interest in particular from the U.S. venture industry, but as yet there is merely anecdotal evidence for this. Not everyone, however, agrees that the European discount, if it exists, sufficiently compensates for the market's greater inefficiencies. Lack of competition and easier access to deals is perhaps the more immediate attraction and should in time be reflected in better pricing and superior returns.

Availability of IPO and M&A Markets - Positive

However, investors will not invest in new ventures in the absence of viable means of cashing out. These include acquisition by established corporations or-the most profitable route-a public stock offering (IPO). M&A activity in the United Kingdom and Continental Europe has been rising strongly (see Exhibits 5 and 6). Several new markets for listing smaller companies have sprung up in Europe in the past few years, notably EASDAQ and the Neuer Markt and they have been performing strongly (see Exhibits 7 and 8) although not at the level of the spectacular NASDAQ. In addition, the success of the Continental junior stock markets has spurred the London Stock Exchange into forming its own technology stock sub market, TechMARK. This augurs well for European venture investors by enlarging their exit opportunities, though for the present NASDAQ is still one of the principal exit routes. The impending start of NASDAQ Europe will be critical to building exit availability and momentum going forward.

Liquidity of Local IPO Markets - Negative/Neutral

Whilst the number of IPOs has blossomed such that, "1998 marked the first time that the number of European IPOs exceeded the U.S. total",[3] if there is inadequate liquidity over time investors will go elsewhere (e.g., NASDAQ) and the European exit opportunities will dry up. Recent experience has been patchy and a material improvement in liquidity is needed. This will be boosted by the recently announced formation of NASDAQ Europe backed by NASDAQ, Softbank, Vivendi, and News Corporation, which is likely to galvanise competing markets.

The United States as a Role Model for the European Venture Market

Observers from the United States expect the European venture market to develop, if at all, as a clone of the U.S. venture market. We believe this view is wrong and expect the European market to develop with its own unique characteristics.

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[3] Broadview Technology M&A Review 1998 Full Year.

- There is no Silicon Valley in Europe and no sign of any such dense concentration evolving. Rather we expect to see a range of centres developing including London (Home Counties spanning Cambridge, Oxford, and Reading), Munich, Paris, Sophia Antipolis (France), Stockholm, Helsinki, and more recently Milan and Barcelona. This is a recognition of geography, language, and culture and mirrors the later development of the United States market, in which newer venture communities have grown up in Boston, Dallas, and Boulder. We do not see this as a fundamental restraint in Europe. Silicon Valley was important in the very early stages of development of the U.S. venture market, but there is now the advantage of the Internet which cuts through geographical barriers and which allows the European model to develop in different ways.
- Most managers will focus on investment within geographical regions, often countries. As long as there are cultural differences among European countries, there will be value in promoting concepts within individual countries and rolling them out country by country, adapted to local conditions as necessary.
- It is commonly assumed that the better managers will develop and become pan-European. This is not a necessary development in Europe since the size of several of the local markets is quite adequate for many years' growth. Furthermore, several managers have already shown that deals can be transacted across borders without restraint.
- Europe has an advantage in being able to learn from developments in the United States. Hence it may be that more investment in Europe will be in larger and later-stage concepts, drawing on U.S. early-stage developments but adapting them locally. Examples may be Freeserve in the United Kingdom adapting the AOL model to U.K. telephone charging systems, and Tiscali then replicating the Freeserve model into Italy without change.

Returns, Valuations and Risk

Historical Returns

The rolling five-year track record for the European venture market slowly improved up to 1998 to 12% per annum over the last ten years during a period when U.S. venture investing rose to 32.4% per annum (see Exhibit 9). However the growth in returns in the last few years has been such that the rolling average has risen significantly to 21.3%, following the more dramatic rise seen recently in the United States. But the European average annual compound return for this full period is only 8.3%. Under these circumstances, it is surprising that the industry managed to stay alive at all, when one considers that during this same period Europe's public equity markets (MSCI) returned 14.1% per annum, and Europe's bond markets returned 11.2%.

Prospective Returns

Indicator	Outlook for Returns
Cambridge Associates Nonmarketable Alternative Asset Database – Returns	• Improving • Overtaking buyout returns
Cambridge Associates Nonmarketable Alternative Asset Database - Multiples	• Positive • Close to U.S. experience and improving
BVCA data – Dispersions	• Limited data (U.K. only) but moving in the right direction
BVCA & EVCA data - Returns	• Limited data but moving in the right direction
Specific fund track records	• Excellent

Although European venture performed poorly in the late 1980s, it recovered in the mid-1990s, and has been showing enhanced returns in recent years (see Exhibits 10 and 11). The trend lines for company level IRRs for the United Kingdom, Continental Europe, and for Europe combined, are all rising and they give every sign of overtaking European buyout returns with the maintainable pooled mean level approaching a gross return of 30% per annum.

The historical time-weighted returns (see Exhibit 12) show similar improvement since the early 1990s and in four years out of the last six have comfortably exceeded the FT-SE All Share Index.

The average annual compound returns up to nine years have been consistently ahead of the FT-SE All Share and the James Capel European Small Cap Index indexes, but not the S&P 500 index. Comparison with U.S. venture returns illustrates only too well what a high target is being set by the United States, but do show Europe beginning to catch up.

There are no reliable dispersion data available for the Continent but the limited data available for the United Kingdom illustrate, particularly in recent years, the importance of targeting funds in the upper quartile (see Exhibit 13).

Vintage-year returns analysed by country show the importance of the United Kingdom, Germany, and France to the European returns (see Exhibit 14).

Analysis of the vintage-year returns by industry illustrates the strength of the communications sector with consistently high returns since 1990. Performance for investments in the software sector have not been as consistent, but seem promising. Health care and biotech have delivered modest, positive modest returns (see Exhibit 15).

Analysis of multiples shows the European venture industry achieving exit multiples at the high end, greater than five times investment, that now closely match U.S. venture levels (see Exhibit 16). Multiples in this range have increased from the previous year to 14.8% from 9.8%, indicating robust exits and a fast improving trend.

Although the statistics published by the EVCA are of questionable integrity, we do expect them to reflect significantly improved returns for 1999 and 2000. This expectation is based on the performance of a range of funds across Europe, many of which, particularly Continental managers, are not currently EVCA members and are therefore excluded from historical statistics, but which will probably join EVCA as they mature. Brief details of some funds are set out in the table below to illustrate the levels of recent returns. These are shown net or gross depending on the information provided by the funds, and most have not yet been verified by Cambridge Associates. Clearly, at this stage many of the returns illustrated are unrealised or, if realised, are held as locked-up paper.

Fund	Country	Dates	Realised/Total Deals (Number)	Gross Returns (%)	Net Returns (%)
A	U.K. & Continent	1993-99	4/12	44	
B	Europe	1990-99	58/171		43
C	France	1993-99	27/75	104	
D	Europe Germany Europe Europe Germany	1990-99 1990-99 1995-99 1997-99 1997-99			28 28 70 61 110
E	France & Germany	1995-98	7/27		58
F	Benelux	1995-99	2/10	48	36
G	U.K.	1993-99	5/12	134	
H	Germany	1997-99	3/22	58	
I	Switzerland	1996-99	3/15	65	
J	Germany	1993-99	18/84		>100
K	Germany	1997-99	0/24	210	
L	Benelux	1997-99	0/13	271	
M	Italy	1998-99	1/39	400	
N	France	1987-99	7/14	103	

Since the positive effects of recent Internet investments are largely not yet reflected in these data, it seems reasonable to assume that subsequent realisations, which would include such investments, will result in higher returns.

Valuations

Although we lack meaningful data on European valuations, we have many anecdotal reports of players that span the U.S.-Europe divide, looking for and finding relative bargains. Conditions are less competitive and claims of proprietary deals abound, which should lead to better pricing.

The key question, however, is whether the discount on a European deal compensates adequately for the limitations imposed by national boundaries, weaker exit opportunities, and so on. How much of a discount from Ebay prices is needed to compensate for QXL targeting initially the United Kingdom alone and incurring further investment and cultural barriers to spread its offering to other European countries?

Of note, none of the investment managers we interviewed quoted valuations as a material factor in targeting Europe, though reduced competition was quoted and may mean much the same thing. All were focused on the European opportunity.

Risks

In the 1980s, investment in European venture was largely for the foolhardy, since there was plenty of risk but virtually no return. In the 1990s, it moved into the territory of the brave, with returns improving slowly, but not enough to offset the downside risk. Now risk and reward are better balanced, as performance has improved significantly. As in the United States, however, abundant risks remain, although their composition is somewhat different in Europe.

The following chart highlights the principal risks now for investors.

Risk	Assessment
A U.S. market downturn	• High risk to European venture market if it happened now • Reducing concern as the European market matures
U.S. technology explosion falters	• Serious risk to European venture market if it happened now • Less concern as indigenous technology matures
European growth falters	• Serious risk to European venture market if it happened now • Reducing concern as the European venture market matures
European integration goes into reverse	• High risk but unlikely • Adoption of the Euro makes this unthinkable
Valuations run ahead of value	• Unlikely whilst venture market growth is strong • Becoming of greater concern as the venture market matures • In time will lead to greater discrimination by investors

A U.S. Market Downturn

Until the local markets mature and develop significant liquidity of their own, a U.S. crash would drag down European markets, sealing most exits. It would not kill the nascent European venture capital market entirely, but the venture business in some countries would suffer mortal wounds. In addition, the European venture market is largely dependent on the United States for growth strategies, and exits from U.S. trade buyers, and these would also dry up. As the European venture and equity markets mature, they will develop a greater ability to withstand such knocks. The most vulnerable period is the next two or three years of the European venture market's adolescence. On the positive side, European economies seem poised for strong growth during this period.

When we put this issue to leading managers, advisors, and policymakers, we were struck by the balance and caution these experts evinced. All acknowledge that the industry remains relatively fragile and few felt that it could sustain itself across Europe in the face of a U.S. equity bear market in the next year or two. In some countries, however–France, Germany, Benelux, and the United Kingdom–they felt that venture investing has achieved sufficient critical mass to ensure its survival in tough times. Close behind are Scandinavia and Switzerland, where the industry needs a few more strong years to build a solid base. Spain and Italy trail these other countries, but the latter is progressing rapidly.

U.S. Technology Explosion Falters

More specifically, a crash in highflying U.S. technology stocks would leave the European tech sector rudderless. Again, however, the indigenous technologies will increasingly be able to plough their own furrow, given another few years to mature. For example, the cellular market is already stronger outside the United States and likely to remain so (see Exhibit 17).

European Growth Falters

A joint U.S. and European downturn within the next two years could well suffocate the baby. Currently, however, the two regions appear to be at different points in the economic cycle, with the European expansion much less mature than that in the United States.

European Integration Goes Into Reverse

Currently, the economics of integration are running well ahead of the politics. Globalisation, technology, entrepreneurial activity, and venture capital are drivers of this change. Although European integration is unlikely to progress smoothly (particularly as Central and Eastern European countries join the club), the general trend appears irreversible. It is not a question of 'if' but 'when' the various stages of

integration take place. In the view of many political observers of all persuasions, this even applies to the United Kingdom. Once Euro coins and notes replace national currencies from January 1, 2002, the process will be cast in stone (or bronze).

Valuations Run Ahead of Value

While there is so much growth potential, it seems unlikely that disparities in supply and demand will result in dramatic market overvaluation for a period of some years. At that point in time-perhaps five years from now-more managers will have accumulated verifiable track records and developed specialised niche strategies enabling investors to discriminate more finely among them.

The European Opportunity?

The high level of local and U.S. interest in European venture investing is attributable primarily to three specific opportunities.

Opportunities	Issues
Areas of local technology excellence	• European GSM cellular telephone technology is the global standard and likely to define the next generation. • Wireless internet technology is likely to rise on the back of this, driven by enormous local market. • Local centres of excellence in Analogue technology drawn along with cellular market.
The growth opportunity	• Vast potential for growth in all aspects of technology, especially Internet services, and rationalisation of telecomms as Europe seeks to catch up with the United States.
European integration	• Euro and Internet will have a catalytic effect. • Systems and technology upgrade a priority across Europe. • Business to business applications will grow. • Central Europe – additional potential.

Local Technology Excellence

The United States dominates most areas of technology, with Europe two to five years behind. In some areas, however, Europe has a clear lead on the United States and these represent major opportunities for venture investing (which undoubtedly accounts for at least some of U.S. venture capitalists' recent interest in Europe).

Mobile Telephones

Market forces have led to a far more developed mobile telephone market in Europe than in the United States, spurred on by the national fragmentation of the continent and its historic strength in mobile telecomms (see Exhibits 17 and 18).

With the exception of the United States, the world standard for mobile telephones is the European initiative GSM (Global System for Mobile Communications), which gives European manufacturers (e.g., Nokia and Ericsson) a distinct advantage over their U.S. competitors until U.S. standards converge, which may take two generations of further technology. However, the potential for competition from the Far East is unclear and a potential dark horse.

Wireless

Its leading position in cellular technology, particularly digital (see Exhibit 17) should enable European companies to push rapidly into the development of services and applications for wireless Internet. Indeed, the convergence of telecomms and computers provides Europe with an opportunity to close parts of the technology gap with the United States.

Goldman Sachs[4] has summarised this opportunity:

There will be a tidal wave of traffic shifting from fixed to wireless networks.
There will be an accelerating consolidation around a few leading suppliers (Ericsson, Nokia, and Motorola).
The majority of new subscribers world-wide are signing into wireless not wireline networks.
We believe Nokia, Ericsson, Motorola and Panasonic-the strongest contender for the number four spot-together will capture over 70% of the global market by the end of 2000.
Stripping out the Japanese market we believe the big three will have 75%-80% of the world market and rise thereafter.
If there has been one consistent thread of analyst's thinking in the 1990's it has been to grossly underestimate the speed at which wireless industry has developed.
Even more important, the incremental revenue for Ericsson and Nokia is increasingly coming from sales of software and services.
The standards battle was decided (in Europe's favour) a decade ago. The lead looks far too great to be overcome.

Similarly, from Broadview:[5]

Because it is less infrastructure-intensive, wireless Internet technology will be deployed faster than fixed-line technology was.

[4] Goldman Sachs Investment Research, Europe/U.K. Telecomms Equipment, December 1998.
[5] Broadview White Paper – The Wireless Web – 1999.

Analogue Technology

The Internet has developed communication between computers, whilst cellular telephones have promoted mobile communication between people. Wireless data will lead increasingly to communication between people and computers, which requires analogue technology for voice integration and recognition. Two of the three principal world centres of excellence in analogue technology reside in Europe (STM and Philips) and will ensure that there are spin-off and investment opportunities in this area.

The Growth Opportunity

The United States is ahead of Europe in Internet and PC penetration (see Exhibit 19). However, Scandinavian PC penetration was already close to that of the United States at the end of 1998 and is estimated to have overtaken the United States by the end of 1999. European Internet penetration is growing at a faster rate than in the United States and is expected to match that of the United States by 2003.[6] However, the number of Internet hosts (web sites) in the United States dramatically exceeds those of any other country and of Europe taken as a whole (see Exhibit 20)–although, again, Scandinavian hosts in aggregate exceed those of the United States when related to its population (see Exhibit 21).

Most commentators have concluded that these data point to European Internet services as having enormous investment potential as they catch up, particularly in Scandinavia, the United Kingdom, the Netherlands, France, and Germany. Internet penetration currently needs PCs to network and the number of computers per thousand people in Europe is behind the United States, but not far, and racing to catch up (see Exhibit 22). Mobile Internet will change this dynamic.

The European telecomms industry overall is growing faster than in the United States but telecomm revenues are still low, suggesting great potential for profit growth in this sector (see Exhibit 23).

European Integration

Full European integration will take generations, but the process already affects every part of business and commercial life, with the Euro and the Internet as major catalysts. Investment managers see European integration creating a fertile region for venture investment in the medium and long term because:

- Economic integration will promote change and opportunity for nimble and technology focused businesses.
- European business is consciously seeking to upgrade its systems and technology rapidly to catch up with the United States. The pressures arising from economic integration are accelerating this process.

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[6] Arthur Andersen Technology Review 1999.

- Several observers believe that business-to-business applications of the Internet may have a greater eventual future in Europe than in the United States. This observation is based on the United States already having a somewhat rigid but developed business-to-business infrastructure based on traditional technology, whilst Europe has a crying need for such improved communication and may use the Internet to leapfrog a generation of technology. Pressures to adopt such solutions will be even greater as the barriers across Europe come down.

Central Europe

Large parts of central Europe, including particularly the former East Germany, are cabling up their telecomms for the first time, but with optical fibre. They could therefore leapfrog the existing infrastructures by jumping from nil telephones to wide bandwidth in one leap, while adopting digital cellular telephones wholesale. Going forward this could have major ramifications across Europe.

Impact of the Euro on Venture Capital

EMU arrives in the high streets of Europe on January 1, 2002, in the form of Euro notes and coins. Its influence will be pervasive.

Key Venture Capital Activities	Possible Impact of Euro	Possible Impact on Venture Capital
Identifying/Securing Investments	• Single currency will increase transparency of pricing and quality of products and services across markets. • Corporate restructuring privatisation will increase as government/companies strive to operate more efficiently, encouraging investment.	• Opportunities should continue to increase.
Portfolio Monitoring/Reporting	• Single currency will remove intra-regional currency fluctuations.	• Will facilitate portfolio company financial monitoring and valuations. • Will simplify operations of regional funds. • Should reduce country risk.
Portfolio Company Management and Operations	• Small businesses that trade only locally may bear the cost without recouping benefits. • Market will not be as efficient as the United States – language, labour mobility and cultural barriers will remain.	• Growth and later stage venture opportunities should increase but not to same extent as the United States. • Technology companies with international applications more attractive than those with single market products.
Exit	• Institutional investors may now invest pan-regionally. • Should decrease local nationalism of markets and increase demand for quality listings. • Equity markets across Europe are likely to expand.	• IPO opportunities will increase as equity markets grow within a more homogeneous Europe. • Small businesses listed on local markets previously supported by "nationalistic" investors may have difficulties – could impact small country funds.

Venture Capital Geography

Selected Countries/Region	Advantages	Issues
United Kingdom	• Strong managers • Venture Capital approach accepted • Links to United States	• Competitive market • Cannot decide when to join Euro
France	• Venture Capital approach largely accepted • Strong telecomms sector • Entrepreneurial culture	• Historical performance mixed • Nationalism is not dead and will not die quickly • The last truly "statist" country
Germany	• Corporate restructuring • Government support of VC industry • Large market • Conduit to parts of Central Europe	• Increasingly competitive market • Government support schemes will promote some poor deals and managers • Rigid culture
Benelux	• Large middle market • Strong managers • Fertile software sector • Links to Germany, U.K. and Scandinavia • International outlook in Netherlands in particular	• Increasingly competitive market
Italy	• Fertile middle market • Most developed and utilised mobile market in Europe • Strong management pool • Entrepreneurial culture	• VC model still developing • Lack of investment managers • Labour rigidities
Spain	• Little competition • Conduit to Latin American market	• VC model still developing • Limited local market
Scandinavia	• Strong performance of local managers (Sweden in particular) • Export orientation • Technology leaders and innovators • Open culture	• Focus on Nokia and Ericsson
Switzerland	• Strong Angel financing • Technologically advanced • Conduit to Germany, Italy, France	• Outside EEC

High Gross Domestic Product (GDP) should correlate with the prospect of a fertile venture market, though Israel shows dramatically how to break this rule. GDP in Europe is concentrated in Germany, France, the United Kingdom, and Italy (see Exhibit 24) and each of these shows strong growth over the long term. However, it is only when Europe can be viewed as a whole that its GDP is seen to challenge, indeed exceed, that of the United States and Japan (see Exhibit 25).

The activity of the private equity market as a percentage of GDP across Europe should give an indicator of venture potential and does so for the United Kingdom, Scandinavia, and the Netherlands (see Exhibit 26). France, Germany, and Italy are lagging, but have significant potential. Because of government initiatives, the level of seed and start-up investment in Germany is well ahead of France, the United

Kingdom, and the Netherlands close behind, but technology investing takes the United Kingdom well into the lead.

In short the principal focus for investors will be France, Germany, Benelux, and the United Kingdom, with Italy, Scandinavia, and Switzerland following close behind.

Shape of the Market - Now

Currently, each national venture community within Europe looks to its principal axis for growth opportunities and investments and to the United States for exit opportunities (whether by trade sales or an IPO). As a result, the exit has often been arranged at an earlier stage than desirable and before European scale benefits have been realised adequately, with the upside going to the United States. However, within Europe there are already regional groupings between the United Kingdom and Benelux countries, particularly the Netherlands, and between Germany and neighbouring countries (not including Scandinavia) based on geography, language, culture and historic trading relationships. There is a limited but growing relationship between Europe and Israel, which currently looks for its primary focus to the United States.

Shape of the Market - Future

As Europe undergoes change, and as local stock markets mature, the European venture industry will become more robust and increasingly autonomous, driving more of its own investment growth and exits closer to home.

As European integration proceeds, the increasing benefits of scale will serve to enhance the potential value of new enterprises, providing greater opportunities for European venture investors. Attracted by more convenient markets, skills, and opportunities, the Israeli venture community will forge increasingly closer ties with Europe. There are strong signs that this is already under way.

Venture Capital by Industry

Selected Industries	Advantages	Issues	Current Outlook
Communications	• Deregulation • Increasing demand • Opportunity to re-create U.S. successes	• Reluctance of existing monopolies • Nationalism not yet dead	• Very positive
Wireless/Mobile	• World leading standards and technology • Destroys barriers of nationalism, EEC, culture	• U.S. technology will converge	• Very positive
Analogue	• Essential adjunct to Wireless/Mobile sector • Voice recognition will further enhance • World leading technology	• Open to challenge	• Very positive
Software	• Strong installed base • Locally, benefits from national boundaries	• Growth suffers from national boundaries	• Positive
Information Technology	• Increasing entreprenuerialism • Government initiatives • Corporate spin-outs	• Exit still a challenge but improving rapidly	• Positive
Health care Services	• Opportunity to repeat United States concepts	• National health care in most countries • Limited private sector	• Neutral
Biotech	• Increasing entreprenuerialism • Government initiatives • Strong European pharmaceuticals sector • Corporate spin-outs	• Exit still a challenge • Traditional venture still unproven in Europe	• Neutral

The convergent technologies are the prime focus in Europe with particular accent on all aspects of wireless and cellular. Biotech and health care services have unfulfilled promise that may be realised over the next three to five years.

People

Although a strong and stable economy and an equity bull market are both important preconditions for successful venture investing-whether in Europe or the United States-manager expertise is a key determinant of returns. In Europe as in the United States, the dispersion of returns among managers is vast. Those with the greatest experience and expertise find ways to survive bear markets, while the less capable and less disciplined simply go broke. In the United States, well-established firms like Kleiner Perkins, IVP, TA Associates, and Mayfield, have served as graduate schools for venture capitalists,

effectively training the next generation of investors, who then establish their own firms. The European venture capital industry does not yet have a similar base, and this constitutes one of its major risk factors.

- There is a real shortage of proven investment skill, with most managers learning on the job and few able to point to a verifiable track record of any substance.
- In addition, team members who can spell "venture capital" are in short supply and are besieged by head-hunters. In today's market, those with real deal experience command extraordinary packages, which means that all experienced teams are vulnerable to poaching.
- However, some of this shortage of skilled investing staff may well be alleviated by recruitment from firms such as 3i. Their new focus on technology will have the effect of creating a supply of staff experienced in technology investing, some of whom will undoubtedly be attracted elsewhere by head-hunters jingling bags of gold, or by the prospect of being their own masters.

Once a new enterprise has been capitalised by venture investors, then industrial, financial, and commercial managers are often brought in to provide the fledgling business with a level of professional experience and expertise the entrepreneurs may lack. Such professionals are also in short supply.

Manager Selection

Key Evaluation Criteria

Successful managers will be those that have specific characteristics:

- Have built teams that combine experience in generating and doing deals with experience in operations management, financial management, and investment banking.
- Have extensive contacts, including those established through an active advisory board.
- Have a clear European vision and strategy.
- Are actively inclined to drop investments that underperform in order to focus resources on those that are thriving.
- Have an office, or appropriate special relationships, in the United States.
- Demonstrate convincingly their deal generation capabilities.
- Are independent from the restraints of parent organisations that contribute little more than capital.
- Are recognised within the principal syndication networks.
- Balance gut feel with a disciplined investment process.
- Maintain a balanced portfolio invested in promising sectors, rather than just one

(e.g., Internet only), although Internet and telecomms expertise is advantageous.

- Over time demonstrate a verifiable track record of realised investments.
- Have balanced and equitable arrangements for sharing of carried interest.
- Have strong key man provisions to ward off poaching of the investment team (see Terms below).

Key Criteria	Level of Importance	Expected Future Level
GP Experience	• Critical	• Will remain critical
Track Record	• Important	• Will remain important
Deal Origination Capabilities	• Somewhat important	• Increasingly important as market becomes efficient
Ability to Add Value	• Critical	• Will remain critical
Investment Strategy	• Somewhat Important	• Increasingly important as market becomes efficient
Terms	• Somewhat important	• Will remain relevant but not crucial
Depth of Network	• Critical	• Will remain critical
United States links/network	• Important	• Will become less important as Europe integrates
European Network	• Somewhat important	• Increasingly important as Europe integrates

Lessons Learned in the United States

The lessons we have learned in several decades of evaluating the U.S. venture industry may be applied to Europe:

U.S. Venture Capital Lessons	Application to Europe
• The difference between upper- and lower-quartile manager performance is significant for venture investors.	• Venture capital market less mature and still evolving. • Similar trends starting to emerge.
• Top-performing venture firms tend to repeat their leading performance.	• Similar trends starting to emerge albeit less consistently.
• Spin-outs of experienced teams from established venture firms have generally produced above median returns.	• Few spin-outs in Europe to date. Expect more as venture capital industry grows and matures.
• GP commitment has not been a useful predictor of future successes.	• More meaningful in the future as number of independent firms grows.
• Performance by fund size is mixed. Small- to mid-sized funds have generally outperformed in 1990s, perhaps because they have been in the seed- and early-stage sector where returns have been the highest.	• Size alone is not a predictor of performance. • Initially, larger size may equate to depth of network and strength of relationships to with the United States.

Stage Investing

Stage	Principal Investors	Issues
Seed	Angels and Smaller Funds	• Price Insensitive • Highly syndicated • Limited investment expertise in Europe
Early	Local and Regional Funds	• Price Sensitive • Less syndication
Late	Pan-European Funds LBO players Anyone who can get in.	• Highly price sensitive (larger quantum but lower multiples) • Technology generally proven • Professional investment management • Cross border applications more identifiable • Syndication for favours and quantum.
Pre-IPO	Everyone	Same as Late Stage
Post-Venture	Not seen in Europe as yet	

Stage investing has not developed in Europe to the extent that managers define strategy in terms of stage. Rather they are tending to operate within certain bands by virtue of their own resources and deal flow. However, the game is now changing, at least for the established European players (see Appendix C).

In time Europe will follow the U.S. experience with funds concentrating on specific stages of seed, early, late, pre-IPO, and post-venture. Late-stage and pre-IPO are likely to be more attractive to most investors initially since the risk is shared and hence reduced, the technology is generally proven, and the quantum of investment is greater albeit with lower multiples. For the moment, at least, these will tend to be found in the larger and pan-European funds.

Investment Strategies

The appetite of investors in the European venture market is likely to depend on their individual circumstances and change over time as the market develops.

- Core U.S. investors that have established access to upper-quartile (indeed decile) U.S. venture managers are unlikely to feel a pressing need to address the European venture market yet, but may wish to closely observe developments. For the long term, and in anticipation of future developments in Europe, they may want to initiate relationships with the better and more substantial pan-European managers such as Atlas and APAX, or managers that will increasingly span the U.S. and European markets such as Benchmark and Crescendo.
- Newer U.S. investors that cannot gain access to the upper-quartile U.S. venture managers may give closer consideration to the European market or to a local venture fund-of-funds.

- European and Middle Eastern investors are likely to consider the European venture market differently. They may well have difficulty accessing the best U.S. venture managers and feel at a disadvantage as regards U.S. venture investing in general. They will also have a materially different and more positive view of the country and political risks of investing in the European market, and may actively consider balancing any private equity portfolio with venture investment on one of the several bases described below, depending on their resources and appetite for risk.

Investment Strategy	Issues
Portfolio of smaller funds	• Selective approach over time • On the basis of U.S. experience, may give the best returns • Need to accept country specific risk • Individual manager and country specific risk should be balanced by portfolio spread
European/Regional funds	• Fewer opportunities • Good quantum • Administration/reporting easier • Investors with existing relationships should review and selectively seek to increase • Prospect of co-investment
Fund-of-funds	• Good means of market entry and education • May overcome some access issues • Lower risk, reduced returns • The field is only now developing
Spin-outs	• Few now, more anticipated • Selectively likely to be winners based on U.S. experience • May be possible to negotiate special relationships

Portfolio of Smaller Funds

The European market is not so mature or researched that it would yet be valuable to set out lists of the smaller managers and seek to grade them. At present any such analysis would be fundamentally inaccurate and hence misleading. Rather we will constantly review the market and will aim to highlight those managers that show promise, and that best fit the criteria, when they launch new funds. In this way, over time investors can build a portfolio of small and medium-sized funds, selected according to the criteria for success set out above.

However, as in the United States, access to some of the better quality, smaller funds is already a problem, as existing investors routinely lock up all available space in successful managers' follow-on funds. Thus, investors may consider smaller but promising funds with a view to establishing relationships with emerging leaders. This will require investment across Europe, taking on country-specific risk.

European and Regional Funds

Larger investors should consider some of the more established funds, such as the forthcoming 3i Technology Fund, APAX, Atlas, Schroder Ventures, the recent Carlyle and TH Lee/Putnam Internet Funds, or U.S. venture firms now extending their reach to Europe, such as Benchmark and Crescendo. However, new investors may also have difficulty gaining access to many of these. In addition, we are sceptical about the prospects of some of the recently announced initiatives, which seem entirely dependent on the persistence of the tech/internet bubble.

Funds-of-funds

There are several funds-of-funds about to be launched, which will focus wholly or in part on venture. These include LGT,VCM, and Vontobel. Some already have priority positions in selected funds to which access is difficult. Consequently, this may prove a reasonable way to gain entry into the European venture market, providing the only available route into some valuable relationships.

Spin-outs

We will be looking carefully at start-up or spin-out funds that seem particularly promising since our experience in the United States leads to positive expectations for such funds. We will recommend those that meet our due diligence criteria.

Terms

At present, most European venture funds' terms are relatively standard and are so far largely following the basis established for European private equity funds:

Term	European Standard
General Partner	Historically a U.K. Limited Partnership, Delaware LP or LLC. Increasingly, Continental local partnership vehicles being used (e.g., French fcpr) each of which will require tax clearance to confirm tax transparency.
Contributions	Drawn down on an as needed basis, with a minimum of ten days written notice.
Key-man clause	Will provide for either early dissolution of the Partnership or the ability to cease funding any new capital commitments in the event that a key investment professional of the GP departs.
Management Fees	1.5% to 2.5% of committed capital depending on size, decreasing at the end of the investment period.
Organisational Expense	A factor of size but generally between €0.5 million and €1.0 million and typically paid for by the LPs.

Term	European Standard
GP Commitment	1% as minimum and generally more.
Distributions	As soon as realised, initially to return to investors 100% of all paid-in capital including management fees, organisation, and other partnership expenses.
Carried Interest	20% of realised gains to the GP, but better-performing managers are already seeking carried interest formulae that ramp up for superior performance.
Hurdle Rate	8%-10% is to be expected, but will increasingly decline and vanish.
GP Catch Up	Often 50%-100% of distributions until GP has 20% of cumulative realised gains.
Allocation of Gains/Losses	Allocated on the same basis as the distribution schedule, generally on an aggregate fund basis rather than deal-by-deal.
Investment Period	Four to five years from the date of the initial or final closing.
Ancillary Fees	Includes transaction fees, director's fees, and break-up fees paid to the Partnership. Offset against fund management fee, ranges from 50% to 100%.
GP Clawback	Ensures that distributions upon the liquidation of the Partnership are made in accordance with the distribution policy. An escrow account is established to manage the process.
UBIT	Reasonable best efforts to avoid.

Soon, however, some managers will seek to raise funds with non-standard terms, as has happened in the United States, with carried interest greater than the traditional 20%, declining or non-existent hurdle rates, and deal-by-deal carried interest. A few such have already appeared in Europe, but at least one has effectively failed to raise its fund in part because of the terms.

What matters is a proper balance. A manager that has developed an outstanding realised and verified track record can ask for, and may achieve, non-standard terms. In all other instances, terms should be standard.

Investors should pay particularly close attention to key-man provisions in a fund's terms. As noted previously, the shortage of competent investment staff with deal-making experience and verified track records means constant attempts at poaching from established teams. Some of the offers currently dangled in front of individuals and whole teams by financial firms desperate to access the market are extraordinary and irrational. Investors should therefore check fund documentation carefully to ensure that teams have adequate incentives to stay together, and that individuals are severely constrained from leaving. No legal documentation can protect absolutely against departures, but much can and should be documented.

Since Continental European managers are likely to present their funds in a variety of different vehicles, investors should seek competent professional advice to ensure that they understand the tax

implications, and other structural characteristics, of each prospective investment. A start may be made by referring to the European Venture Capital Association Web Site (www.evca.com/publications.html) where there are technical papers that can be downloaded and which cover the variety of investment vehicles in Europe.

EXHIBITS

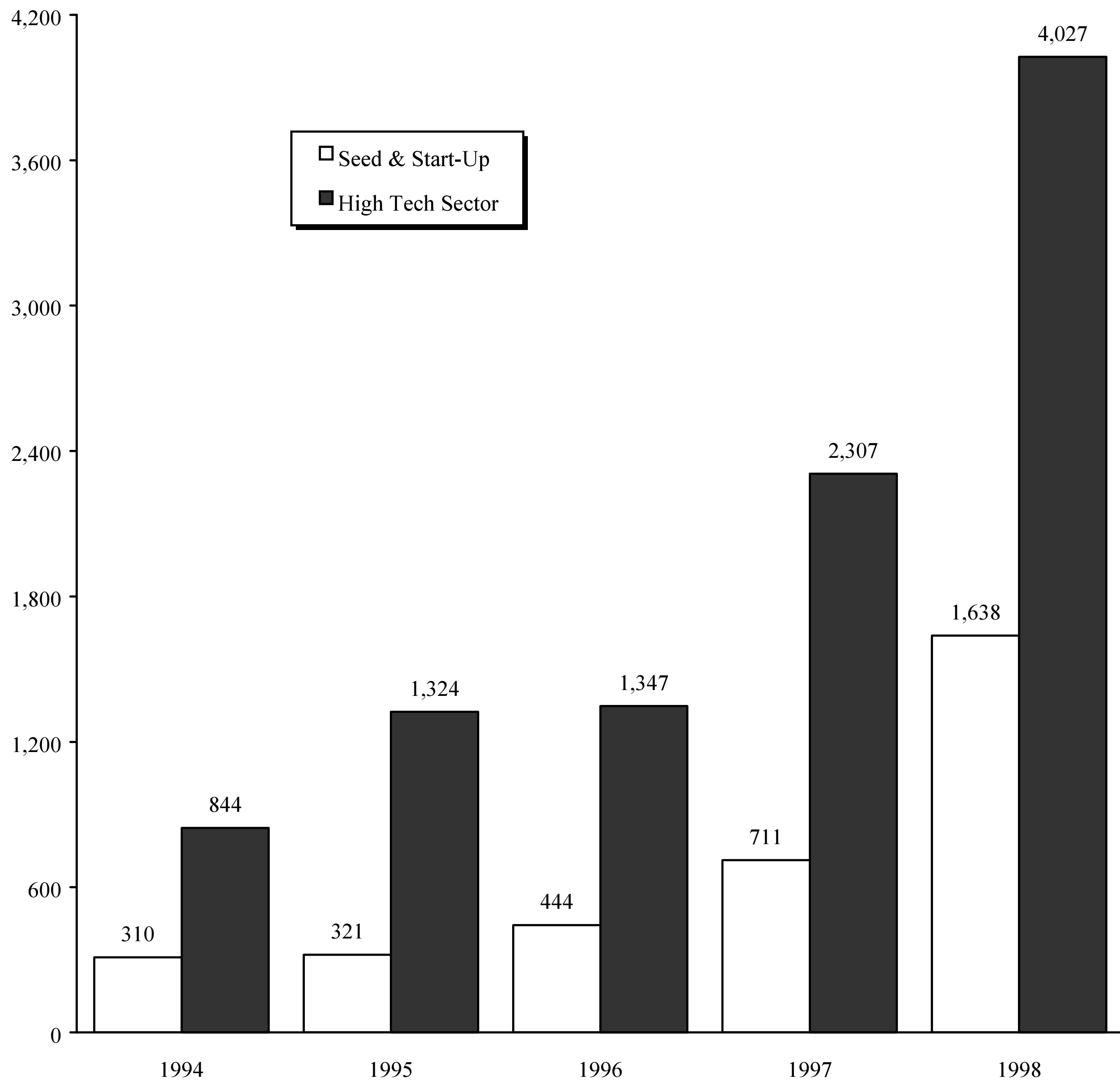
THE VENTURE CAPITAL POOL

Exhibit 1

ANNUAL INVESTMENT IN SEED, START-UP AND HIGH TECH
EUROPE INCLUDING THE UNITED KINGDOM

1994-98

(Euro millions)



Source: European Venture Capital Association Yearbook.

Exhibit 2

AMOUNT INVESTED IN SEED, START-UP AND HIGH TECH IN EUROPE

1998

(Euro millions)

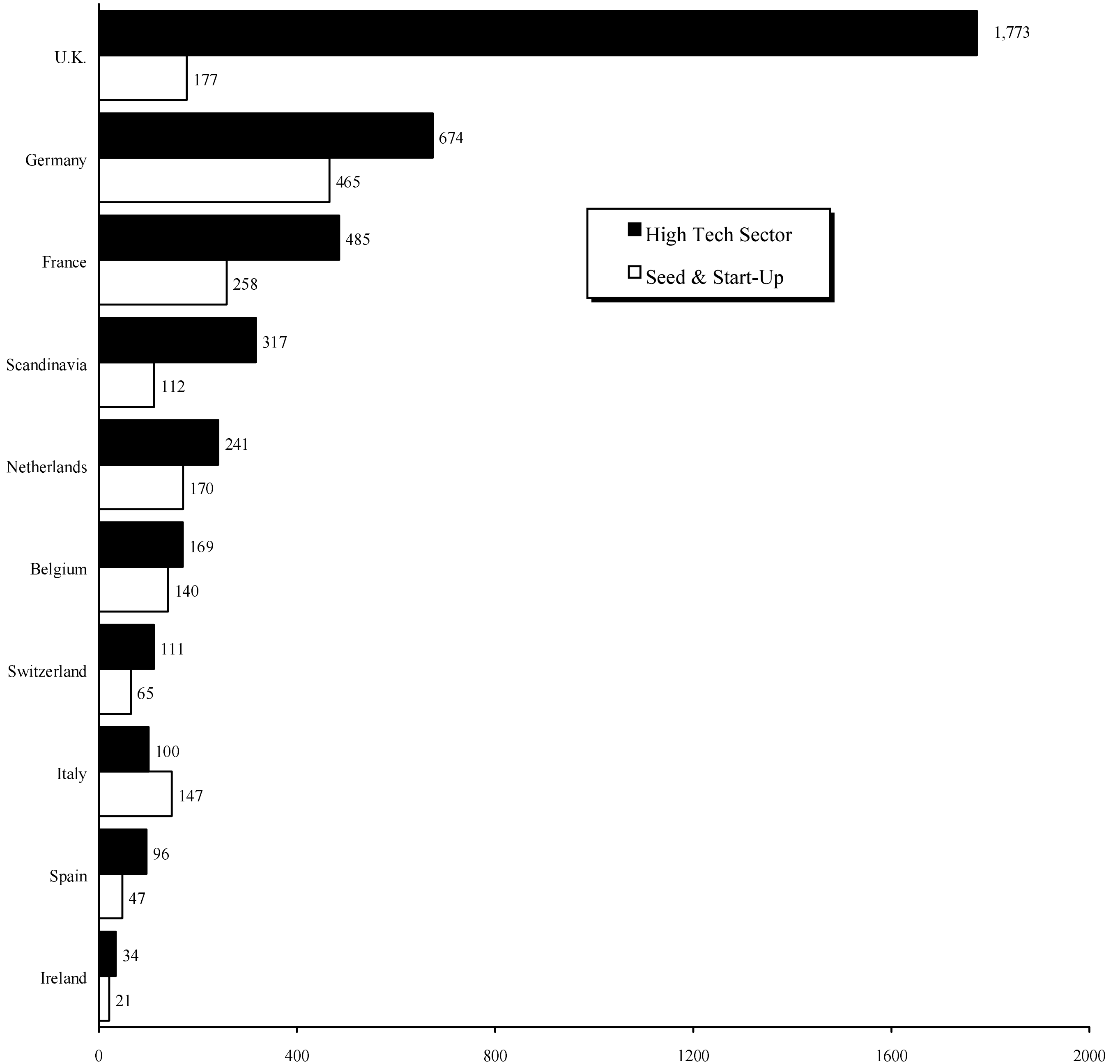
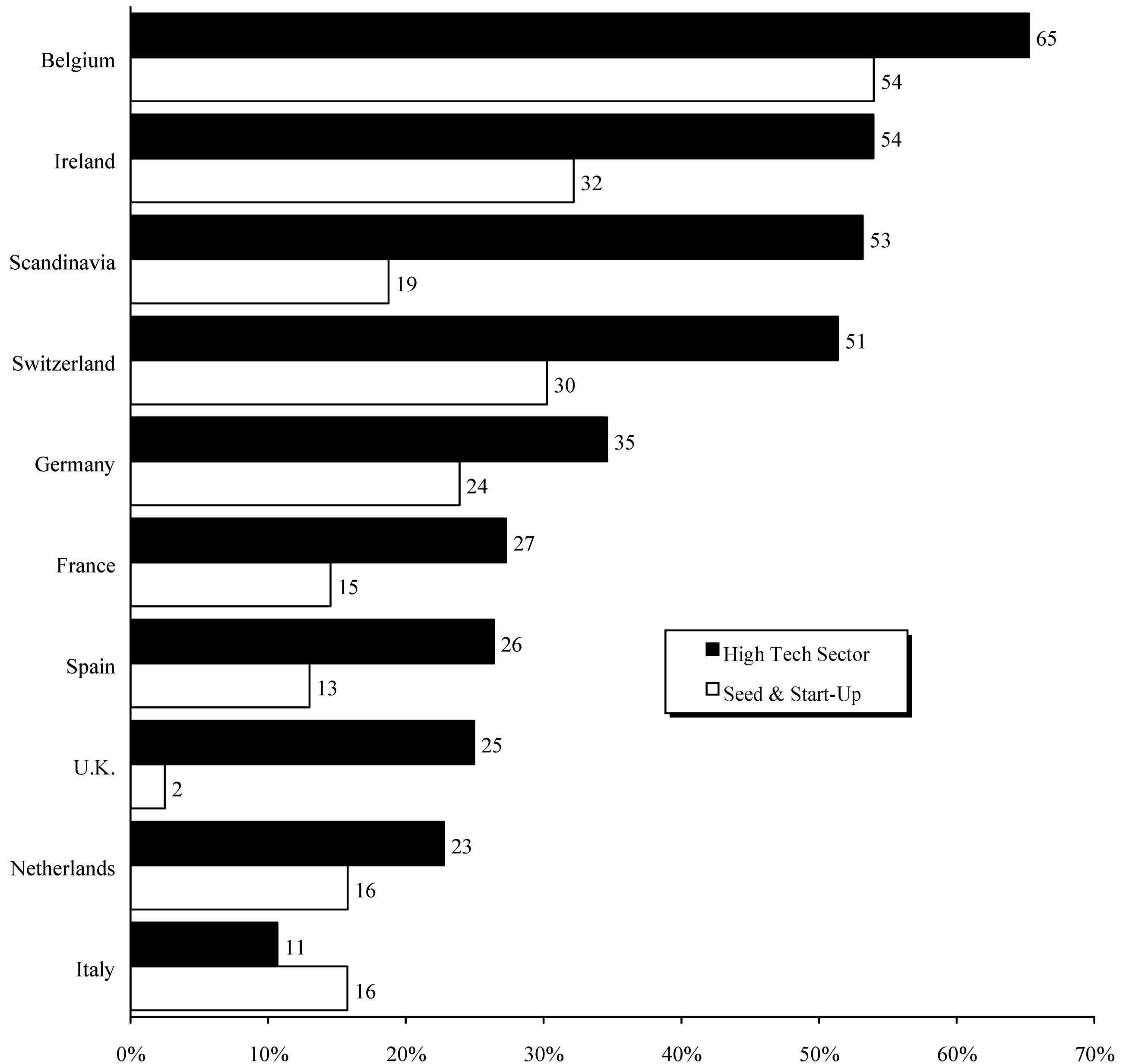


Exhibit 2 (continued)

AMOUNT INVESTED IN SEED, START-UP AND HIGH TECH IN EUROPE

1998

(Percent per country)



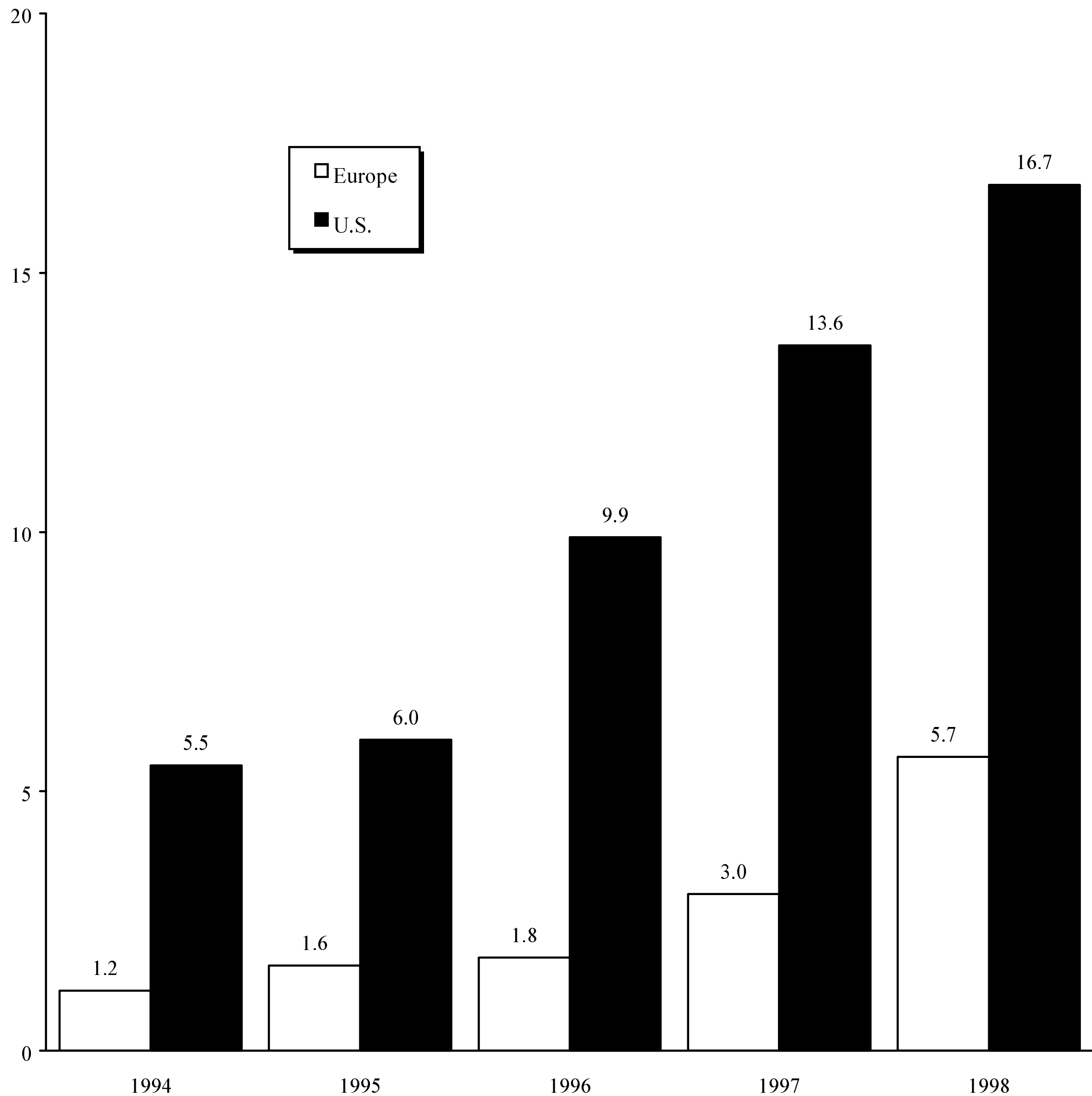
Source: European Venture Capital Association Yearbook.

Exhibit 3

AMOUNT INVESTED IN VENTURE CAPITAL

1994-98

($ billions)

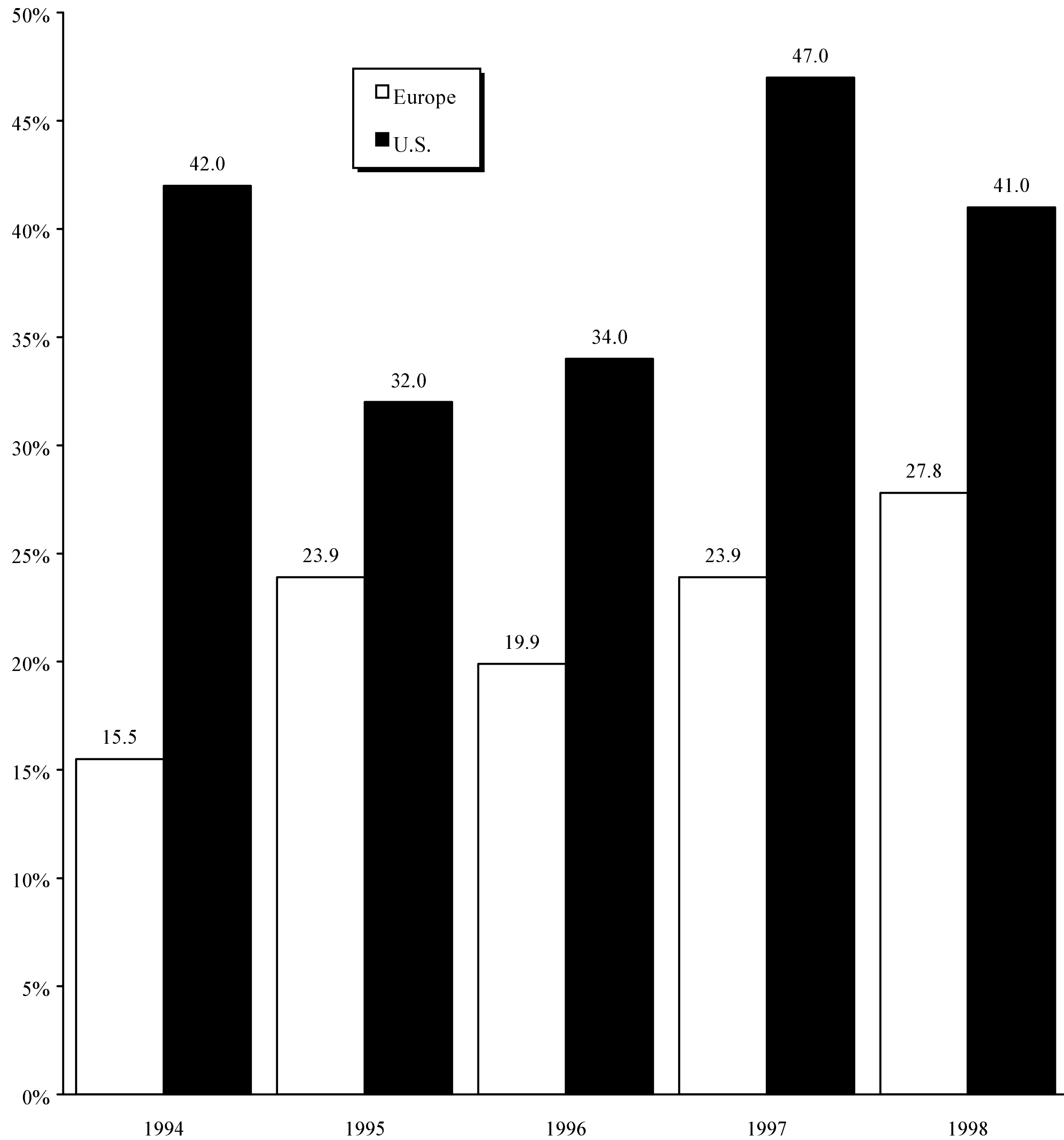


Sources: Venture Economics, Inc. (data includes investments made by SBICs and buyout funds) and European Venture Capital Association Yearbook (data includes Seed, Start-up, and High Tech).

Exhibit 4

VENTURE CAPITAL AS PERCENTAGE OF TOTAL INVESTMENT

1994-98



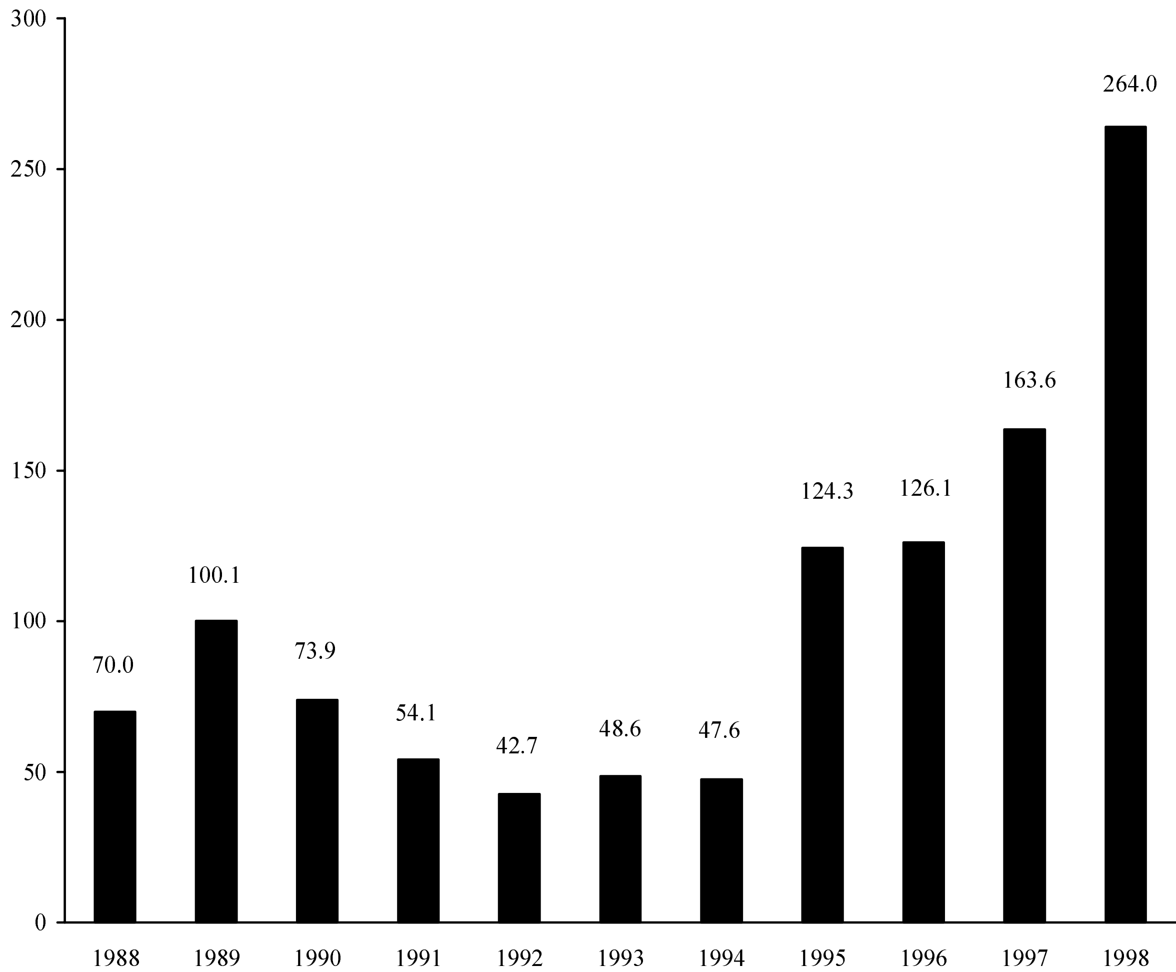
Sources: *Buyouts*, Securities Data Company, and European Venture Capital Association Yearbook.

Exhibit 5

COMPLETED U.K. MERGER AND ACQUISITION ACTIVITY TOTAL VOLUME

December 31, 1998

($ billions)



Number of Deals with Disclosed Values

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
1,240	1,309	1,124	882	926	1,014	1,218	1,341	1,441	1,767	1,811

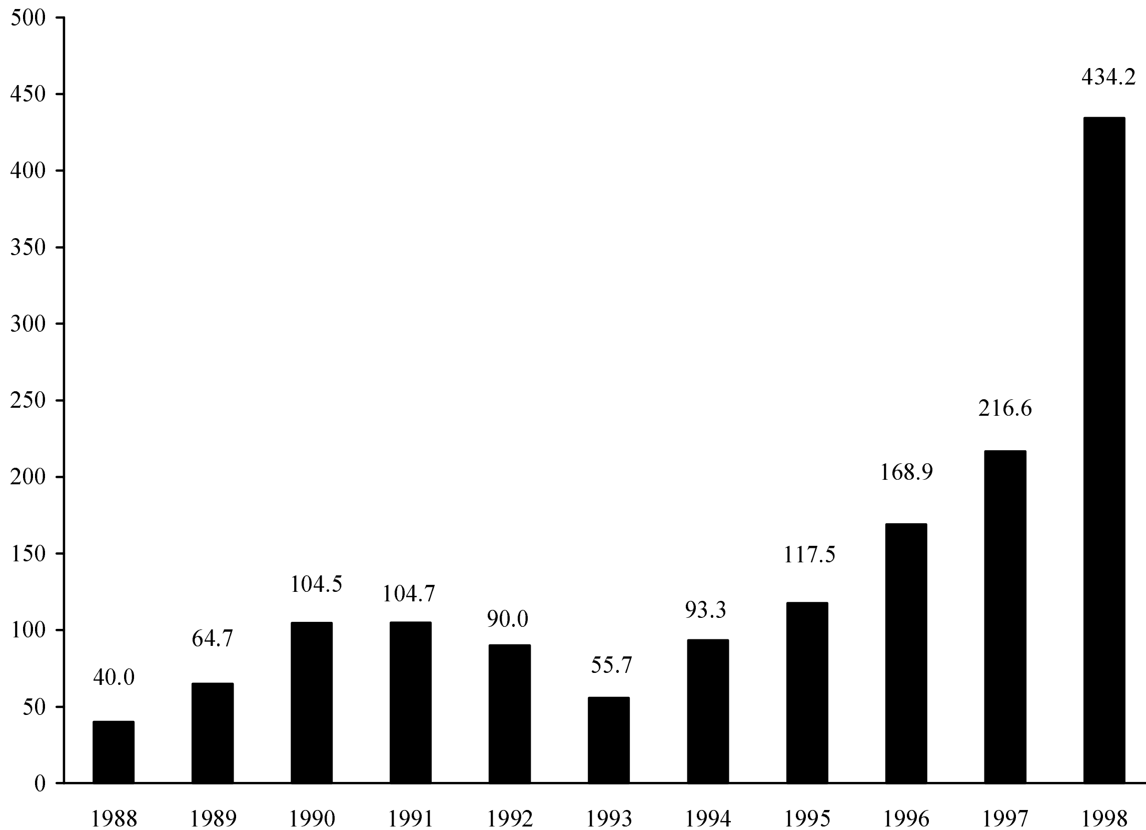
Source: Securities Data Company.

Exhibit 6

COMPLETED CONTINENTAL EUROPE MERGER AND ACQUISITION ACTIVITY TOTAL VOLUME

December 31, 1998

($ billions)



Number of Deals with Disclosed Values

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
353	501	587	939	917	742	793	872	847	1,087	1,410

Source: Securities Data Company.

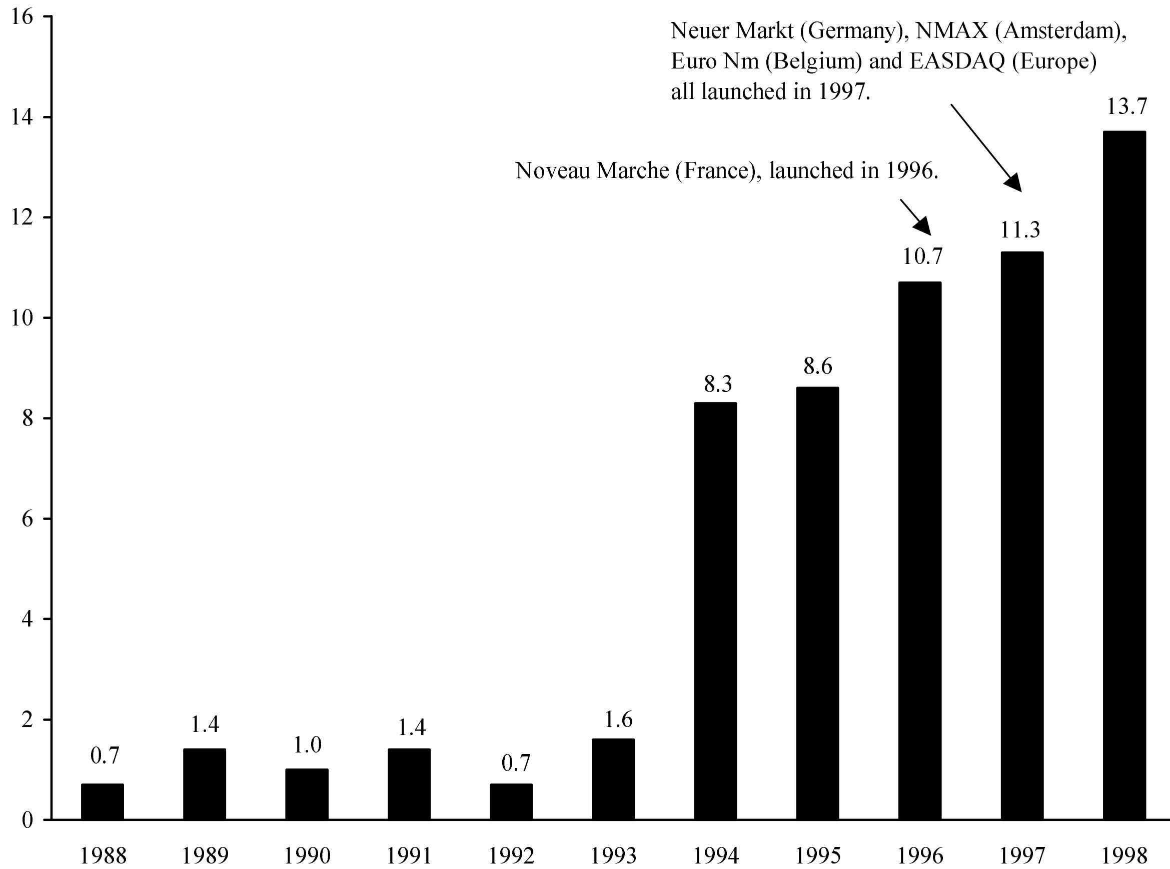
Note: Continental Europe consists of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, The Netherlands, Norway, Portugal, Spain, Sweden, and Switzerland.

Exhibit 7

CONTINENTAL EUROPE IPO ACTIVITY TOTAL VOLUME

December 31, 1998

($ billions)



Number of Deals with Disclosed Values

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
10	21	8	10	9	21	39	51	61	102	130

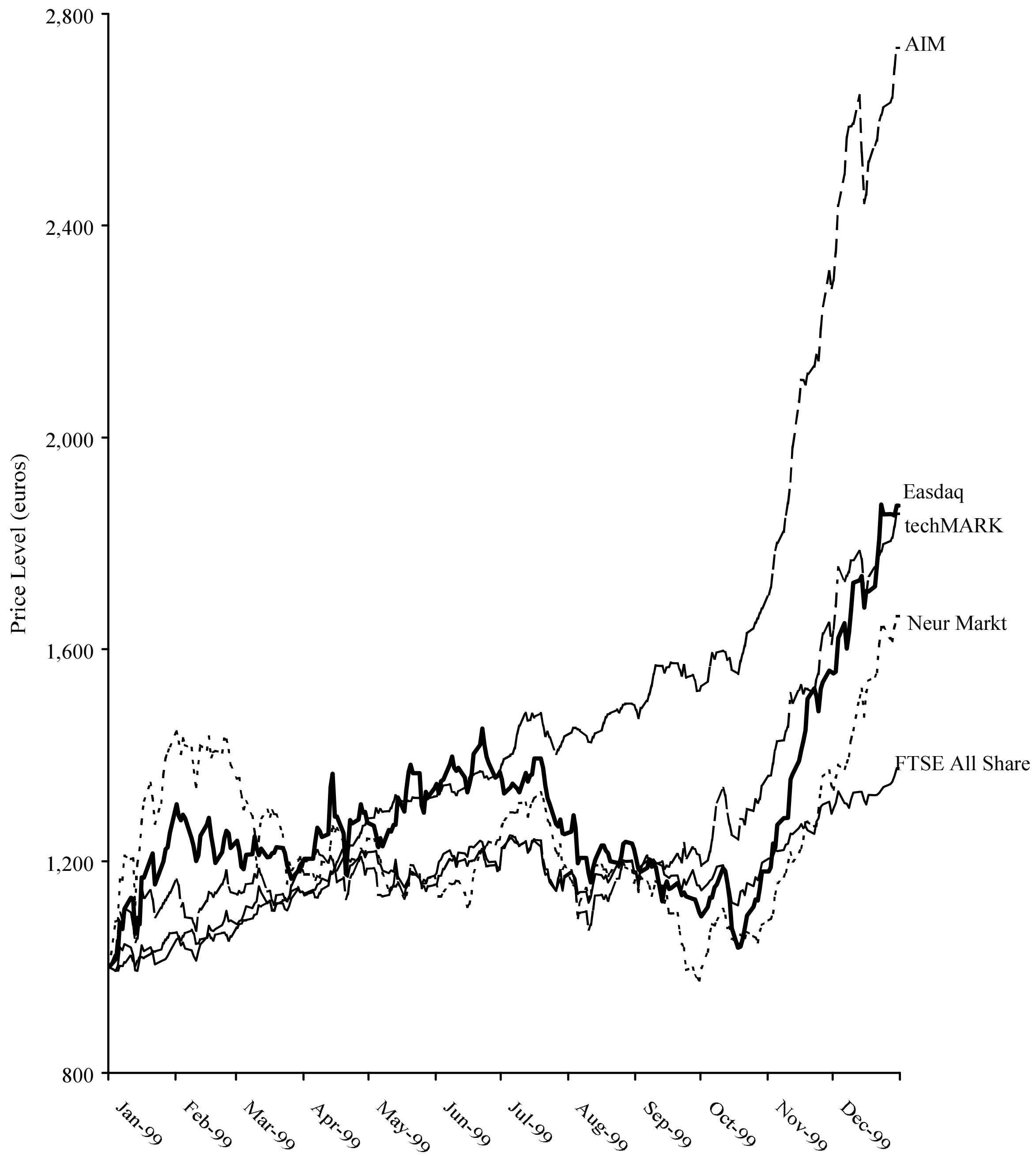
Source: Securities Data Company.

Note: Continental Europe consists of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy,The Netherlands, Norway, Portugal, Spain, Sweden and Switzerland.

Exhibit 8

EUROPEAN STOCK EXCHANGES

1999

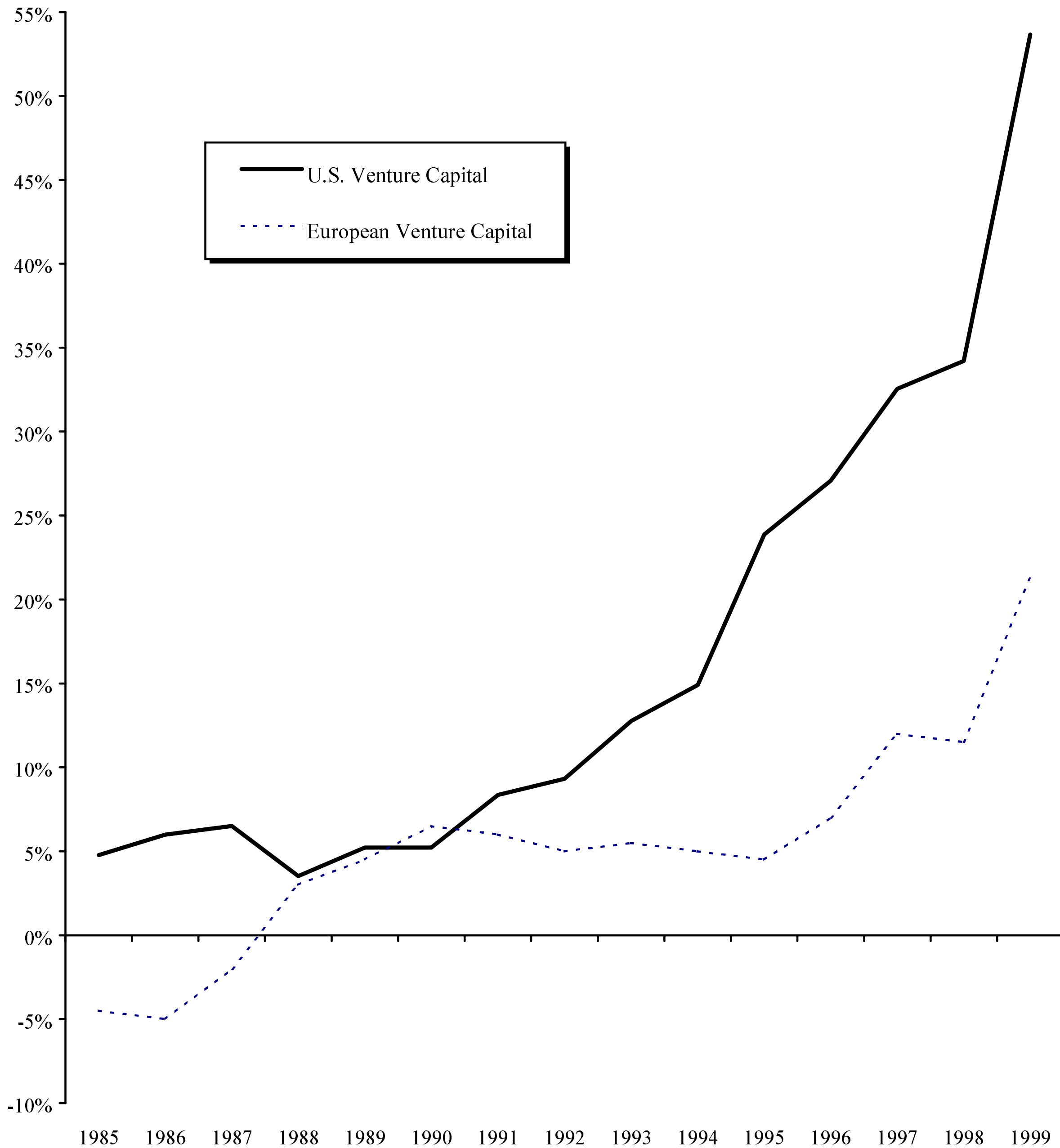


VENTURE CAPITAL PERFORMANCE

Exhibit 9

EUROPEAN AND U.S. VENTURE CAPITAL FIVE-YEAR ROLLING IRRs

1985-99



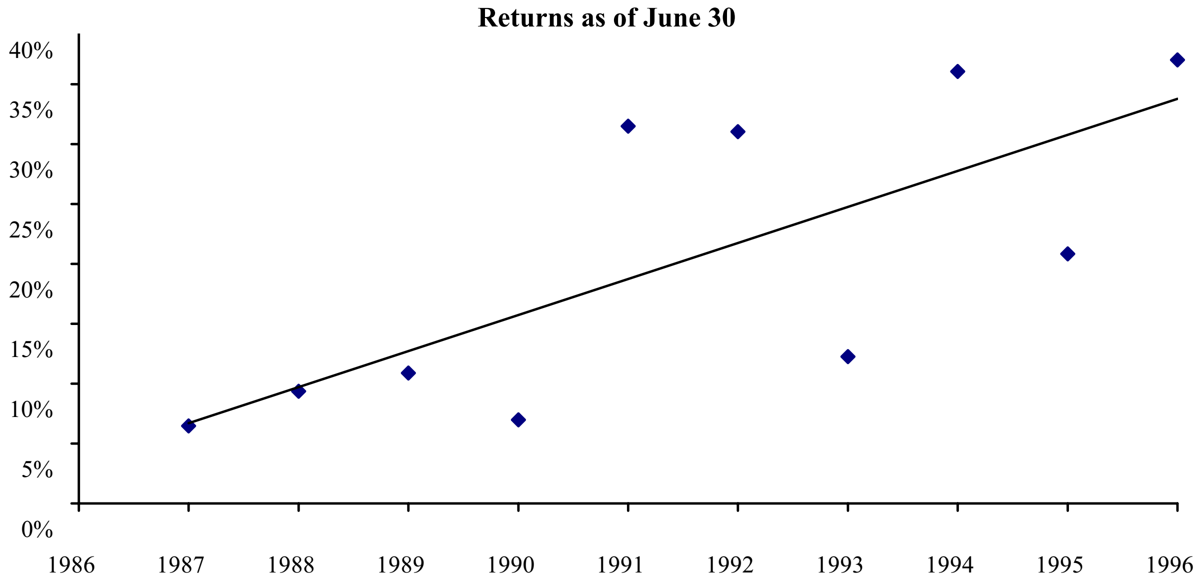
Sources: Cambridge Associates Inc. Nonmarketable Alternative Assets Database and European Venture Capital Association Yearbook.

Note: U.S. Venture Capital returns as of 30 September 1999.

Exhibit 10

U.K. AND CONTINENTAL EUROPE VENTURE CAPITAL AND PRIVATE EQUITY COMPANY LEVEL IRRs

Returns as of June 30



Year of Initial Investment	U.K. and Continental Europe Venture Capital		U.K. and Continental Europe Private Equity	
	IRR	# of Co's	IRR	# of Co's
1987	6.48	19	76.38	4
1988	9.36	16	44.51	11
1989	10.9	11	0.92	15
1990	6.98	24	(0.62)	12
1991	31.51	33	13.40	16
1992	31.03	33	18.30	18
1993	12.26	31	77.05	24
1994	36.06	31	26.78	27
1995*	20.84	42	4.99	23
1996*	37.04	34	35.82	35
1997*	63.44	53	28.66	49
1998*	29.01	67	(8.32)	27
1999*	(12.25)	41	(17.51)	12
TOTAL	**21.23**	**435**	**24.36**	**273**

Source: Cambridge Associates, Inc. Nonmarketable Alternative Assets Database.

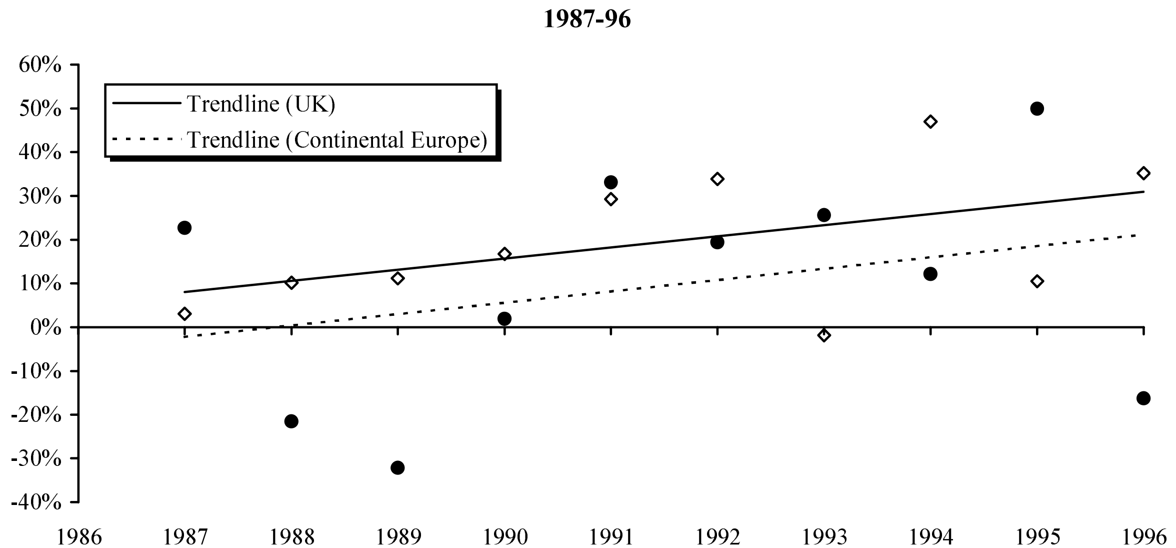
Note: Returns are pooled mean IRRs for all companies receiving initial financing in a given year and are gross of fees and carried interest.

*Most of these investments are too young to have produced meaningful returns. Analysis and comparison of returns to benchmark statistics may be irrelevant.

Exhibit 11

U.K. AND CONTINENTAL EUROPE VENTURE CAPITAL COMPANY LEVEL IRRs

1987-96



Year of Initial Investment	U.K. VC IRR	U.K. VC # of Co's	Continental Europe VC IRR	Continental Europe VC # of Co's
1987	3.02	15	22.69	4
1988	10.17	14	(21.52)	2
1989	11.13	6	(32.16)	5
1990	16.78	11	1.90	13
1991	29.28	16	33.10	17
1992	33.89	14	19.42	19
1993	(1.85)	17	25.59	14
1994	46.96	14	12.14	14
1995*	10.49	26	49.92	14
1996*	35.19	29	(16.25)	8
1997*	40.97	23	103.01	26
1998*	39.22	43	18.13	22
1999*	(12.64)	23	(11.86)	17
TOTAL	**20.13**		**23.79**	

Source: Cambridge Associates, Inc. Nonmarketable Alternative Assets Database.

Note: Returns are pooled mean IRRs for all companies receiving initial financing in a given year and are gross of fees and carried interest.

*Most of these investments are too young to have produced meaningful returns. Analysis and comparison of returns to benchmark statistics may be irrelevant.

Exhibit 12

EUROPEAN AND U.S. VENTURE CAPITAL HISTORICAL TIME-WEIGHTED RETURNS

As of June 30, 1999

Annual Returns (%)

	European Venture Capital	U.S. Venture Capital	S&P 500	FT-SE All Share	J.C. European Small Cap*
1988	2.5	2.8	16.6	7.4	15.8
1989	2.2	6.7	31.7	21.3	10.3
1990	(0.3)	2.3	(3.1)	8.0	(5.1)
1991	(0.5)	24.8	30.5	17.1	(0.9)
1992	(5.9)	11.6	7.6	(2.5)	(22.0)
1993	17.0	20.0	10.1	25.5	30.4
1994	17.6	17.3	1.3	(0.5)	5.3
1995	14.5	48.9	37.6	22.9	5.0
1996	29.2	41.7	23.0	28.6	18.9
1997	8.4	37.9	33.4	18.8	10.1
1998	41.7	27.6	28.6	15.0	8.3
1999 (6 mos)	13.1	63.2	12.4	5.8	3.9

Average Annual Compound Returns (%)

	European Venture Capital	U.S. Venture Capital	S&P 500	FT-SE All Share	J.C. European Small Cap*
10 Year	12.5	28.8	18.8	15.2	5.2
9 Year	14.2	31.5	19.0	14.0	3.3
8 Year	16.9	35.1	20.6	16.4	7.4
7 Year	18.2	37.7	21.6	14.6	7.3
6 Year	22.2	41.4	23.0	18.0	11.2
5 Year	21.7	46.6	27.9	19.7	9.1
4 Year	24.3	50.9	28.3	19.8	9.5
3 Year	28.9	47.5	29.1	20.8	9.7
2 Year	28.5	56.4	26.4	15.9	8.2
1 Year	21.9	80.2	22.8	4.1	(9.3)

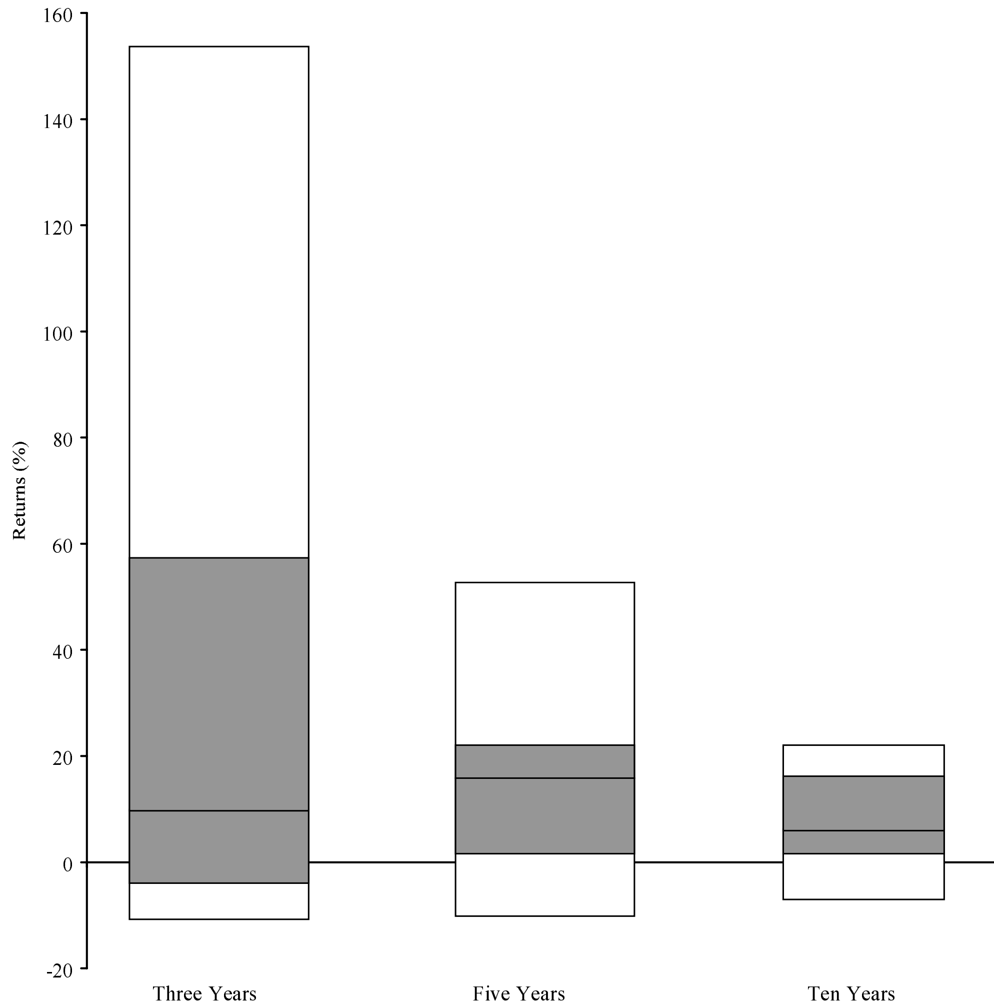
Sources: Cambridge Associates, Inc. Nonmarketable Alternative Assets Database and Datastream International.

Note: Returns are net of fees, expenses and carried interest.

* James Capel European Small Cap Index.

Exhibit 13

U.K. EARLY-STAGE RETURN DISPERSIONS



	Three Years	Five Years	Ten Years
Median	11.5	15.8	4.4
10th Percentile	149.4	55.0	20.8
90th Percentile	-8.4	-9.8	-6.0

Source: British Venture Capital Association Performance Measurement Survey 1998.

Exhibit 14

EUROPEAN VENTURE CAPITAL DOLLAR-WEIGHTED IRRs ON VINTAGE YEAR COMPANIES BY COUNTRY

As of June 30, 1999

Pooled Gross Mean

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
United Kingdom	16.78	29.28	33.89	21.47	42.44	11.70	37.99	27.08	32.64	(12.64)
France	0.61	20.33	29.42	52.02	16.02	13.40	24.68	28.91	3.52	(10.20)
Scandinavia	(38.75)	30.17	N/A	N/A	N/A	N/A	N/A	54.48	(4.78)	(8.83)
Belgium	N/A	N/A	N/A	N/A	46.55	N/A	168.66	(2.92)	0.01	0.01
Netherlands	N/A	N/A	N/A	21.50	22.52	48.72	(47.33)	98.19	0.01	N/A
Germany	47.92	11.54	46.61	18.61	(47.98)	65.19	N/A	130.47	24.63	(7.50)
Iberia	2.86	69.51	13.16	(15.46)	N/A	N/A	N/A	N/A	N/A	(13.74)
Switzerland	N/A	N/A	N/A	28.00	N/A	N/A	N/A	N/A	42.29	N/A
All Companies	6.98	31.51	31.38	12.26	36.06	20.84	37.04	63.94	29.10	(12.25)
# of Companies	20	25	32	31	31	42	34	49	55	41

Source: Cambridge Associates, Inc. Nonmarketable Alternative Assets Database.

Notes: Scandinavia region includes Norway, Sweden, and Denmark. N/A indicates inadequate number of companies in sample.

Exhibit 15

EUROPEAN VENTURE CAPITAL DOLLAR-WEIGHTED IRRs ON VINTAGE YEAR COMPANIES BY FOCUS/INDUSTRY

As of June 30, 1999

Pooled Gross Mean

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Communications	27.54	33.54	30.88	36.64	68.07	3.10	88.24	162.65	42.36	(14.75)
Hardware	N/A	91.24	N/A	N/A	27.84	N/A	(26.75)	56.65	(2.76)	N/A
Software	(0.56)	29.16	(43.72)	111.99	0.01	64.45	(69.77)	15.20	41.59	(1.29)
Health Care/Biotech	17.72	28.64	67.20	7.36	26.67	4.12	7.11	16.82	18.10	(8.42)
Consumer Retail	14.55	37.40	(5.71)	(9.30)	(2.96)	22.19	188.83	27.34	0.67	(11.13)
Financial	N/A	29.17	N/A	32.14	N/A	N/A	5.71	N/A	(6.16)	(20.01)
Electronics	N/A	N/A	N/A	(93.01)	N/A	(0.17)	24.35	8.59	(9.18)	(15.43)
Environmental	N/A	N/A	N/A	(15.46)	N/A	1.52	1.41	(1.63)	N/A	N/A
Chemicals/Materials	(1.72)	39.96	37.84	110.32	26.11	0.01	N/A	N/A	N/A	N/A
Manufacturing	N/A	67.54	N/A	N/A	N/A	96.96	N/A	(5.64)	(5.11)	(13.35)
Construction	N/A	12.59	27.92	N/A	20.78	1.59	N/A	62.16	N/A	N/A
All Companies	6.98	31.51	31.38	12.26	36.06	20.84	37.04	63.94	29.10	(12.25)
# of Companies	20	25	32	31	31	42	34	49	55	41

Source: Cambridge Associates, Inc. Nonmarketable Alternative Assets Database.

Note: N/A indicates inadequate number of companies in sample.

Exhibit 16

MULTIPLES ANALYSIS OF EUROPEAN AND U.S. PRIVATE EQUITY REALISED INVESTMENTS

As of June 30, 1999

	Write-offs % of Sample	Multiple Value <1x % of Sample	Multiple Value 1x to 2.5x % of Sample	Multiple Value 2.5x to 5x % of Sample	Multiple Value 5x< % of Sample
European Venture Capital [1]	13.6%	19.9%	32.4%	19.3%	14.8%
U.S. Venture Capital [2]	19.6%	27.1%	21.3%	16.2%	15.8%
U.S. LBOs [3]	6.6%	22.6%	33.5%	23.2%	14.1%
Average of Total Sample All U.S. Private Equity	13.1%	24.9%	27.4%	19.7%	14.9%

Source: Cambridge Associates, Inc. Nonmarketable Alternative Assets Database.

Note: Multiples are calculated by taking the (absolute value) individual companies total realised value divided by cumulative cost of investment.

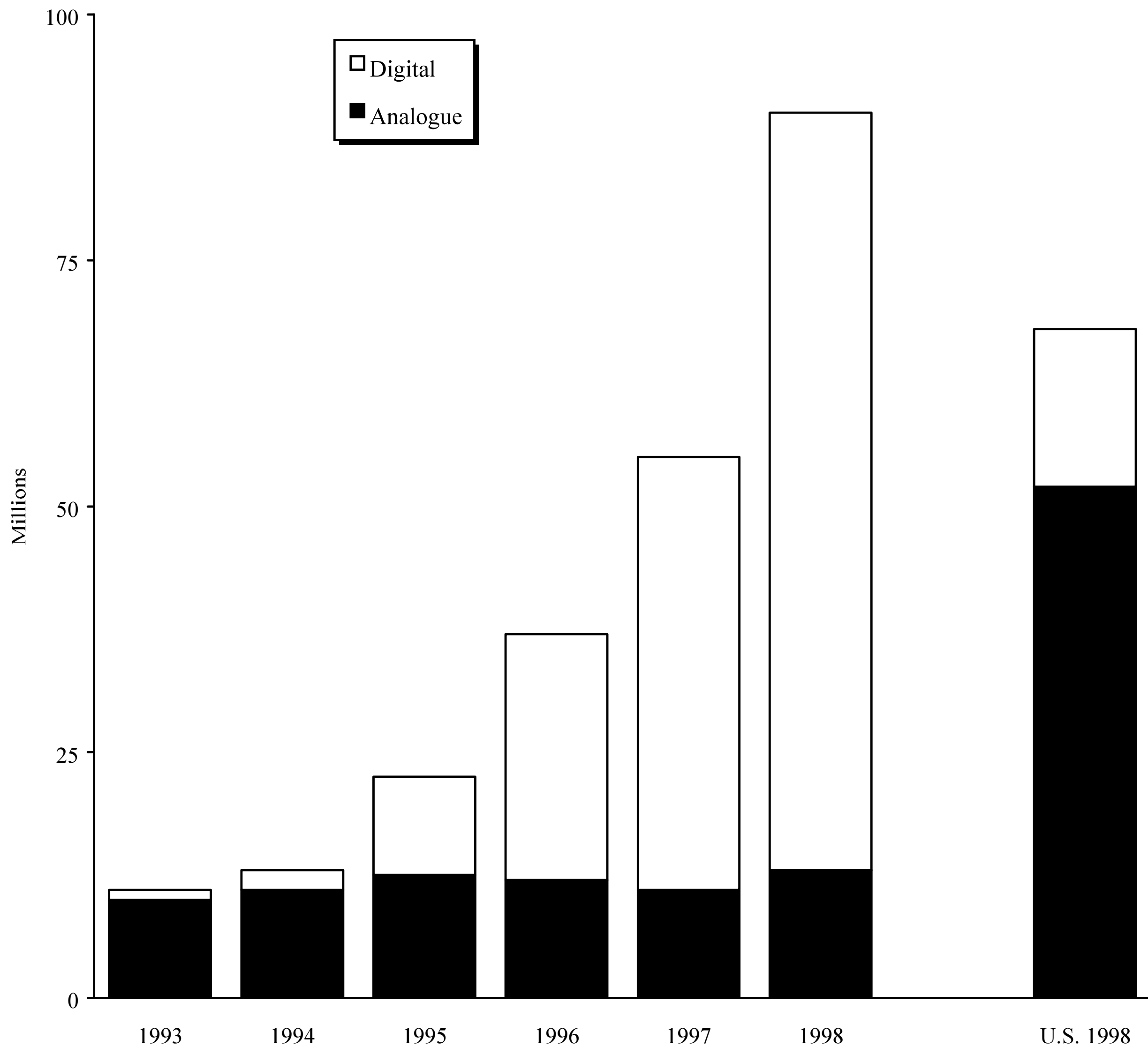
[1] European Venture Capital sample includes 176 companies.
[2] U.S. Venture Capital sample includes 5606 companies.
[3] U.S. buyout sample includes 771 companies.

THE TECHNOLOGY SECTOR

Exhibit 17

EUROPEAN CELLULAR TELEPHONE SUBSCRIBERS

1993-98



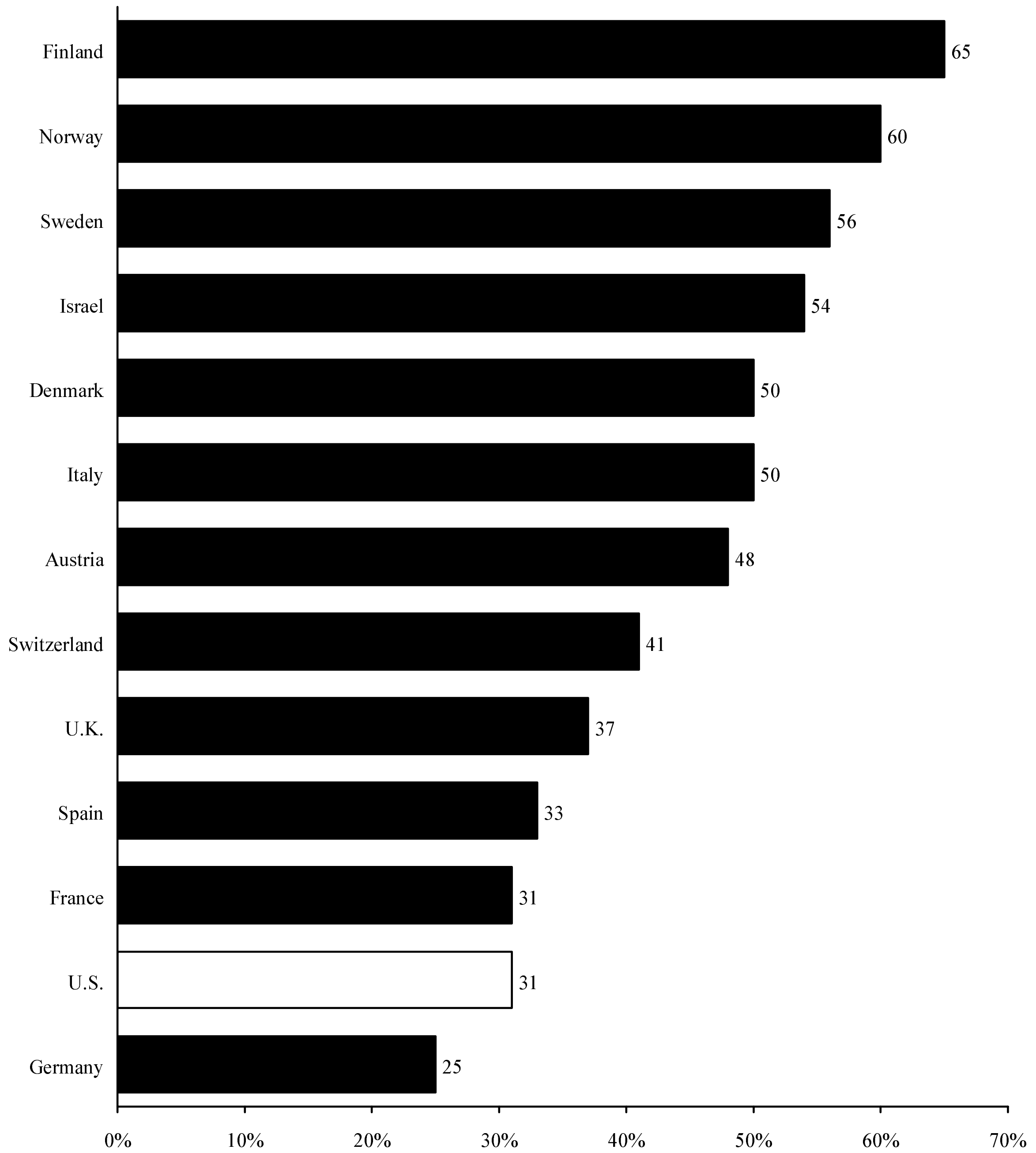
Sources: ITU (1993-97), FT Mobile Communications and Public Network Europe (Europe 1998 figures), NationsBanc Montgomery Securities, and DLJ (U.S. 1998 figures).

Note: Statistics include 15 European Union Countries plus Norway and Switzerland.

Exhibit 18

CELLULAR PENETRATION IN MAJOR MARKETS

1999

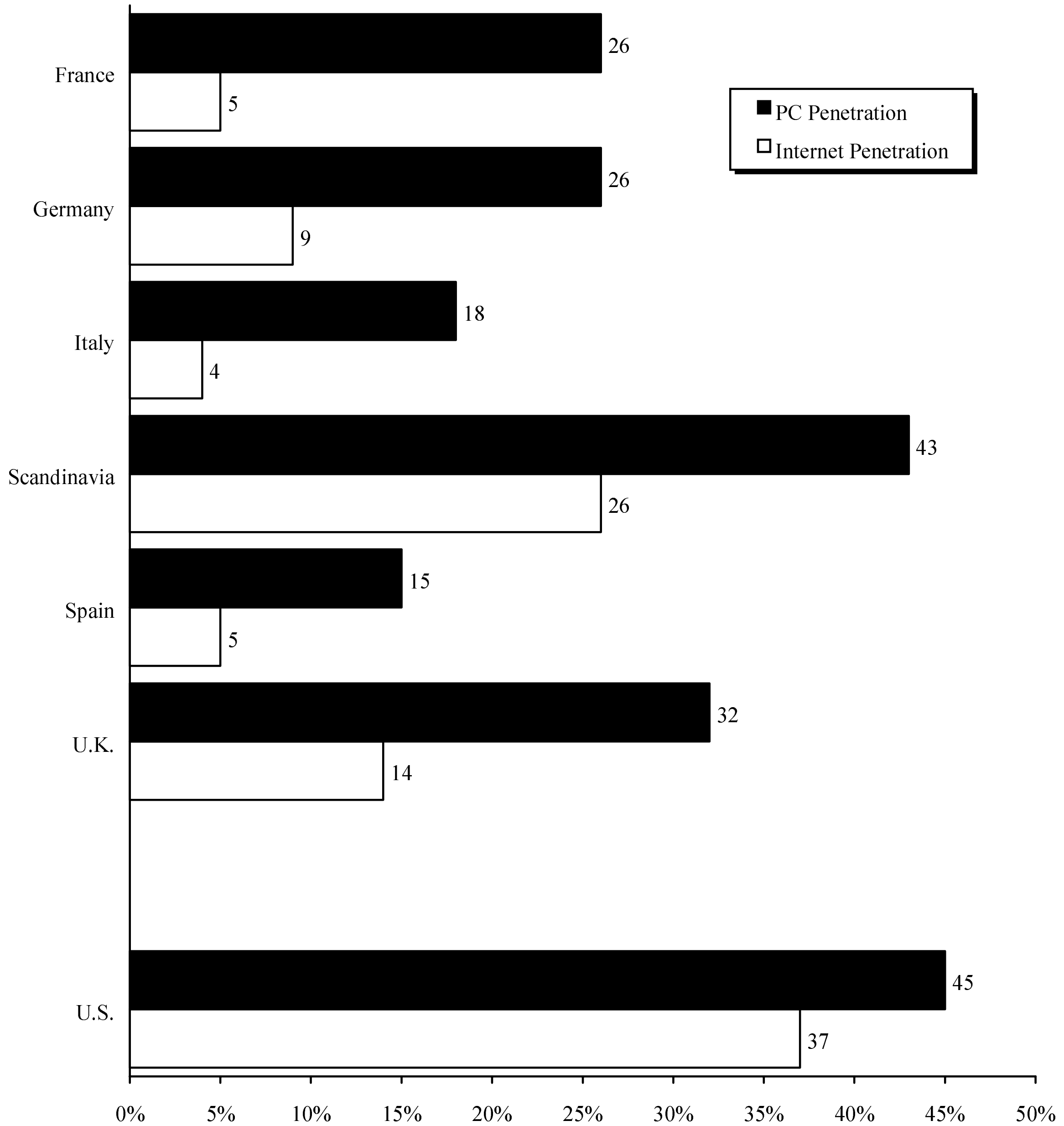


Sources: World Bank, EMC, DLJ, and SG Warburg.

Exhibit 19

EUROPEAN PC AND INTERNET PENETRATION

1998

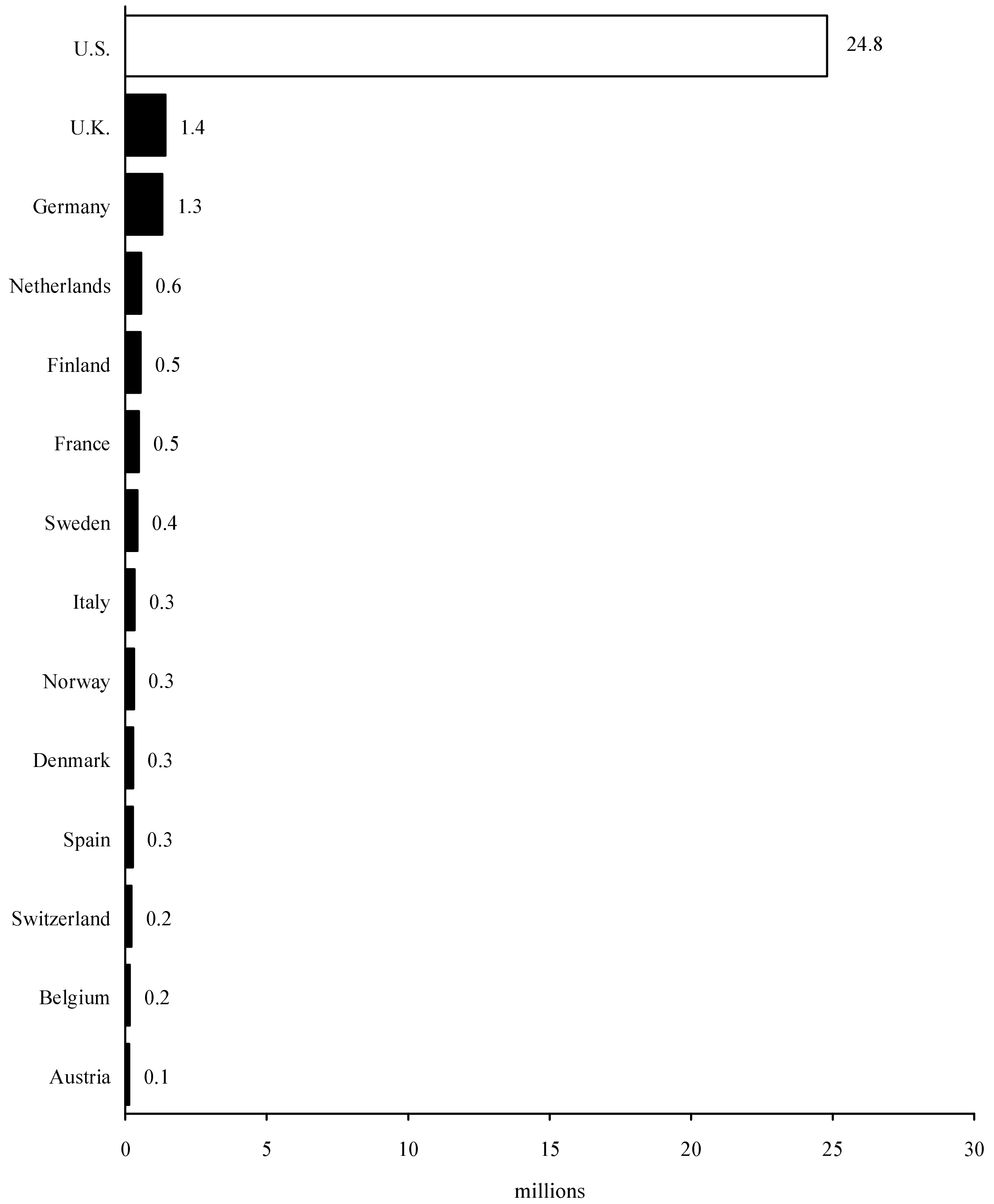


Sources: *The Wall Street Journal*, ITU, Morgan Stanley Dean Witter, and GMT estimates.

Note: Scandinavia statistic includes Denmark, Finland, Norway, and Sweden.

Exhibit 20

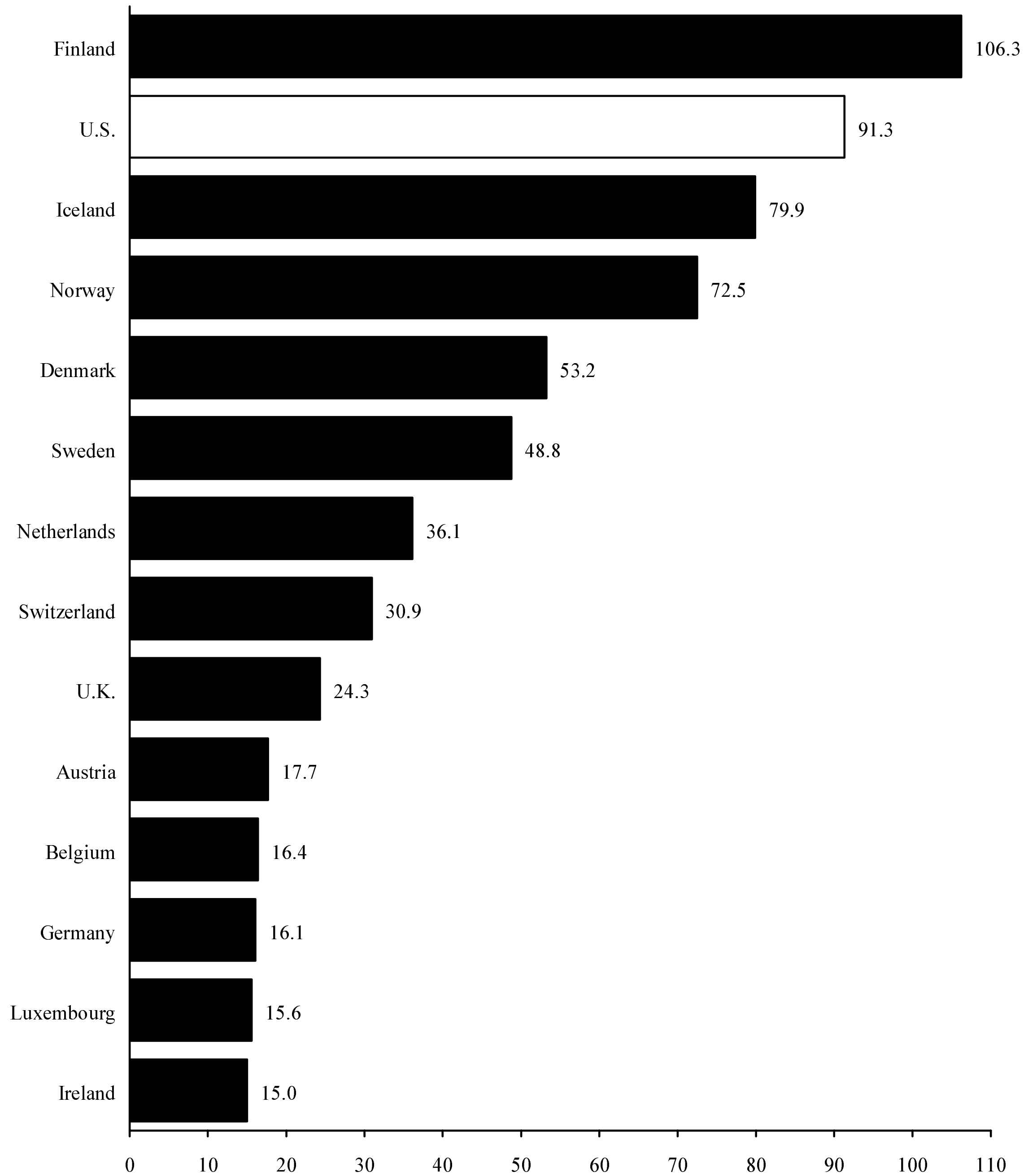
INTERNET HOSTS



Source: The Economist: World In Figures 2000.

Exhibit 21

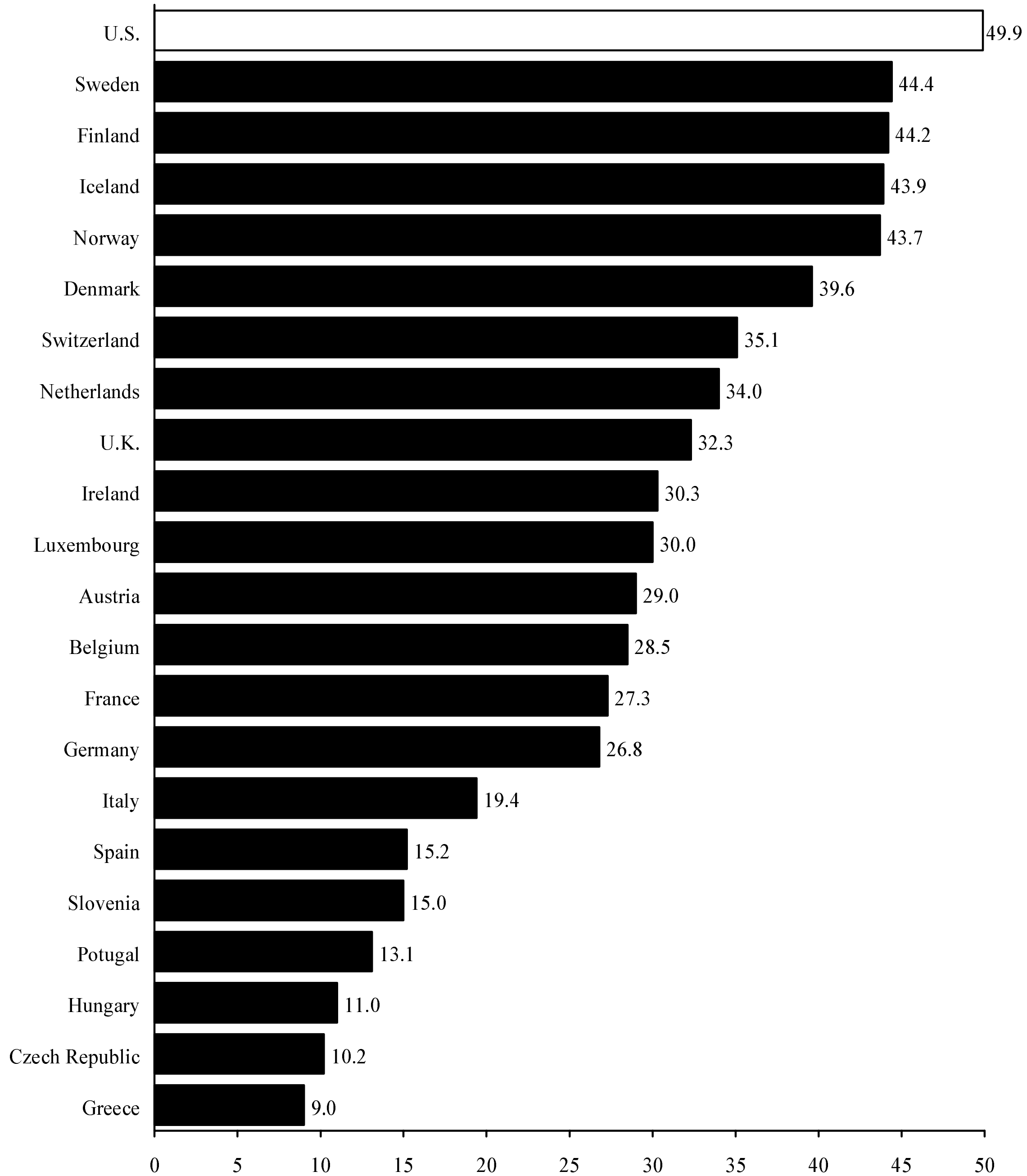
INTERNET HOSTS PER 1,000 POPULATION



Source: The Economist: World In Figures 2000.

Exhibit 22

COMPUTERS PER 100 PEOPLE



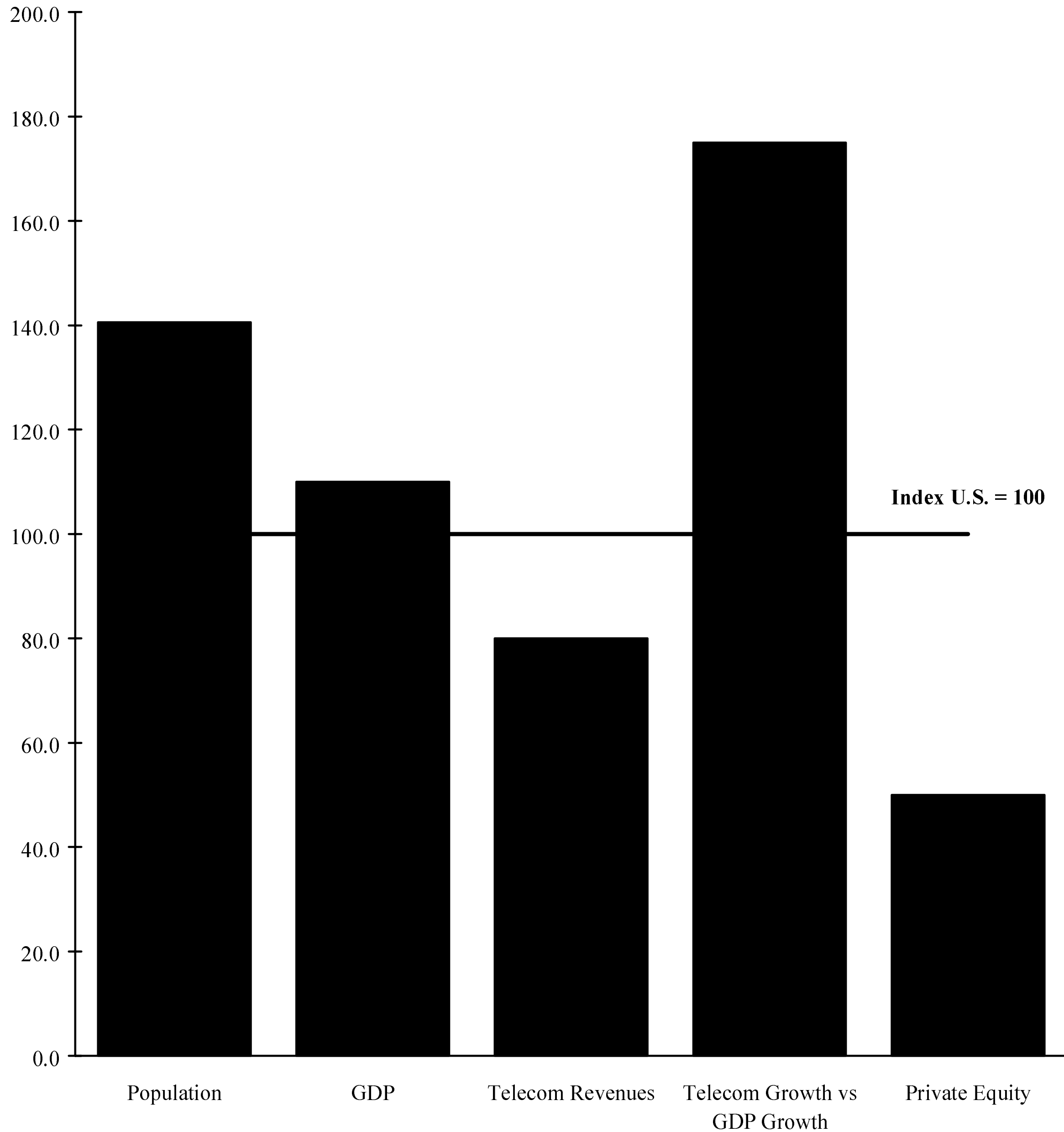
Source: The Economist: World In Figures 2000.

MARKET STATISTICS

Exhibit 23

MARKET STATISTICS: UNITED STATES COMPARED TO EUROPE

1997



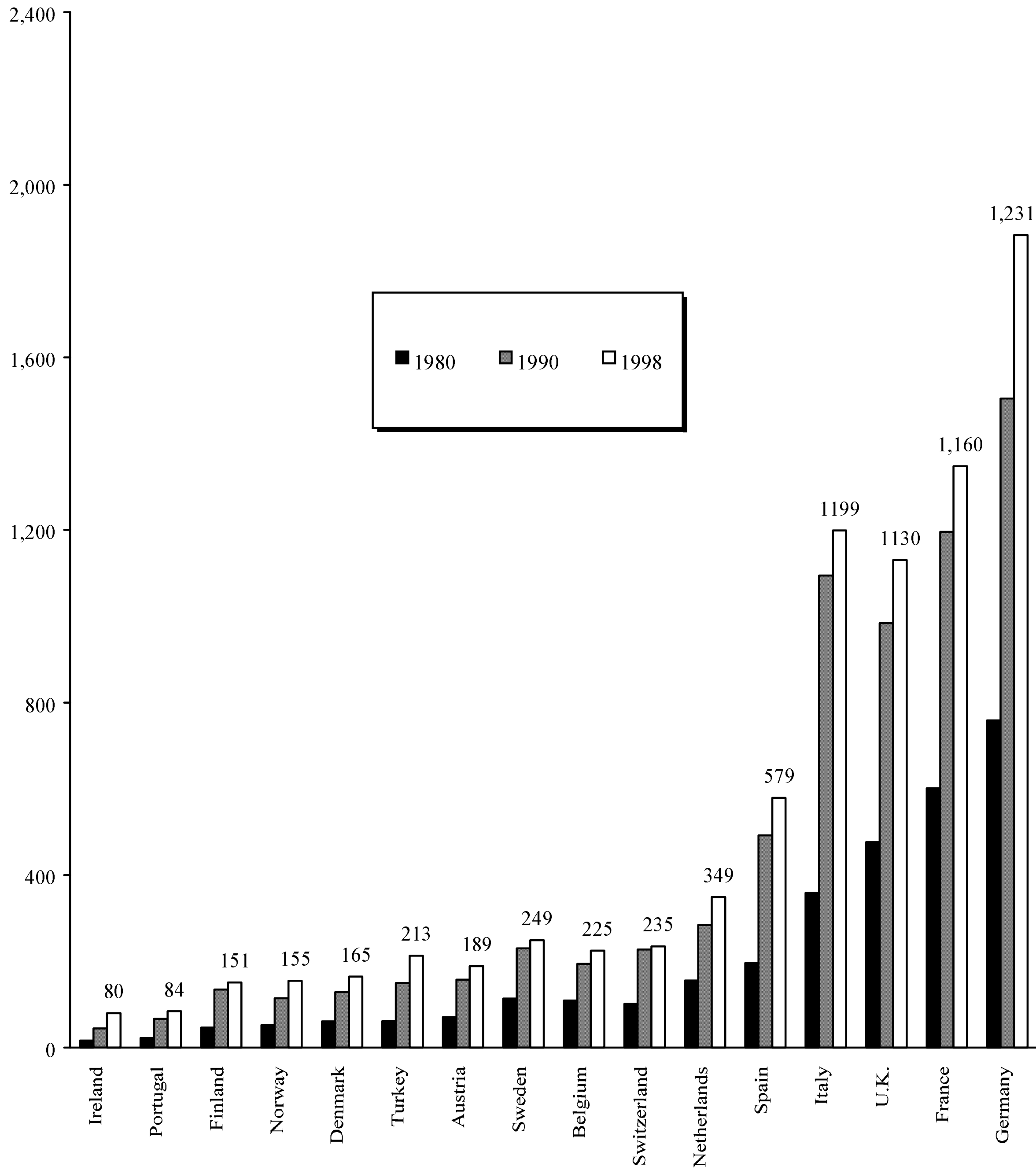
Sources: Economist Intelligence Unit, OECD, ITU, EVCA, and *The Private Equity Analyst*.

Note: Statistics include 15 European Union countries plus Norway and Switzerland.

Exhibit 24

EUROPEAN GDP AT MARKET EXCHANGE RATES

($ billions)



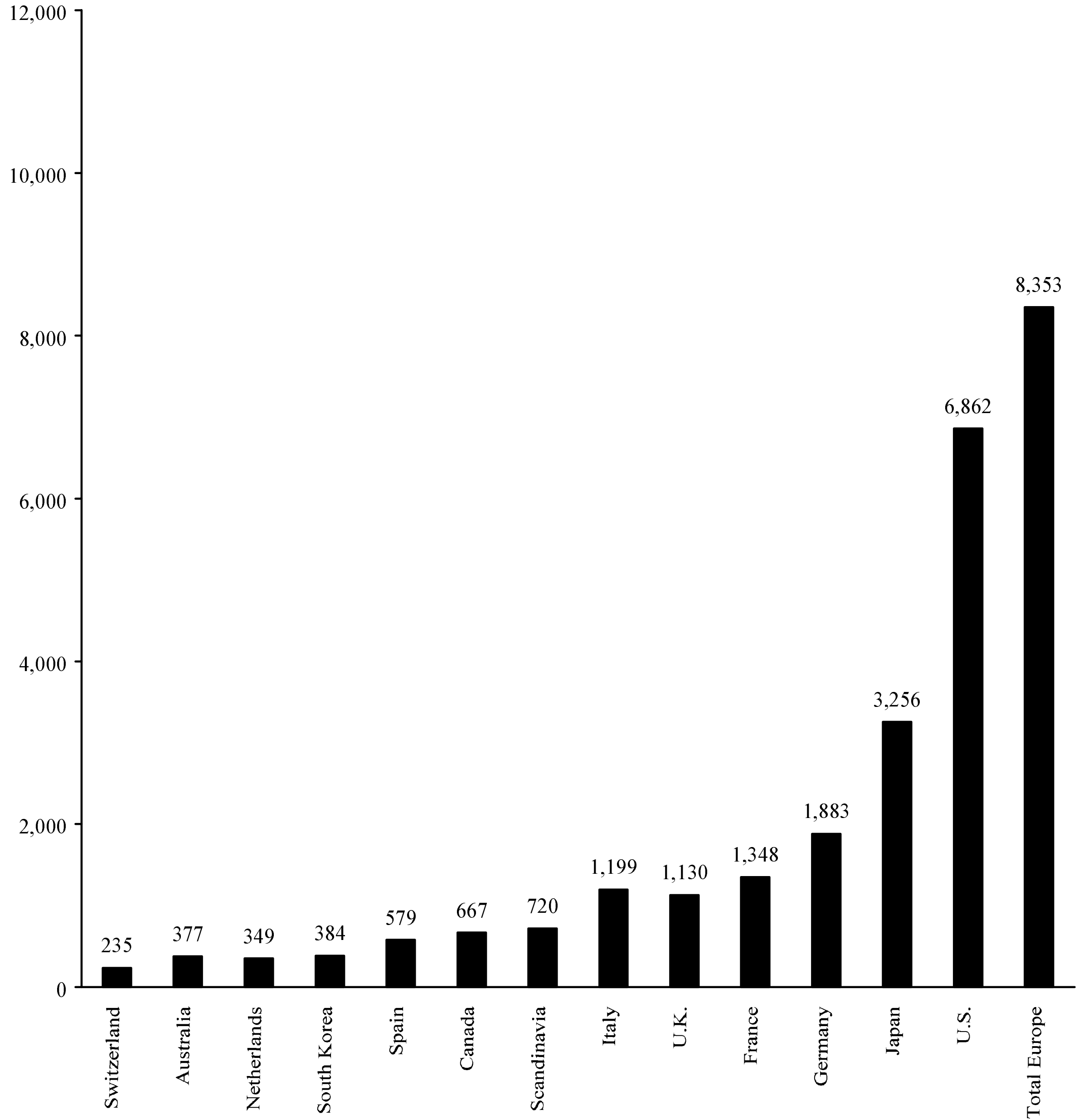
Source: *The Economist* Europe In Figures, 3rd Edition.

Exhibit 25

WORLD GDP AT MARKET EXCHANGE RATES

1998

($ billions)

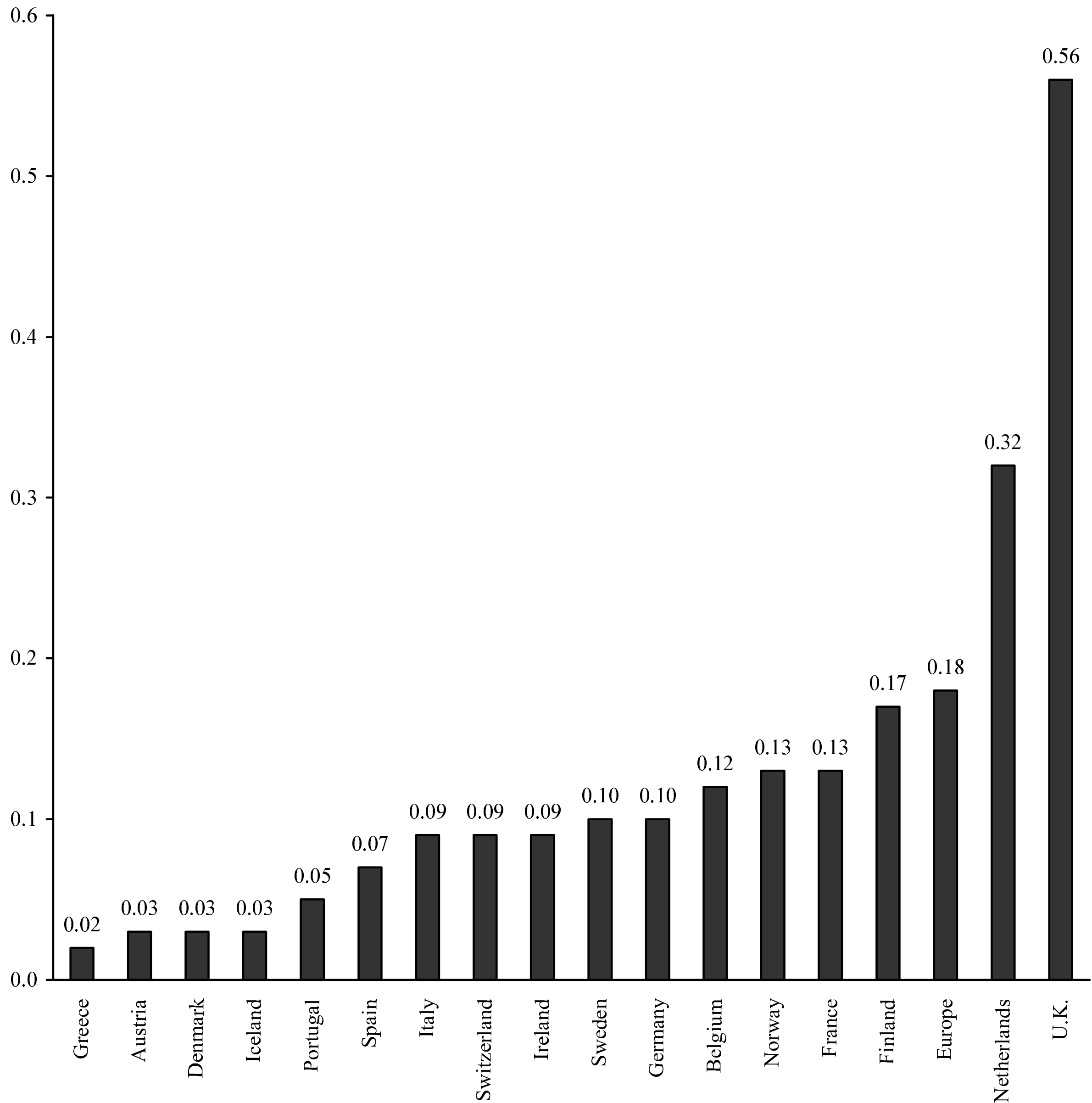


Source: OECD.

Exhibit 26

EUROPEAN PRIVATE EQUITY INVESTMENT AS A PERCENT OF GDP

1998



Source: European Venture Capital Association Yearbook.

APPENDIXES

APPENDIX A

EUROPEAN VENTURE CAPITAL: THEN AND NOW

Historically, European venture capital investing has not followed the U.S. model. Only a few managers have developed viable, durable businesses in the past two decades, mostly in the United Kingdom. There are numerous reasons why the industry failed to bloom-and for our optimism about its recent resurgence and future prospects.

Small versus Growth

Then. Government initiatives in Europe have historically focused on fostering small companies, as part of a political agenda to create jobs. This resulted in funding and grant assistance for legions of small businesses that often had limited life since they were in cyclical or declining industries and failed to attract quality management.

Now. The focus has shifted to the promotion of growth, whether small or not, since this is now recognised as the key to job creation.

Wealth Creation

Then. In contrast to the United States, where the emphasis on a meritocratic equality of opportunity presented no constraint on the accumulation of vast personal wealth, and the business of the nation is business, much of Europe had long pursued a more socialist egalitarianism, in which building a business was regarded as a vulgar ambition. Bill Gates would have been cast as a greedy capitalist pig, rather than as a role model and folk hero. In this culture, enterprising entrepreneurs tended to sell out early for modest sums rather than strive to conquer the world of commerce.

Now. Today, socialism receives only lip service in most circles, conspicuous wealth is more readily tolerated, and Richard Branson is widely admired. The proliferation of the management buyout, leading to numerous well-publicised stories of entrepreneurs achieving substantial real gains, has dazzled Europeans with new possibilities for wealth creation-although it may be premature to assert that successful wealth creation is celebrated as in the United States. In addition, wealth generates wealth-successful entrepreneurs have increasingly become ardent supporters of other growth businesses. As a result, angel and seed-corn financing is thriving across Europe.

APPENDIX A (continued)

EUROPEAN VENTURE CAPITAL: THEN AND NOW

Science versus Technology

Then. Venture capital investing had been equated with investing in pure science, which was seen as the province of boffins rather than of businessmen. This was another impediment to the attraction of quality management.

Now. Technology is now seen as practical, exciting, and relevant. Technology neurosis is turning into technology pull, with wealth creating opportunities attracting top-quality management talent.

Resistance to Change

Then. Europe in general, and the United Kingdom in particular, has been enormously resistant to change. In contrast (again) to the United States, where any product promising even marginal improvements in productivity, efficiency, or cost reduction would be snapped up immediately, whatever its country of origin, European companies tended to take a wait-and-see attitude, perhaps until the third generation of prototype. The absence of potential customers eager to embrace effective innovations discouraged entrepreneurs from launching new business ventures.

Now. As a younger generation, born after the traumas of World War II, has moved into positions of influence and authority, resistance to change has substantially evaporated. Large portions of the population are now receptive rather than hostile, and governments-traditional bastions of the status quo-are rapidly discovering that they have little option but to accede to significant shifts in the economic landscape of the new Europe they have brought into being through the Economic and Monetary Union (EMU). When EMU arrives in the high streets of Continental Europe on January 1, 2002, in the form of Euro notes and coins, the concrete reality of European economic integration will affect all citizens in their daily lives. The breaking down of barriers across Europe creates investment opportunities from integration, rationalisation, new business models, and the larger market for growth and exit of investments. Even the French government, while continuing to defend its unproductive farmers, finds it impossible to protect its industry and increasingly powerless to defend the "Frenchness" of its economy in the face of the tidal wave of pan-European mergers and acquisitions.

APPENDIX A (continued)

EUROPEAN VENTURE CAPITAL: THEN AND NOW

Declining and Limited Defence Budgets

Then. Among the key drivers of the U.S. venture capital industry were the defence, aeronautics, and space industries. All have been undernourished in Europe, where national defence budgets have been small, shrinking, and often spent largely on U.S. defence technology. This powerful stimulus to venture investing was therefore lacking in Europe.

Now. Just as the dismantling and reconstruction of the U.S. defence sector has created opportunities in both private equity and venture investing, so has the dismantling of public sector ownership in Europe stimulated both realignments of existing industries and the creation of new opportunities as privatised businesses are exposed to market forces.

Investment Managers

Then. Much of the fledgling European venture industry was staffed by people trained in private equity investing and by scientists, both of whom had inadequate or inappropriate skills and experience for new business development.

Now. The supply is improving but there remains a shortage. Experience and track records are improving by leaps and bounds and new competent managers are being recruited with relevant skills from industry, investment banking, and consultancy.

Cyclicality

Then. Europe and the United Kingdom in particular suffered from cyclical economies over long periods of time. This led to defensive and short-term investment. Promising new businesses stood little chance of surviving during a downturn, so few bothered to start one up.

Now. Europe has been experiencing a sustained period of economic stability, indeed growth. Investment horizons have lengthened. Confidence has returned and is building.

Appendix A (continued)

EUROPEAN VENTURE CAPITAL: THEN AND NOW

Supply of Seed-Corn Funding

Then. Given the economic conditions, cyclical environment, the lack of successful entrepreneurs, and poor investment performance, one can sympathise with private investors who invested elsewhere and led to a dearth of angels willing to finance start-ups.

Now. The problem has flipped dramatically from one of two few angels to one where angels are fighting for deals and being rationed. Wealthy entrepreneurs themselves have become ardent supporters of other growth businesses.

Legal and Fiscal Environment

Then. Funding of deals throughout Europe was constrained by fiscal and legal complexity. Capital gains tax was high. Share options were taxed aggressively.

Now. Punitive capital gains taxes are declining across Europe, but have further to go. Share option schemes are increasingly tax neutral. Other legal and administrative barriers are being removed particularly via specific action from the European Commission for Enterprise and Information Society, out of Brussels.

Poor Management

Then. Europe lacked skilled managers, and had been largely unable to attract them from the United States.

Now. In the 1990s this situation has improved dramatically. In newly liberalised markets, management expertise has advanced by leaps and bounds, with European business schools turning out floods of better educated graduates with more practical qualifications, many having some U.S. training and experience, with English as the European lingua franca.

APPENDIX A (continued)

EUROPEAN VENTURE CAPITAL: THEN AND NOW

Lack of Exit Opportunities

Then. Until recently, there was virtually no way to realise gains on venture investments by means of an initial public stock offering (IPO). Europe's most developed stock market, in London, had a singular disinterest in small businesses. This substantially limited the gains achievable by venture capital investment managers, who needed to realise huge gains on their few winners in order to offset the large, sometimes total, losses sustained by their failures.

Now. Across Europe the ease and ability to exit from investments has improved dramatically and is set to improve further. Although volatile-as should be expected-Continental European stock markets such as EASDAQ and the Neuer Markt have proved successful platforms for launching new public offerings, and their success has spurred the London Stock Exchange into forming its own version TechMARK. The forthcoming NASDAQ Europe will further change the rules of the game to the benefit of exits generally and will enhance liquidity.

Appendix B

THE INVESTMENT PROCESS

The traditional European model for venture investing, sometimes referred to as the U.K. model (although employed also by a few early and now largely moribund Continental managers) was characterised by:

- Lengthy and cautious due diligence in an effort to avoid downside risk. The poor returns of the industry show that these efforts were largely unsuccessful.
- Attempts to grow businesses solely in domestic markets before exporting to the United States. This slow-growth approach left fledgling companies extremely vulnerable to cyclical recessions, even when they had viable business plans.
- A misplaced focus on "good science" than on the potential for earning financial returns.
- A failure to plan at the time of investment how returns would ultimately be realised.

Today, however, the investment planning model is entirely different, corresponding more closelyto that of U.S. venture firms:

- Instead of extensive due diligence, which they claim takes too long in the current hyper environment, investment managers are increasingly relying on their 'gut feel', and are being encouraged to do so by investors. Of great value and importance in this gut feel assessment is the quality, range, and depth of advisory board members, who are no longer simply a sop to larger investors, but are typically highly qualified and well-connected industry leaders, former successful entrepreneurs, and academics. Many will themselves invest in deals, often in the fund, and may be actively involved with firms in which the fund has invested. The due diligence process will often involve detailed discussions with relevant members of the advisory board whose insight into the technology, market conditions, and exit opportunities weigh heavily in the decision making process.
- The rejection rate and rejection process has been radically modified and accelerated to free up time. Underperforming investments (lemons) are speedily repositioned, or more likely dropped rapidly, in a process entirely different from the traditional efforts to provide ongoing nurture. Resources are now heavily concentrated on putative winners.
- Some larger managers will back deals that they know are not the best in the sector, based on the belief that their resources and contacts can make the difference. There are specific examples of e-commerce deals in which the front runner in a market segment has had to join forces with the second or third player owing to the "brute force" resources applied against them with the support of larger or better connected firms. Thus, it is not necessarily the case that the best or most advanced deals will win in the market. First-mover advantage that is essential in some sectors of the market will not always work in other areas. There is a premium to be placed on the manager's contacts in selected sectors, and their resources.

Appendix B (continued)

THE INVESTMENT PROCESS

- Internet infrastructure investments must develop business in the U.S. market as soon as possible if they hope to have any future. Consequently, venture capitalists investing in this sector must have strong U.S. relationships.
- In e-commerce deals, by contrast, pan-European connections are more the key to successful business development.
- For first-round financing deals, deal flow is dependent principally on personal contacts, and a kindred spirit in younger and more entrepreneurial managers, than by group size. Entrepreneurs are attracted principally by shared vision and speed of reaction. Smaller managers often have an advantage here.
- Time-scales have shortened dramatically. Term sheets may now be issued in days or even, in selected cases, hours. Legal processes are completed in weeks at the most. This may be the norm in the United States but is very new in Europe and raises numerous related issues.
- Terms are relatively simple, designed specifically to motivate entrepreneurs and to accommodate anticipated subsequent rounds of funding.
- Key amongst the criteria considered in detail at the time of investment is the exit, and this forms a material element of discussion and agreement with the entrepreneurs.

European managers now fall into two camps: those that have adopted this new model, and those who have not, continuing to follow the traditional process with dogged determination. From the perspective of investors, the new model is clearly generating superior returns; however, it remains to be seen how this approach holds up during an economic contraction and equity bear market.

Syndication among like-minded managers of the new school is becoming more common, to the exclusion of traditionalists.

Appendix C

STAGE INVESTING

Venture capitalists have historically financed businesses in stages, with only rare instances of complete funding up front. The reasons for this are

- Capital rationing is felt to be a good discipline for entrepreneurs. The need to justify progress and future funding at specific milestones concentrates minds on all sides.
- Future funding requirements are often difficult to assess at the start of a new venture.
- Under BVCA and EVCA guidelines, funds can revise the valuation of investments at each stage, based on the new basis established by incoming investors.
- Different types of investors may be needed at each stage.

These different financing stages may be summarised as follows:

First Round **Early/Seed** **€0 to €5 million**	**Second Round** **Later Stage** **€5 million to €50 million**	**Third Round** **Pre-IPO** **€50 million +**
Conceptual stage, no revenue Relatively price insensitive Early and formative stage of business, sometimes completed within an incubator. Limited business plan Locally based	Starting to generate revenues Investment is price sensitive Building a management team Professional business plan May be looking across country borders	Aiming to generate earnings Highly price sensitive Full management team

At the earliest stage there may even be a prior round with only one or more angel investors involved.

Smaller and more nimble managers have the advantage in the first round since these are often "gut feel" or "vision" investments. Entrepreneurs frequently team up with managers who share their values and vision, which is often and more readily found among smaller than among larger managers.

A second round typically attracts more significant investors and those with European or U.S. networks will more likely have an advantage.

By the third round (which could increasingly be a stock market listing as an alternative) all sorts of additional investors seek to crowd in, making this a highly price sensitive area of the market.

Appendix C (continued)

STAGE INVESTING

Not all investments will follow this path. Increasingly there is so much pressure to invest from the larger players that some fledgling ventures are being encouraged to jump straight in at a high level. Time will tell whether this is wise. Also, as the European market develops, some new businesses may emerge that need and deserve substantial funding from the start-infrastructure investment is a clear example. Considering the size of many of the funds and pools announced recently, it seems clear that there will be a concentration at this top end, leading to further competition and higher prices. In due course this could lead to lower returns and increased vulnerability to a market correction.

Risk and returns are both greater at the earlier stages, but the quantum even at exit may be small. There is increasingly a concern that at the later stages the high prices being paid are out of line with any possible realisable valuations and hence that there may be disappointment in future. A mild downturn in market expectations would be painful there.

As the market has heated up and the amount of capital available for some deals, particularly in telecomms, exceeds €50 million, the buyout industry has started to take an interest, since their own field has become rather crowded in recent years. Thus we have seen the launch of sizeable European Internet funds, notably TH Lee/Putnam and Carlyle, to add to the pools of Warburg Pincus, GE Capital, and others. Moreover, at least two of the established European LBO managers are seeking to recruit with a view to launching technology investing initiatives. In addition, the general temperature is raised by every European LBO and MBO operator looking closely at their existing portfolios, and all new investments, in a search for the Internet angle.