

ELÍN GUÐJÓNSDÓTTIR<sup>1</sup>

## The Icelandic equity market

*An equity market is an important component of an advanced capital market. Iceland has succeeded in creating fairly developed financial markets and also an active equity market within a relatively short time. Despite the fact that this occurred much later than in neighbouring countries, Iceland Stock Exchange is now poised to begin cooperation with stock exchanges in other countries. This article surveys the development of the Icelandic equity market in the recent term and also looks back at the history of Icelandic share trading and the explanations for the absence of an active market before then. This summer, the Iceland Securities Depository began electronic registration of shares and the Icelandic Stock Exchange became a formal member of NOREX. The equity market may be expected to have reached a certain turning point in its development on account of the new trading practices and environment ushered in by these changes.*

The equity market is both a prominent and an important part of capital market in many countries. From the viewpoint of economic theory the equity market has been the scene of considerable growth in recent years as well. New hypotheses and models have been presented addressing the laws of price formation in equity markets and other asset markets, and their role in the economy. One reason has been efforts to understand financial crises and reduce the damage they cause; equity markets have played a role in some of the financial crises which have struck individual countries and regions in the past century. This article will not deal with these issues, but focus specifically on Iceland's equity market, which has developed rapidly in recent years. Table 1 on page 24 shows the main market statistics from 1993 and chart 1 on page 24 shows the pace of growth in listed companies and market value of shares. However, limited companies and share trading has a much longer history in Iceland, which is worth summarizing here.

### *The history of Icelandic share trading - short but yet long*

For an equity market to be able to form, there need to be public limited companies and incentives for trading in their shares. Some 250 years have passed since the first limited company was established in Iceland. At the beginning of the 20th century a public limited company which operated in Iceland was listed on an overseas stock exchange. Shortly afterwards the Iceland Steamship Company (Eimskip) was established, with an excellent operational base, plenty of share capital and a large number of shareholders. Legislation from 1921 on limited liability companies was sufficiently liberal so as not to hinder the development of open limited companies. In 1934 a company was established in Reykjavík which specialized in stockbroking and there was brisk trading in Eimskip shares during the following years. From 1942 to 1944, Landsbanki operated a stock market largely modelled on the Copenhagen Stock Exchange. In the 1960s there was some discussion about the economic desirability of establishing public limited companies and share trading. The Central Bank of Iceland was legally authorized in 1961 to establish a stock market. A number of limited companies were established in the 1960s with many

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1. The author is an economist at the Economics Department of the Central Bank of Iceland. This article is partly based on her cand.oecon thesis at the University of Iceland in June 1999. It uses statistical data available on June 30, 2000.

shareholders and spread ownership. The Iceland Investment Corporation set up a securities trading centre in 1978, among other things to introduce securities trading. It did contribute to the development of a visible secondary market for bonds, although not for equities. At this juncture, six years would still remain until legislation would be introduced granting tax concessions on business investments, which are still in effect.

#### *Equity supply was lacking*

All the above shows that for most of the century, attempts to establish an equity market produced scant results. There were political, cultural as well as economic reasons for this. The following list does not consider possible restraints on the demand side, but merely points out several factors that impeded the supply of shares in Iceland.

- For most of the time companies were both few in number and small in size, on account of Iceland's small economy and short industrial history.
- The majority of companies were set up as family firms or partnerships with few shareholders, little share capital and restrictions on the conveyance of shares. In cases when such firms go public, a lengthy process is often involved.
- Until the 1980s, restrictions on the conveyance of shares were included in the articles of association of most large limited companies. Such companies were like closed boxes, and neither their performance nor their owners were in the public spotlight.
- The industrial policy which was in effect for the greater part of the 20th century did not support formation of open limited companies. In many respects the economic environment was unfavourable towards business operations and company profitability was low.
- Most large companies which were established during the first 70-80 years of the century were under public-sector or foreign ownership, or were cooperatives. In general the national mentality at this time did not appear favourably disposed towards large companies under Icelandic private ownership.
- Real interest rates were low, the tax system encouraged debtors but was unfavourable for

#### Evolution of the Icelandic equity market 1984-2000

1984	Law on tax concessions for business investments. Privatisation begins.
1985	A stock trading platform (Hlutabréfamarkaðurinn hf.) launched. Iceland Stock Exchange (ISE) established.
1986	Law on stockbroking activities. First equities fund begins operation.
1988	Rules on listing of shares at ISE.
1989	Law on securities trading and mutual funds (including provisions for public offerings of securities).
1990	First company listed on ISE.
1991	First share trading on ISE.
1992	ISE launches drive to increase the number of listed companies. OTC market begins operation.
1993	Law on ISE.
1997	Introduction of capital income tax. ISE growth list and main list introduced. Equities become the largest category of securities on ISE.
1998	Laws on activities of stock exchanges and organized bid markets. Incorporation of state banks into limited liability companies and start of their privatisation. ICEX-15 index begins.
1999	ISE incorporated as a limited liability company.
2000	Electronic securities registration begins. ISE becomes member of NOREX. First foreign company listed on ISE. Rules set on naming parties to insider trading.

shareholders and equity issues. Credit to companies and industrial sectors was controlled.

- There was no organized securities market.
- Privatisation began late and restrictions applied to foreign investment in Icelandic industry.

Shares in Icelandic limited companies were by and large regarded as "some kind of receipt for an irretrievable contribution towards business operation" and equity trading in the primary and second-

ary, market was negligible and scarcely visible right up until 1984.<sup>2</sup> Around that time, rising interest rates increased companies' needs for a strong equity position, in addition to which equity markets were on the advance in neighbouring countries. So it was only natural to expect some attempt to organize equity trading in Iceland. However, it took many years for the government, investors and company management to join forces to build up an active equity market (see box on page 22). For example, after the milestone year of 1984, it took eight years for the market value of listed shares to reach 1% of GDP.

#### *The part played by government authorities*

The introduction of tax concessions on account of private investment in business operations under Act no. 9/1984 was an important incentive for Icelandic limited companies to open up; the twin aim of this law was to increase investment in Icelandic companies and strengthen the equity market. The list issued in that first year by the Inland Revenue (RSK), showing companies whose shares qualified buyers for a tax concession, had 17 entries. Gradually the limited companies opened up and in 1991, the same year that the first two companies were listed on Iceland Stock Exchange (ISE), the RSK list included 77 companies. At the end of 1999 their number had risen to 174. Various other legislation has also supported development of securities trading in Iceland over the past decade. More recently, the interaction between the equity market and privatisation projects has proved important for the equity market and generated great interest in market participation among individuals.

#### *Transformed financial environment*

A major transformation has taken place away from the restrictive conditions outlined above. The advancement of the financial system plays a large part in this. Iceland's financial market now operates on the same basic principles as those of other countries and hardly lags behind in those respects, although its small size and the restraints this impos-

2. Quoted from Hlutabréfamarkadurinn á Íslandi (1991), "Framthróun og framtíð íslensks hlutabréfamarkadar" (The Icelandic Equity Market: the advancement and future of the Icelandic equity market), published by VIB hf.

#### Equity markets in a global competitive environment and NOREX

The majority of Western European stock exchanges are now engaged in cooperation among themselves and many are currently examining the opportunity of strengthening their competitive positions still further. Major changes have therefore occurred in the scope and environment of stock exchanges over a very short period of time.

NOREX is a cooperative framework for Nordic stock exchanges to operate a joint securities market. It involves use of a collective trading system, SAXESS, and harmonized rules on market participation and trading practices. Formal cooperation within NOREX started up at the beginning of 1998 with participation by the Stockholm and Copenhagen exchanges. From the outset their vision was that NOREX would become a dynamic Nordic market capable of competing with others and attracting international investors. Rapid progress has been made towards that aim. ISE has now signed a cooperation agreement, the Oslo exchange is preparing formal participation and it is assumed that the three Baltic States, which have signed a declaration of intent to participate, will join after the middle of 2001.

es on market efficiency are difficult obstacles to overcome. This development came late in Iceland compared to other countries, but it was a rapid one, driven by factors including changes in attitude, globalisation, new technology and legislation from the European Economic Area. ISE has been purposefully and systematically working towards establishing the necessary pillars for the equity market in recent years. The most crucial elements were completed quite some time ago, and further development of the market is now largely aimed at strengthening its competitiveness with respect to foreign markets.

#### *ISE becomes more internationally competitive*

During the last operating year, the ISE made a priority of examining possible linkage with stock exchanges in other countries, and in March this year it was decided to embark on cooperation with NOREX. The proposed NOREX cooperation involves solutions to two major issues for ISE - the need to select an upgrade to its present trading sys-

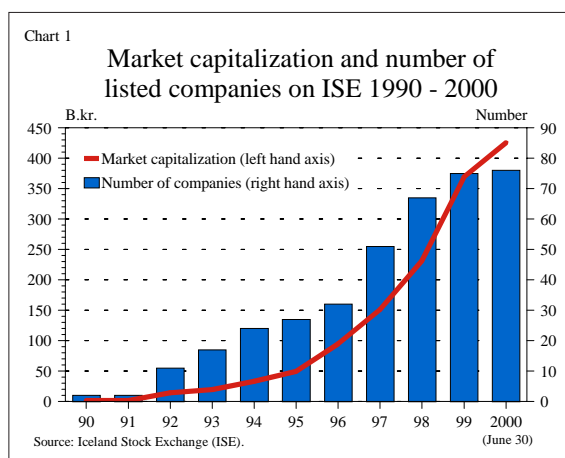
Table I Overview of the Icelandic equity market 1993-2000

	1993	1995	1997	Jan.-June	
				1999	2000
<i>All amounts are in b.kr.</i>					
Equity public offerings <sup>1</sup> .....	0.9	2.9	17.0	25.0	8.7
Turnover on ISE .....	1.0	2.9	13.3	40.1	37.0
Turnover in ISE members' off-exchange trading .....	1.6	3.8	10.2	79.8	77.2
Market capitalization					
on ISE, total .....	19.6	49.7	151.0	369.8	425.5
thereof ISE Main List .....	19.6	49.7	149.9	349.5	404.8
thereof ISE Growth List ..	.	.	1.1	20.4	20.7
Number of listed companies on ISE, total .....					
thereof ISE Main List .....	.	.	48	51	55
thereof ISE Growth List ..	.	.	3	24	21
Change in the ICEX-15 price index over year (%) <sup>2</sup> ..	-12.0	34.1	14.7	47.4	-4.8
Change in the Main List price index over year (%) <sup>2</sup> ..	-14.6	33.2	12.4	44.5	1.5
Change in the Main List price index over year (%) <sup>2</sup> ..	.	.	.	14.6	24.3
P/E ratio at end of period (equity funds excl.) .....	.	.	.	21.7	25.6
Market capitalization at end of period as % of GDP <sup>3</sup> .....	4.4	10.0	25.2	53.4	57.9
Turnover ratio (%) <sup>4</sup> .....	5.6	6.9	10.8	13.3	18.1

1. Market value of equity issues offered by Icelandic companies in all offerings which have the status of a public offering according to Act 13/1996. 2. The ICEX-15 selected shares index, the Main List index and the Growth List index were introduced in March 1998 but calculated retrospectively to December 31, 1992. 3. Equity funds excluded. GDP is at year-end prices. 4. Turnover in latest 12 months as % of market capitalization and period end. Source: Iceland Stock Exchange (ISE).

tem, and to break its isolation from the rest of the world. ISE will become a part-owner in the NOREX trading system, SAXESS, and link up to it. Linkage, which is scheduled for October 2000, will usher in more dynamic trading practises and open a new gateway between Iceland and abroad. ISE became a formal member of NOREX on June 15.

In the past few years Icelandic investors, professional and private alike, have been making growing investments overseas. To offset this, reciprocity would be desirable, i.e. for foreign investors to enter Iceland. If the financial market architecture such as laws, regulations and ethics lag behind those overseas, this could prove to be an obstacle for foreign



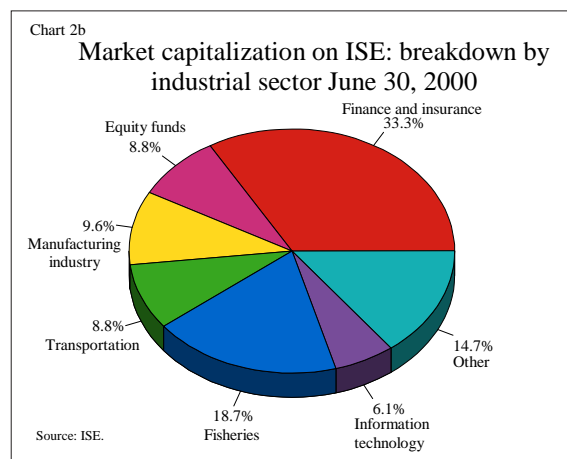
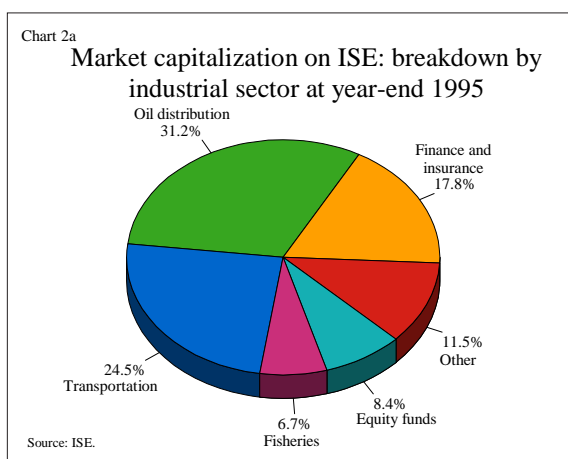
investors to enter the Icelandic market. ISE is currently working on reforms to various of its rules with the aim of enhancing working procedures and effectiveness and reducing inconsistencies with stock exchanges overseas, partly prompted by its membership of NOREX. This summer ISE and other parties are also engaged in a collaborative project on the future development of the securities market with the aim of promoting its credibility and competitiveness and thereby equipping it as well as possible to serve its function in the economy. Among the issues under consideration are a more detailed distinction between open and closed offerings, the definition and limitation of the market in unlisted shares and rules on insider trading and increased dissemination of information, including quarterly financial statements.<sup>3</sup>

Another major step in the market's technical development was taken this summer when the first electronic shares were issued in Iceland. The shares in question were in the prosthetics company Össur and they became available for trading on June 14. Electronic transactions will make trading in equities and other securities both more secure and easier, not least for foreign investors. Electronic trading will therefore improve access for foreign capital to the Icelandic equity market. The Icelandic Securities Depository estimates that it will take 18 months until all shares on ISE will be electronically registered.

3. In an interview with Morgunbladid newspaper on May 18, Dr. Daniel Levin points out the disadvantages of trading in unlisted shares outside an organized market and the need to set rules for the "grey market", as many countries have done with a view to protecting investors and establishing equitability among them.

### Mergers and new listings

Some 76 companies were listed on ISE on June 30, one more than at the beginning of the year. An exceptionally large number of companies have been withdrawn from the list during the year, four of them because of mergers by listed companies and two for other reasons. Seven new companies have been listed, including what is currently the fourth largest on the exchange.



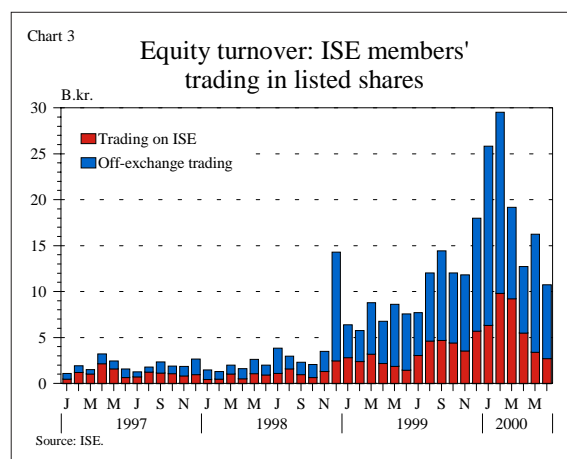
Sectoral weightings at ISE have changed significantly with the large increase in listings in recent years. For several years by far the largest sector in terms of market value was fisheries, with up to 40%. This has changed over the period 1998-2000 and the fisheries sector now accounts for 19%. It is presently the second largest sector on the exchange, after the financial and insurance sector. Chart 2 shows the sectoral division at the end of 1995 and again in June 2000.

### Large increase in secondary market turnover

Both supply of and demand for shares in Icelandic limited companies has been increasing sharply in recent years. Trading of shares in listed companies increased gradually from 1992-1998, but turnover mushroomed in 1999. Off-market trading by market participants has been running high, as chart 3 shows, accounting for a fairly steady two-thirds of total trading in recent years. Despite much lower trading volume in April-June 2000 than in the preceding months, it was still very heavy in a historical context. There is nothing strange about turnover increasing in

a young market like the Icelandic one, where elements which have an impact on market efficiency are still taking shape. The market now shows a faster responsiveness to information, and capital moves more easily between shares than before. More participants operate in the market and private individuals are taking a greater direct part. The quality of information, which is the root cause of market move-

ments, has been improving as well. Since 1998 companies have been providing more frequent and specific information, media give more focus to company news and a large number of market participants undertake data processing and analysis. The number of finance companies which meet the requirements for ISE membership and are authorized to use its





trading system, for example, increased from 20 at end-1998 to 25 in June 2000.

Heavier trading has produced a much faster turnover rate in shares on ISE than in the period before 1999. Turnover rate, as a proportion of market value, was around 18% in June 2000, somewhat less than the record figure achieved in May (see Table 1). Shares in the largest companies, however, turn over much more quickly. Turnover rate is still very low compared with other countries, for example in Scandinavia where it was in the range 50%-100% in April.

There may be various explanations for the turnover rate in Iceland still being relatively low despite the developments over the past 19 months. These include high trading costs, partly because of the shallowness of the market, the high proportion of off-market trading, strategic investments in certain companies, the low degree of speculation, rareness of equity-linked derivatives, lack of foreign portfolio investment, and the lack of further privatisation which is shown by the fact that there is no turnover in the majority of shares in two of the largest companies on ISE because these are owned by the Icelandic state. In many companies a large amount of the share

capital is owned by a few related parties who regard it as a strategic investment and do not shift their assets even when major changes occur in the company's position and the price of its shares. Equity ownership by private individuals in recent years has largely comprised shares in equity funds on the one hand, and on the other hand in companies whose shareholders remain loyal through thick and thin, although this attitude has been changing.

#### Sharper price fluctuations

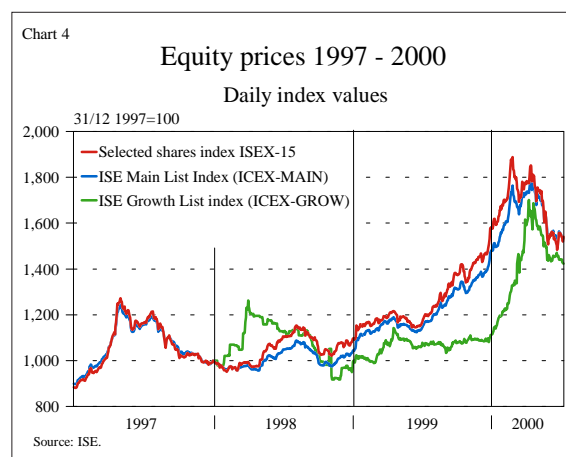
In 1999 share prices on the ISE main list rose by 45%, which is by far the largest increase in a single year with the exception of 1996. Indices for all sectors rose during the year, with the fisheries and retail and service sectors growing least but others in the range of 30-74%. The main reasons for last year's rises are economic growth, favourable economic conditions and good business profitability, general optimism and factors associated with the shareholder culture which has evolved in Iceland. Heavy credit supply may have increased demand, since some investors have borrowed to fund their equity purchases. Investor demand for equities has been universal and capital has been switched to them from bonds. In fact this trend began before last autumn and is in line to the pattern abroad.

The financial and insurance sector made the largest contribution to the rise in the ICEX-MAIN and ICEX-15 indices last year. The bulk of companies in this sector were only recently privatised in offerings where one of the criteria underlying price

Table 2 Nordic equity markets in 2000

	<i>Iceland</i>	<i>Denmark</i>	<i>Finland</i>	<i>Norway</i>	<i>Sweden</i>
<i>April 30, 2000:</i>					
Number of listed companies.....	75	232	148	194	273
thereof foreign comp..	0	9	4	20	21
Market capitalization in b. euros.....	6.3	125.1	72.3	71.1	527.1
Market capitalization as % of GDP .....	61.3	73.9	56.5	45.2	210.3
Turnover ratio (%) .....	16.7	52.9	55.3	100.6	100.1
<i>June 30, 2000:</i>					
Price change from beginning of year (%).....	-4.8	12.5	4.3	1.0	9.7
Price change in last 12 months (%).....	33.1	40.0	98.9	18.8	58.6
P/E ratio.....	25.4	26.6	69.3	20.8	31.0
Average annual price change 1995-1999 (%) .	31.7	21.7	51.2	15.7	33.3

Sources: Datastream, Nordic Securities Markets, Iceland Stock Exchange.



### Shareholder culture in Iceland

Shareholder culture is a term especially seen in connection with privatisation schemes in various countries, which are sometimes in part launched in order to nurture it. It covers the ramifications of active public participation in an equity market, such as increased public interest in and awareness of business mechanisms and understanding of the need for capital to generate a return. There is a positive relation between the maturity of an equity market and the degree of shareholder culture, and recently shareholder culture has been growing in Iceland. This is shown by the tens of thousands of participants in certain share offerings, widespread general share ownership, the prominence of the equity market in media and public discussion, and the large number of people who monitor and take part in the market, many of them via the Internet. Tax returns show that 52,700 households owned equities at the end of 1999, an increase of 17,500 in the space of only four years.

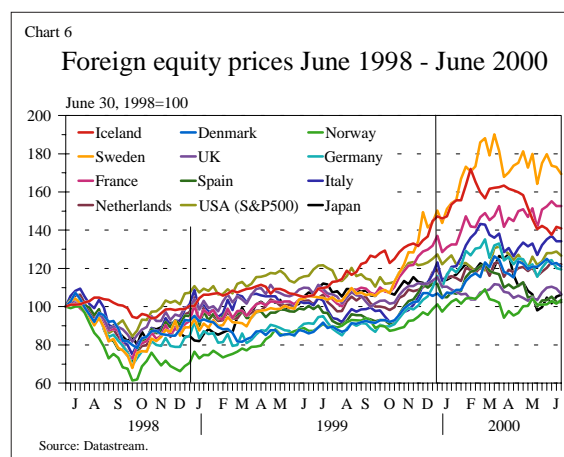
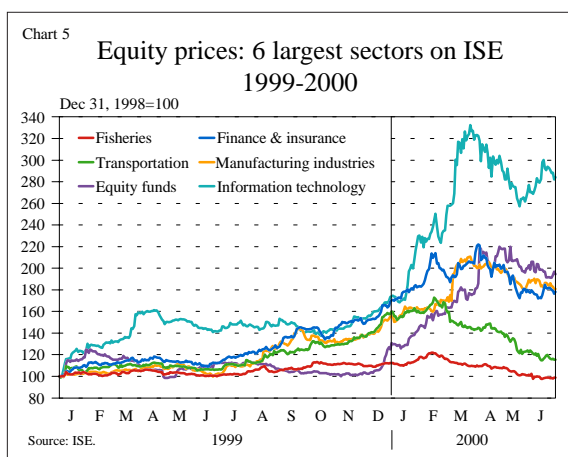
formation was to achieve a wide spread of ownership, which may partly explain the large increase in market prices. The IT sector rose most of all, reflecting high expectations about its growth as well as the fact that on the whole it showed excellent profitability.

Over the eight-month period up to February 2000, the ICEX-15 index rose by 65%. The growth list rose by the same amount over this period but the main list by slightly less, or 60%. After February 17

prices finally dropped considerably. The decline from the highest point to the lowest within the year is now at record 22%, or about as large as the previously largest drop which occurred during the last 7 months of 1997. Both the ICEX-15 index and the Main List index have now slipped below their position at the beginning of the year, while the growth list boasts a 30% appreciation from the same time, which is in fact almost entirely explained by a rise in Icelandic Software Fund prices. It should be borne in mind that in many cases only small trades underlie the drop in share prices. The reduction across the market can mainly be explained by changes in financial market conditions and economic prospects. It is not unlikely that a process of correction is taking place too, particularly bearing in mind the way Iceland has been keeping pace with trends overseas. Large supply of shares in the primary market recently may also have had an impact on secondary market price formation.

### Stronger links with foreign market price changes

Perhaps the most interesting aspect of price developments of late is that they do not appear to be independent of share index price trends in other countries, reinforcing the view that capital is now flowing more freely between the Icelandic equity market and others. Greater investor activity in this respect has the effect of establishing better equilibrium between prices in different markets. If investors view Icelandic shares and foreign ones to some extent as a homogenous product and face no major differences



in access, such an effect ought to be at work. Chart 6 shows the development of 12 equity market indices, including Iceland's ICEX-15, over the past two years. Broadly speaking the direction of the trend is not dissimilar. The Icelandic index, along with the Swedish one, took the lead in autumn 1999 but has moved closer to the others again. Only the Finnish market is omitted from the indices shown here for Scandinavian countries, and the American Nasdaq index is also omitted, both having risen by much more over the period in question.

#### *The Icelandic equity market in an international comparison*

The market value of shares on ISE grew by 140 b.kr. in 1999 to reach 370 b.kr. at the end of the year. By the middle of 2000 it had risen to 425 b.kr. Average value of companies on the main list has also grown significantly even though the index is at virtually the same position as at the beginning of the year. Nonetheless, the Icelandic equity market is a very small one in international terms. An international comparison is presented in Table 3 using figures which are largely based on the Emerging Stock Market Fact Book 2000. This presents a detailed survey of organized equity markets in 81 emerging market countries, and for the sake of comparison it includes key figures from the 30 equity markets in the world which are classified as developed.<sup>4</sup> The Icelandic market is ranked with the developed ones and on the basis of market capitalization at the end of last year it was the second smallest in that group. It is however larger than some of the emerging markets, for example marginally larger than Oman and Trinidad & Tobago, but only around half the size of the Czech Republic and one-third of Peru. In terms of market capitalization as a proportion of GDP, Iceland is no longer distinguished from other developed markets by its small size. Turnover rate is markedly lowest in four developed countries: Luxembourg,

Table 3 Equity markets in selected countries 1999

	<i>Number of listed companies</i>	<i>Market capitalization (b.US\$)</i>	<i>Market cap., % of GDP<sup>1</sup></i>	<i>Turn-over ratio (%)</i>	<i>Price change over year (%)</i>
<i>Developed markets</i>					
Austria .....	97	33	15.8	37.9	-4.2
Australia.....	1,217	428	106.1	28.0	19.5
US .....	7,651	16,635	181.0	123.5	19.5
Belgium .....	172	185	74.9	27.5	-14.3
UK .....	1,945	2,933	206.1	51.9	14.1
Denmark .....	233	105	60.7	60.0	9.6
Finland .....	147	349	271.5	44.3	136.0
France .....	968	1,475	102.9	62.4	36.2
Netherlands.....	344	695	176.1	145.1	12.5
Ireland.....	84	42	46.8	90.9	-14.3
Iceland .....	75	5	54.1	13.3	47.4
Italy.....	241	728	62.7	82.7	9.9
Japan .....	2,470	4,547	103.8	52.5	50.7
Canada .....	3,767	801	128.4	54.2	32.6
Cyprus.....	60	8.1	89.4	39.2	132.8
Luxembourg.....	51	36	192.2	2.9	24.2
Norway .....	195	64	42.1	90.2	28.2
New Zealand.....	114	28	52.0	45.0	5.5
Portugal.....	125	66	60.1	63.0	-5.7
Spain .....	718	432	73.1	178.5	-0.8
Switzerland.....	239	693	269.3	78.0	-4.3
Sweden.....	277	373	156.1	73.1	54.9
Germany .....	933	1,432	67.8	107.5	23.9
<i>Emerging markets</i>					
Chile.....	285	68	101.1	11.4	35.4
Estonia .....	25	2	34.5	24.7	42.3
China.....	950	331	32.0	134.2	38.2
Latvia.....	70	0	5.8	11.7	-9.5
Lithuania.....	54	1	10.1	26.2	9.5
Malta .....	7	333	9.5	10.0	177.6
Poland .....	221	30	23.9	44.6	22.3
Russia.....	207	72	39.7	6.1	242.6

1. GDP figures for 1999 are in some cases estimated.

Sources: *Emerging Stock Markets Factbook 2000* (publ. Standard&Poors), Iceland Stock Exchange.

Bermuda, Qatar and Iceland. However, this varies greatly and exceeded 300% in three emerging markets last year. Countries with a similar turnover rate to Iceland were the Ukraine, Sri Lanka, Iran, Oman and Argentina. Among the developed markets, the figure for listed companies per capita of population is by far the highest in Iceland.

4. An equity market is included in the developed group if it fulfils two conditions. National income per capita must be high enough for three consecutive years to meet the World Bank's definition of a high-income country, which in 1997 was USD 9,656. Furthermore, the country must have a high equity market capitalization - excluding the part of the market which for any reason is not open to foreign investors - as a proportion of GDP, or near the average of developed markets for three consecutive years.



## The P/E ratio

The price/earnings ratio (P/E) has long been one of the most popular measures of equity value. It states the ratio of the market price of a company to its earnings, i.e. current value as a multiple of earnings. P/E is used to compare prices of companies, sectors or markets at the same point in time, or assess price developments over a period of time. P/E is calculated either on the basis of earnings over a period in the past or forecast earnings in the future. Independent analysts and information services generally present P/E based on the most recent figures for past earnings. Many companies, however, experience profit fluctuations or are undergoing growth with the prospect of major changes in profit but also great uncertainties. Investors therefore project future earnings on what they consider to be realistic assumptions, which means that P/E is considered to have a fairly unreliable basis. Its usefulness lies above all in enabling comparisons between companies which are considered to have similar potential for generating future profits, e.g. those in the same sector with similar external environments. An exceptionally high or low P/E may conceivably be interpreted as showing that the price is based on unrealistic future growth expectations, thus indicating that it is either overpriced or in a “clearance sale,” although such an interpretation is not the only possible one. However, historical figures for the USA suggest that a high P/E is a statistically significant precursor of low returns over the following 10 years and vice versa.<sup>1</sup> P/E in developed equity markets was generally in the range 20-30 in 1999, but Japan was in a class of its own with 68. These are very high figures relative to the average over the past 20 years.

P/E is often presented as a function of only two variables, required rate of return and expected earnings growth. This can be derived from the traditional presentation of equilibrium in the equity market as the market price of a share being equal to its fundamental value. Fundamental value is the current value of future income flow from the share, i.e. cumulative future dividend payments over and above the yield required from it. This produces a simple equation for P/E if it is also assumed that expected earnings growth and risk premium remain unchanged for the lifetime of the investment. At any given time,

$$P/E = d(1+g) / (r - g) \quad (\text{the Gordon equation})$$

where  $d$  is the ratio of earnings paid out as a dividend,  $g$

is expected annual earnings growth and  $r$  is the required yield from shares. Yield may be divided into the “yield floor” (the yield on Treasury paper, which carries the least conceivable risk) and the risk premium on shares. Investors are not assumed to expect  $d$  to change, and in fact this ratio is fixed at many companies. Accordingly, the smaller the difference between  $r$  and  $g$ , the higher the P/E. Also, P/E can become infinitely high if the difference between  $r$  and  $g$  is negligible;  $r$  needs to be higher than  $g$  for the equation to be valid. The sensitivity of P/E to changes in required yield increases in inverse proportion to this difference. Both required yield and expectations of company growth are themselves dependent on numerous factors in the capital market and the economy in general, as well as institutional factors. Changes in these factors, many of which are gradual in character, can explain a difference in average P/E between periods and also between countries. Different accounting practices also reduce the comparability of P/E by period or country.

### *Risk premium on shares*

If the risk premium on shares and investors' expectations about earnings growth were known, the Gordon equation could determine whether the price of a share were too high. Neither of these factors is measurable, however, and they are difficult to evaluate. Attempts are often made, however, partly because of the firm theoretical footing of the Gordon equation. Various statistical methods have thus been used to evaluate both risk premium and investor expectations. On this basis, the risk premium is generally considered to be close to 6%. Long-term profit growth may be estimated from the expected development of capital employed in operations and the return on it. Risk premium on shares depends on both the business operating environment and prevailing notions of risk at any given place and time. Among the factors thought to influence a market's risk deterrent level are investor age distribution, the capital market's supply of instruments for spreading investors' risks, the weighting of institutional investors and the prior development of share prices (with greater risk deterrent following a price crash and vice versa).

### *Sources:*

IMF *World Economic Outlook*, “Asset prices and the business cycle”, May 2000.  
Brealey, R. and A. Vila (1998), “Equity Prices and Financial Stability”, *Financial Stability Review*, vol. 5, The Bank of England.  
Robert Shiller (2000), *Irrational Exuberance*, Princeton University Press.

1. E.g. Robert Shiller (2000), *Irrational Exuberance*, p. 11..

### *Equity public offerings in 1999-2000*

In 1999, equity to the amount 25 b.kr. was offered in public offerings in Iceland, an increase of 11 b.kr. from the previous year (see Table 1). During the first six months of 2000, the corresponding figure was 8.7 b.kr. in seven offerings. Three of these preceded listing on ISE. These figures do not tell the whole story about primary market supply, since this year domestic capital market participants have also made major closed equity offerings. The same players have also managed sales of foreign equity in both closed and open offerings. Estimated total value of these offerings is no less than of the public offerings so far this year.

### *Icelandic equity market prospects*

Market capitalization of listed equities is likely to continue to grow in the near future. In this context it may be pointed out that many companies are aiming to be listed, others will enter the market through mergers with listed ones, and listed companies will increase their equity with new stock offerings to some degree. All this will lead to a rise in the nominal value of listed shares. Price trends, which are a major factor in market value, are more difficult to forecast, but if they do not fall considerably it is clear that market capitalization will rise and head towards the size of GDP within a few years. Most of the companies now aiming to be listed operate in other sectors than the largest ones currently on the ISE. These include property management, retailing, shipping operations, telecommunications and the media and leisure industry. Iceland Telecom is expected to be listed, as well as companies in the energy sector which will be incorporated into limited liability com-

panies in the future. Plans are afoot for listing more foreign companies on ISE following the first outside listing, Talenta Luxembourg Holding S.A., at the end of June.

The Achilles heel of the market is therefore not a lack of companies, but rather its low turnover compared with developed exchanges overseas. Turnover rate has increased fairly slowly for most of the time (see Table 1), although this is now changing. Many of the explanations for low turnover listed above will soon no longer apply. The benefits of electronic securities registration, direct access by ISE to foreign exchanges, growth in the number of investors and more active participation by them should all contribute to greater trading volume.<sup>5</sup>

Domestic demand for equities in the next few years will depend on the development of main economic aggregates such as economic growth, real disposable income, interest rates and savings, as well as the supply of other investment options. Icelandic pension funds, which have been very large buyers of securities, own relatively small holdings of shares compared to the levels seen in some other countries, with domestic and foreign equities and equity funds representing 28% of their portfolios at the end of May 2000. Their authorization for investing in equities was increased this year from 35% to 50% (of net assets for payment of pensions). Demand for Icelandic equities will depend on the return they produce and their competitiveness with foreign shares, rather than by demand conditions in Iceland. Foreign investors' interest in Icelandic companies will presumably be revealed in the near future when they are put on the same footing as Icelandic investors.

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5. In June, Copenhagen Stock Exchange reported substantial benefits in the form of more efficient equity trading during the year in which it has been linked up to the SAXESS trading system.