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market when they know that there will be a market in which to trade them in the future. The existence of a well-functioning secondary market thus makes buying securities in the primary market more appealing.

3.1 The primary security market[1]

The **primary market** is the mechanism through which firms raise additional capital by selling stocks, bonds and other securities, and through which current suppliers of capital can sell their privately held stake in the company to the public. The remainder of this section will focus on offerings of common shares. Recall that the primary market encompasses also all other securities.

3.1.1 Going public

If a company's share is traded in the primary market for the very first time, then it is referred to as an **initial public offering (IPO)**. By performing an IPO, the company changes from being a privately held firm into being a publicly held firm. If a company has sold stock previously and its shares are already listed, then the sale of shares through the primary market is called a **seasoned equity offering (SEO)**. IPOs are sometimes referred to as **unseasoned equity offerings**. IPOs and SEOs can consist of solely existing shares (**secondary shares**, for example shares of founders, venture capitalists or a parent company), solely new shares (**primary shares**) or a combination of both.[2] For example, in the case of the IPO of World Online (a Dutch Internet provider that went public around the peak of US and European stock markets in March 2000), the number of primary and secondary shares amounted to, respectively, 46 906 454 and 20 656 365 shares (see Exhibit 3.1). The proceeds from the sale of primary shares, net of issue costs, flow into the company's accounts. By contrast, the proceeds from the sale of secondary shares go into the pockets of existing shareholders. Usually, existing shareholders do not sell all the shares they hold. Their retained number of shares as a fraction of the number of post-IPO outstanding shares is called the **retained ownership percentage**.

The whole process of preparing and executing an IPO is often referred to as **going public**. In addition to allowing existing shareholders to exit and allowing the company to raise new capital (for example, to fund investment opportunities or to repay debt), IPOs are also undertaken for other reasons. For instance, an IPO is a useful leg-up to a future SEO (which might be of a much larger magnitude), it often yields a lot of free publicity, it enhances company status due to visibility and media coverage, and it also provides the opportunity to implement bonus and options schemes that are linked to the share price in the secondary market as an external performance measure. Very importantly, the public valuation of the shares ensures

[1] This section is a contribution by Martijn J. van den Assem, Assistant Professor at the Department of Finance and Investments of the Erasmus University of Rotterdam, the Netherlands. Homepage: www.few.eur.nl/few/people/vandenassem. Email: vandenassem@few.eur.nl. He would like to express his appreciation to Coen Mensink, Thierry Post and Nico van der Sar for providing valuable comments, and to Olivier Beck and Cederic Cremers for composing Exhibit 3.4.

[2] One should not confuse the difference between primary and secondary shares with the difference between the primary and the secondary market. The first distinction refers to the origin of shares traded (newly issued or existing), the second to the stage where trading takes place.

Exhibit 3.1 Cover of the preliminary prospectus or red herring of World Online for its March 2000 initial public offering

The information contained in this Preliminary Offering Circular is subject to completion and may be changed.

Subject to completion. Dated March 1, 2000.

World Online International N.V.

(a company incorporated under the laws of the Netherlands with its corporate seat in Rotterdam)

67 562 819 Ordinary Shares

(nominal value €0.40 per share)

This Offering Circular relates to an international offering, including a retail offering in the Netherlands, of 50 672 114 shares outside the United States in reliance on Regulation S under the United States Securities Act of 1933. In addition, 16 890 705 shares are being offered in a concurrent offering of shares in the United States only to qualified institutional buyers in reliance on Rule 144A under the Securities Act.

As part of the international offering, there will be a preferential allotment to subscribers of World Online resident in the Netherlands and, to the extent permitted by law, to employees and 'friends and family' of World Online, whose applications are received by march 13, 2000, 16.30 (CET). The maximum number of shares reserved for preferential allotment is 4 285 714 for such subscribers and 3 428 571 for employees, friends and family, respectively.

Of the total shares being offered, we are offering 46 906 454 newly issued shares and the selling shareholders identified herein are offering 20 656 365 shares. We will not receive any proceeds from the sale of the shares by the selling shareholders.

The international underwriters may, under certain circumstances, purchase up to an additional 7 600 817 shares from us at the initial public offering price less the underwriting discount. The U.S. underwriters may similarly purchase up to an aggregate of 2 533 606 additional shares.

It is currently estimated that the initial public offering price will be between €35 and €43 per share. Prior to the offering, there has been no public market for the shares. An application has been made to list the shares on the Official Segment of the stock market of Amsterdam Exchanges N.V. under the symbol 'WOL'.

See 'Risk Factors' beginning on page 13 for a discussion of certain factors to be considered in connection with an investment in the shares.

Offering Price: € per share.

The shares are offered severally by the underwriters specified herein, subject to receipt and acceptance by them and subject to their right to reject any order in whole or in part.

The underwriters expect to deliver the shares through the book-entry facilities of NECIGEF, Euroclear and Clearstream Banking against payment on or about March , 2000.

Joint Global Coordinators

Goldman Sachs International **ABN AMRO Rothschild**

Joint Lead Managers and Joint Bookrunners

ABN AMRO Rothschild **Goldman Sachs International**

Co-Lead Managers

Morgan Stanley Dean Witter **Rabo Securities**

Co-Managers

Kempen & Co N.V. **Robertson Stephens International**

The date of this Offering Circular is , 2000.

Source: Preliminary prospectus, World Online, 1 March 2000.

Exhibit 3.2 Table of contents from the World Online preliminary prospectus dated 1 March 2000

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Source: Preliminary prospectus, World Online, 1 March 2000.

that shares can be used easily as acquisition currency. Disadvantages of going public include the substantial costs (not to trivialise management time consumed) and the tight disclosure requirements imposed by security market regulation.

An important element of going public is the writing and subsequent distribution of the **prospectus**. The prospectus is a legal document containing the business plan, financial statements, details on the offering and other information that will help investors make well-informed investment decisions. It simultaneously serves as a marketing instrument. Information contained in the prospectus should give an unbiased picture of the firm. In a so-called comfort letter, lawyers state that the prospectus provides a complete, clear and verified picture of the firm. Accountants do the same with regard to the financial statements. Exhibit 3.2 shows the table of contents from the IPO prospectus of World Online.

Issues in the primary market are usually handled by **investment banks**. These provide advice and arrange and execute most of the tasks involved, including promoting the issue and collecting investors' applications. Investment banks also act as **underwriters** of a new issue. As intermediaries between the issuer and potential investors, underwriters guarantee the proceeds from the transaction to the issuer and/or the selling shareholders. Multiple types of underwriting exist, but most common are **firm-commitment** and **best-efforts** contracts. In the case of a firm commitment, the underwriter agrees to purchase the entire issue and absorb all unsold shares for its own account at a predetermined price. Under a best-efforts contract, the underwriter markets the new issue as well as it can but takes no price risk; the underwriter does not take ownership of the securities. Strictly, the appellation 'underwriter' is not appropriate in best-effort cases.

Investment banks generally cooperate on IPOs and form **syndicates** to share the underwriting and legal risks and to reach a sufficient number of potential investors. Many functional names for syndicate members are in use. Because professional credibility and reputation are very important goods among investment bankers, all these namings suggest great importance. However, among insiders, it is well known that the higher an investment bank is mentioned

on the cover of the prospectus, the more prestige is awarded. In international (often large) offers, the leading investment bank is named **global coordinator**. The joint global coordinators of the World Online IPO were Goldman Sachs and ABN AMRO. Smaller offers (often oriented towards local investors) are usually managed solely by a single **lead manager**. At least one syndicate member has to execute the important and prestigious role of **bookrunner**. The bookrunner maintains the order book during the subscription period and plays a decisive role with regard to final pricing and allocation. Examples of well-known US investment banks are Goldman Sachs, Merrill Lynch, Morgan Stanley, Citigroup, JP Morgan Chase and Lehman Brothers. Credit Suisse First Boston, UBS and Deutsche Bank are dominant players of European origin. In the case of large IPOs, there is often an additional **selling group** linked to the syndicate. In the most stringent form of the definition, banks in the selling group typically do not bear any risk, their sole focus being to distribute shares.

As a formal compensation for risk and efforts, syndicate members receive an **underwriting commission**, or gross spread.[3] Generally, this is composed of three components: a management fee (for managing the issue), an underwriting fee (for bearing the risks inherent to underwriting) and a selling concession (compensation for distribution). Total commission can add up to about 7%, depending on the country, the underwriting risk and the transaction size.

In most countries, an underwriter may support share prices after the IPO (in the secondary market) for a limited period of time (usually 30–45 days).[4] Both issuer and underwriter generally want to prevent prices in the aftermarket declining below the introduction price, because they want to avoid reputational damage. To facilitate underwriter price support, the selling shareholder or the issuer usually grants a so-called **Green Shoe option** or **overallotment option** (often with a duration of 30 days) to the underwriters.[5] Under an overallotment option agreement, the underwriter is allowed to buy additional shares at the offering price. Mostly, the option concerns 15% of the regular total transaction size. For example, in the case of World Online, the underwriters were allowed to purchase an additional 10 134 423 primary shares (7 600 817 + 2 533 606, equal to 15% of the regular transaction size of 67 562 819 shares; see Exhibit 3.1). Price support is facilitated as follows. In the case of sufficient public demand for the IPO shares, the underwriter initially allocates all shares, including those from the overallotment option. If aftermarket prices remain well above the introduction price, the underwriter does not interrupt trading and simply exercises his or her right to buy additional shares through the overallotment option. If the share price declines to or below the introduction price and support is deemed necessary, shares are bought back by the underwriter up to the extent of the overallotment option, thereby supporting the stock price. Depending on the number of shares bought back, the underwriter does not exercise – or exercises only partially – the overallotment option. An underwriter preferably abstains from price support beyond the extent of the overallotment option, since any additional share bought ends up on the underwriter's own shelves and thus exposes the underwriter to full price risk.

[3] The preliminary prospectus of World Online mentions the gross spread as 'the underwriting discount' (see Exhibit 3.1).

[4] In the case of World Online, one of the joint global coordinators was fined for manipulating the opening price on the first trading day. Once trading started, ABN AMRO immediately bought more than four million shares in the market, which contributed to an opening price of €50.20, €7.20 above the offering price. This could have caused misrepresentation of true market demand. According to the Dutch supervising authority Autoriteit Financiële Markten (AFM), ABN AMRO exceeded the limits of what is permitted in stabilisation transactions.

[5] The Green Shoe option is named after the Green Shoe Manufacturing Company, which first granted this option to an underwriter in 1963.

Exhibit 3.3 **Summary of initial listing requirements for the AMEX, the NASDAQ[1] and the NYSE**

Minimum requirement	AMEX	NASDAQ	NYSE
Post-issue publicly held shares[2]	1.0 million[3]	1.1 million	–
Number of public shareholders	400[3]	400	2000
Offering price	$3	$5	–
Pre-tax income	$750 000[4]	$1 million[5]	$2.5 million[6]
Book value of shareholders' equity	$4 million[7]	$15 million	–
Expected market value of publicly held shares[2]	$3 million	$8 million	$60 million

Note that summarised and IPO-tapered figures for US companies are presented; consult official listing manuals for a detailed overview. Historically, listing requirements have been subject to amendments; the above requirements went into effect around February 2004.

[1] The exhibited NASDAQ requirements relate to the NASDAQ National Market. Requirements for the NASDAQ SmallCap Market are less stringent.
[2] Shares held by directors, officers or their immediate families and other concentrated holdings of 10% or more are excluded in calculating the number of publicly held shares.
[3] AMEX requires 800 post-issue public shareholders and 500 000 shares publicly held, or 400 public shareholders and 1 000 000 shares publicly held.
[4] $750 000 in past fiscal year or in two of the three past fiscal years. This requirement does not apply if the expected market value of publicly held shares is $15 million or more, together with a two-year history of operations or together with an expected market capitalisation (= issue price × post-issue number of shares outstanding) of $50 million.
[5] $1 million in latest fiscal year or in two of three past fiscal years. This requirement does not apply if both stockholders' equity equals $30 million or more, expected market value of publicly held shares is at least $18 million and operating history entails at least two years. It is also waived if the expected market value of listed securities is $75 million or more or if both total assets and total revenues are at least $75 million.
[6] $2.5 million in the latest fiscal year together with $2 million in each of the preceding two years; or $6.5 million in the aggregate for the past three fiscal years together with a minimum of $4.5 million in the most recent fiscal year, and positive amounts for each of the preceding years. If expected market capitalisation is $500 million or more and revenues exceed $100 million, an aggregate cash flow of $25 million for the past three years suffices. Companies with at least $1 billion in expected market capitalisation and not less than $100 million in revenues are exempt from income requirements.
[7] This requirement does not apply if both expected market capitalisation is $75 million or more and expected market value of publicly held shares is at least $20 million.

Not every company is allowed to perform an IPO. All regulated exchanges impose listing requirements. These are roughly aimed at attracting viable companies, securing sufficient liquidity in the secondary market, promoting transparency and reducing insiders' opportunities to exploit information backlogs of investors. Requirements concern mainly financial track record (for example, three years), market capitalisation, post-issue free float (for example, 25% of total shares outstanding), transaction composition (the ratio of primary to secondary shares), transaction size (number or value of shares), number of post-issue public shareholders, lock-up provisions for existing shareholders (for example, six months for retained shares) and accounting principles applied. Exhibit 3.3 displays a summary of the initial listing requirements for AMEX, NASDAQ and NYSE.

Between the mid- and late 1990s, many European stock exchanges set up new markets for young firms with extraordinary potential for autonomous growth. Examples are the French Nouveau Marché and the German Neuer Markt. Although the listing requirements with respect to track record and profitability are less stringent, disclosure requirements and lock-up provisions are often tighter for these markets. In the late 1990s, numerous biotech, Internet and

media firms obtained a listing on one of these new markets. Ultimately, due to the collapse of Internet-related stocks in the early 2000s, many new markets became insignificant or even dissolved (the Neuer Markt was closed mid-2003).

3.1.2 Selling mechanisms and the pricing process

Most exchanges permit the following three methods by which IPOs can be publicly priced and sold:[6]

- In the case of **bookbuilding**, investors submit orders based on a price range published in a preliminary prospectus. This preliminary prospectus is often referred to as the **red herring** because the cover contains a disclaimer printed in red ink. Exhibit 3.1 shows the red herring cover of World Online. Note both the price range mentioned as €35–€43 and the blank space reserved for the temporarily unknown final offering price. Investors indicate their demand at different price levels within the given range. Compared to large (institutional) investors, smaller (retail) investors can usually only submit market orders (that is, orders that only indicate quantity demanded, regardless of price). As a result, bookbuilding provides the underwriter with a sound grasp of the interest in the offered shares at different price levels. Once subscription is closed, the underwriter and the issuer/selling shareholders jointly determine or negotiate the final offer price. Trading starts almost immediately thereafter, often within 24 hours. Logically, demand for almost any executable IPO exceeds the number of shares offered,[7] which means that demand can be met only partially. In the case of bookbuilding, allocation of oversubscribed issues typically occurs at the underwriter's discretion. This can leave some investors with empty hands, while others are favoured generously.
- In a **fixed-price offering**, subscription commences with a complete prospectus, including both offer size and price. Investors submit quantity orders based on this known and fixed price. Allocation rules and practices on oversubscribed fixed-price issues differ per country, but the allocation of oversubscribed issues is usually much more even-handed than in bookbuilding issues.
- In the case of IPOs by means of the **uniform price auction** or **tender** mechanism, a minimum price is stated in the prospectus. Investors indicate the highest price they are willing to pay for the number of shares they demand. Orders below the minimum price are rejected. The final offering price is generally the highest price accommodating the sale of all shares. This price applies to all successful bidders. Logically, rationing is absent or minimal in IPOs sold by auction. To prevent irrational bidding, a maximum price is sometimes applied after the closing of subscription.[8]

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[6] In addition, sometimes a flotation occurs by means of 'introduction'. This fourth method isn't essentially an IPO method because there's no preceding 'offering' or public subscription period. In fact, shares are sold and traded directly in the secondary market against current prices.

[7] Recall that many IPOs are underwritten. At first sight, undersubscribed issues might thus be about as common as oversubscribed issues. However, the definitive version of the underwriting agreement is signed by the underwriter usually only after expected demand has turned out to be sufficient. Disappointing demand generally necessitates postponement or a substantial reduction of the offering price or price range.

[8] Uninformed participants tend to overbid in order to secure a stake in the offering. Each individual expects insignificant influence of his or her own bidding on the final offering price because he or she relies on rational bids by others. In order to prevent irrational bidding, investors are warned in advance that extreme bids will be rejected. The precise limit for order-acceptance is determined only after the close of subscription.

Bookbuilding is the most popular method used in the USA. In Europe, bookbuilding became more common and eventually dominant around the mid-1990s.[9] The lack of regulation and the opacity surrounding the allocation process made the bookbuilding mechanism vulnerable to abuse. The box below discusses the abusive practices known as **spinning** and **laddering**. In the late 1990s, many issues were priced suspiciously far below their feasible levels and shares were subsequently allotted to parties affiliated to the underwriter or even to the company's management. Recent developments indicate a change in regulation and supervision in order to enhance transparency. For example, in November 2003, the US financial regulator, the National Association of Security Dealers (NASD), proposed various amendments to rules governing allocations and disclosure of demand.

Connecting Theory to Practice 3.1

Spinning and laddering

Spinning

Spinning refers to the allocation of attractive IPO shares to the personal brokerage accounts of individuals with investment banking business to offer. A special examining committee of the US congress chaired by Michael G. Oxley found that spinning occurred on a large scale in the late 1990s. Numerous officers and directors whose companies were investment banking clients of Goldman Sachs or Credit Suisse First Boston (CSFB) received substantial amounts of IPO shares, generating huge cumulative profits. There is no doubt that the trading of their companies' investment banking business for their own personal gain can be considered highly immoral. Documents obtained by Oxley also showed the use of research reports to hype companies that were investment banking clients, the possibly illegal (excess) underpricing of IPOs, potentially improper due diligence* in bringing companies to the market, and questionable use of analytics by analysts to justify unrealistic price targets.

Laddering

Laddering exceeds the stage of allocation. In the case of laddering, the underwriter requires investors to purchase additional shares in the aftermarket in return for being assigned substantial quantities of IPO shares. A cooperative customer could count on a favourable allocation in the next IPO. It cannot be excluded that laddering contributed to the high stock prices in the late 1990s. Favoured investors were mainly institutional money managers generating high commissions by active trading styles and high commission brackets.

In December 2002, a settlement by many large US investment banks amounting to $1.4 billion was announced. This settlement related to the consequences of investment banks' conflicts of interest on various fields and to their misleading behaviour towards (retail) investors. Earlier that year, the Securities and Exchange Commission (SEC) and NASD dropped charges against CSFB for abusive IPO allocation practices, but only after settlement for a payment of $100 million. The SEC accused CSFB of allocating IPOs for a large part to investors that had to transfer a considerable part of their subsequent gains to CSFB by paying excessively high brokerage commissions on other trades.

* A due diligence analysis includes reviewing all financial records plus anything else deemed important. The accompanying investment bank is required to judge the condition of the firm going public and to ascertain the correctness and completeness of the information to be contained in the prospectus.

[9] See, for instance, Sherman (2003) or Ljungqvist *et al.* (2003).

Before setting the price in fixed-price introductions or the range in IPOs by bookbuilding, most underwriters perform so-called **premarketing** activities. Premarketing serves as an important check on preceding theoretical valuation exercises and as a means to inform major investors about the forthcoming IPO. Premarketing embraces both investor education and an activity called sounding out investors. Both terms are typically investment bankers' jargon.

Investor education is carried out by an independently acting equity research analyst affiliated to the underwriter or another syndicate member. The analyst (personally and on his or her personal account) visits his or her institutional clients, informs them about the forthcoming IPO and provides them with his or her personal judgement about the price his or her fellow investment bankers have in mind. At the end of the meeting, the analyst gauges the interest from the client. Afterwards, the analyst presents the findings to his or her banking colleagues. The latter draw up a so-called feedback book, which is discussed with the issuer or selling shareholders. Investor education activities can exceed the commencement of the subscription period.

Sounding out investors refers to investment bankers directly (without an intervening analyst) gauging interest from institutional investors, generally by telephone.

In the USA, premarketing is not allowed, together with any written material, except for an official (preliminary) prospectus. Because the 'red herring' is not available in this phase (recall that this document by definition contains the price range, the appropriateness of which is gauged by premarketing), US underwriters use a preliminary red herring without a price range, called the '**pink herring**'.[10]

Once a reasonable fixed price or price range is determined, the formal subscription period commences. At the same time a '**road show**' starts, during which (executive) directors of the company present themselves and their company to the community of institutional investors and try to win them over. **One-on-ones** are discrete meetings between management/bankers and representatives of institutional investors.

3.1.3 IPO underpricing

Except for IPOs sold by auction, new issues on average have been significantly underpriced compared with their aftermarket value. Usually, **underpricing** (or **initial return**, IR) is measured as the relative difference between the first-day closing price (P_1) and the introduction price (P_0):[11]

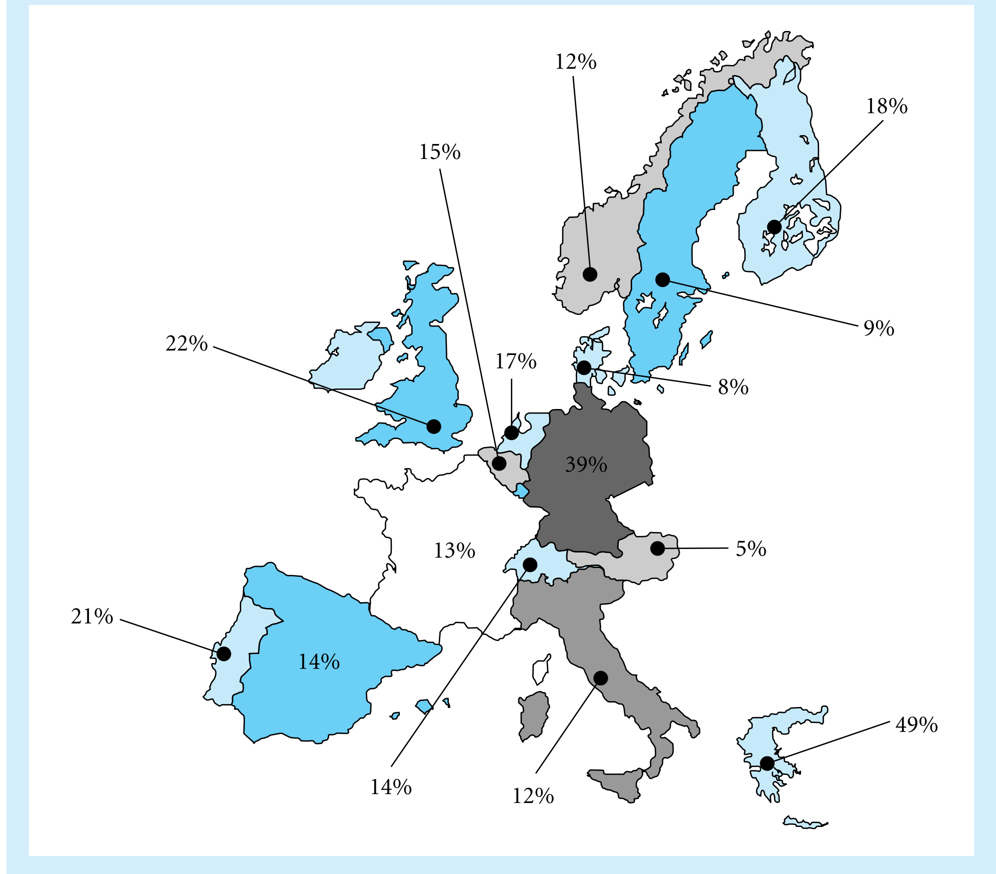
$$IR = (P_1 - P_0)/P_0$$

Since this return is not corrected for the share-price performance of comparable firms between the pricing date and the introduction date, it is called the raw or unadjusted initial return. Although dependent on period and country considered, it can be stated that average initial returns per country vary roughly between 10% and 20%. Exhibit 3.4 shows average

[10] In Europe, premarketing can also be accompanied by less formal documents, such as a predeal research report from a research analyst associated with one of the syndicate's investment banks. The investment bank and the issuing firm and/or selling shareholder are obliged to provide equal information to all approached investors.

[11] It is sometimes argued that the offering price should be compared with the stock price after several trading days, in order to exclude eventual influences of initial market inefficiencies. Although this argument might hold for some illiquid or restricted markets, persistent patterns of abnormal return in the immediate aftermarket are rarely if ever observed.

Exhibit 3.4 Initial public offering (IPO) underpricing in Europe, 1994–2001



Source: Private EU IPO database of Van den Assem.

initial returns for several European countries between 1994 and 2001. This period includes the notorious Internet-bubble period, which manifested itself not only in high valuations but also in high initial returns. Note the relatively high level of average underpricing in Germany (39%), which can be attributed to the enormous flow of small young growth firms towards the Neuer Markt.[12] Because of high uncertainty about future earnings and due to other causes, particularly IPOs of small young growth firms were coupled with high and sometimes incredible levels of underpricing. For comparison, for the AMEX, NASDAQ and NYSE, Bradley, Jordan and Ritter (2003) report an average level of underpricing over a roughly similar period (1996–2000) of 37.3%. The difference from the European average can be attributed (at least partially) to the exclusion of the years 1994, 1995 and 2001, which gives the results of the US study a larger weight of the Internet-bubble period (roughly concerning 1999 and early 2000).

[12] A possible explanation for the high level of underpricing in Greece (49%) is the large number of IPOs issued on the Greek Parallel Market. This market is relatively easily accessible for issuers and it accordingly attracts relatively risky companies.

The academic literature offers several explanations for IPO underpricing. Among the most widely accepted theories is the adverse selection or **winner's curse** model of Rock (1986). Rock bases his explanation for underpricing on the supposition of unequally informed investors. In his model, he distinguishes only two types of investors: the perfectly informed and the relatively uninformed. Note that although the latter lack complete information, they still have access to some information and they act rationally given this information. Since perfectly informed investors will apply only for underpriced issues, the uninformed investor faces a winner's curse. On the one hand, in underpriced issues they are confronted with competition due to demand from informed investors, so they end up with rationed allocations of shares yielding positive initial returns. On the other hand, in overpriced issues there is no competing demand, so uninformed investors end up with full allocations of shares yielding negative initial returns. Overall, this adverse selection results in negative allocation-weighted initial returns if IPOs are averagely priced according to their (fair) market value. The harmful consequence of the winner's curse is that all relatively uninformed investors will abstain from participating in the IPO market. However, Rock assumes that both types of investors are needed to take up all shares in IPOs; in order to prevent the uninformed investors from disappearing from the scene, all offerings need to be sold at a discount to compensate them for this bias in allocation. According to Rock, it is this discount that we observe and call underpricing.

Following Rock's reasoning, positive initial returns are also regarded as a compensation for informed investors. The ability to distinguish between **hot IPOs** (underpriced) and **cold IPOs** (overpriced) is not for free. Informed investors incur so-called **information-acquisition costs**. Since the costs of acquiring information are fixed, large investors will have relatively low research costs per dollar invested. Therefore, it is very likely that large investors will, on average, be the better-informed individual investors. This is confirmed indirectly by the practice of underwriters. During the premarketing phase of the pricing process, underwriters particularly probe large investors in order to get a sense of the expected market value of the shares.

Rock's explanation simultaneously puts the intuitively appealing initial returns in another perspective: it might be very difficult to obtain shares in an underpriced IPO, due to high demand from other investors and thus severe rationing. The winner's curse also teaches that overstating the number of shares applied for might be very risky if fair (aftermarket) value turns out to be overestimated.

In addition to the information asymmetry-based theory of Rock, the following theories for IPO underpricing should be mentioned. Notice that information asymmetry underlies many explanations.

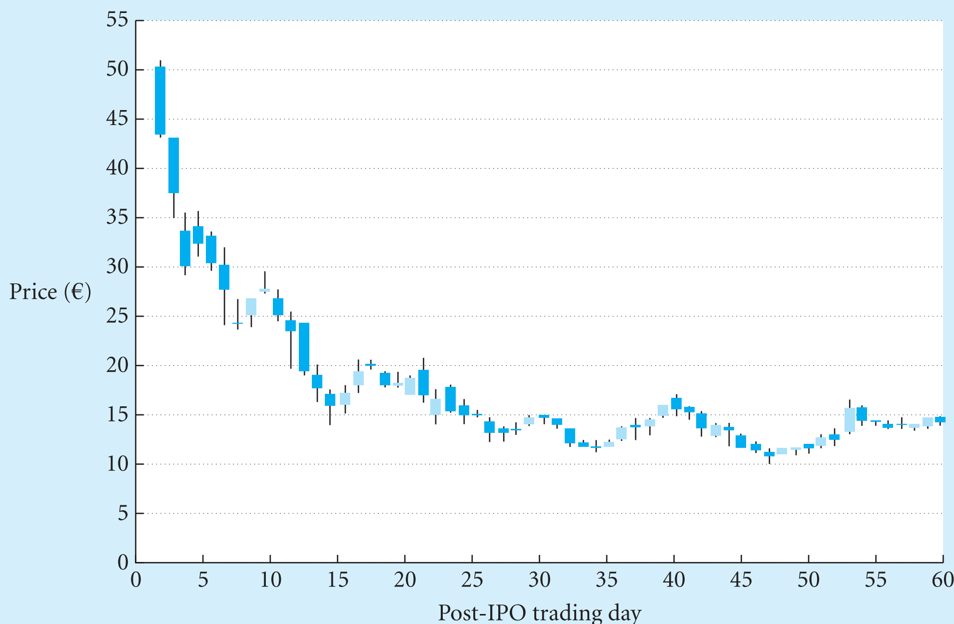
- In Logue's (1973) view, underwriters operate in an environment that lacks competition. This provides the underwriter with some bargaining power over the firm that goes public. By neglecting the will of the firm and its selling shareholders to a certain extent by pricing the IPO shares at a discount, the underwriter minimises his or her marketing efforts (cheap shares are easier to sell) and reduces his or her risks (price support, reputation damage and legal liability are less likely). Furthermore, the investment bank gains popularity among investors by regularly selling IPOs at significant discounts. Of course, the underwriter will weigh these advantages against lower commission proceeds and the deterrence of potential future issuers.
- Baron (1982) also considers the relationship between the issuer/selling shareholder and the investment bank. In contrast to Logue, Baron focuses not on bargaining power but rather on information asymmetry: the underwriter is assumed to have more information about demand for the shares than the firm going public. By allowing underpricing, the underwriter is rewarded for valuing and selling the company's shares. The underwriter

gains by the strengthening of its reputation among investors. The more ex-ante uncertainty surrounding the company's value, the more importance is assigned to the underwriter's expertise and, therefore, the larger the underpricing discount will be.

- Welch (1992) regards underpricing as a trigger to initiate massive demand. According to Welch, investors do not rely only on their own assessment of the IPO; above all, they keep an eye on the behaviour of others. To prevent investors from keeping aloof from the IPO, the issuer and/or selling shareholders need to apply a discount – underpricing – to win over the first investors. Their buying behaviour initiates demand from other investors and a cascade is originated.
- Signalling models by Allen and Faulhaber (1989) and others regard underpricing as a means for firms and existing shareholders to establish a good reputation, enhancing the opportunities (increasing the proceeds) for a following large seasoned equity offering. A high initial return on the IPO is costly but leaves a good taste in the investor's mouth. By showing favourable profits or dividend payments up to the SEO, a superior company proves itself to be a high-quality firm, inducing a high stock price. Inferior companies do not benefit from underpricing, because they cannot imitate high-quality firms: they risk revelation of their inferiority and a declined stock price before the SEO is executed. Inferior companies act optimally when pursuing a hit-and-run strategy at the time of the IPO. Because of this distinction, the level of underpricing is considered a credible signal about the true nature of a firm.
- Benveniste and Spindt (1989) take underpricing to be a compensation for the revelation of costly private information by well-informed (large) investors. Ideally, underwriters wish to collect information about market demand in advance, so they can price the issue accordingly. Premarketing can be a fruitful way to gauge this demand, but without compensation, the consulted investors have no incentive to reveal positive information. By repeatedly consulting the same investors, by allocating them favourably and by adjusting the offering price only partially for the new information obtained, investors do have an incentive to cooperate. In line with Benveniste and Spindt's reasoning, empirical analyses indeed show that issues with positive revisions of the final offering price compared with the initial price range in the preliminary prospectus are still severely underpriced – despite these revisions. This finding is referred to as the partial adjustment phenomenon.[13]
- The underpricing theory of Tiniç (1988) is frequently referred to as the implicit insurance model or lawsuit-avoidance hypothesis. By substantially underpricing the issue, underwriters reduce the chance of lawsuits from investors whose new investment has declined below its offering price. Accompanying and underwriting an IPO entails legal responsibilities (depending on national legislation). Apart from legal liabilities, lawsuits might cause uninvited damage to an investment bank's reputation. The IPO of World Online serves as an example of an IPO that activated many lawyers. Among the accusations was the proposition that World Online and the underwriters left out important notifications and provided misleading information in the prospectus. A noteworthy detail is that the World Online IPO coincided with the peak of Internet stocks. World Online happened to be among the last to go public during the Internet hype before the hype collapsed. It is hard to determine which part of the stock's dramatic decline can be contributed to the charges (if justified) and which part is merely a consequence of broad market developments. Exhibit 3.5 shows World Online's post-IPO stock-price development.

[13] Examples of studies demonstrating the partial adjustment phenomenon are Hanley (1993) and Loughran and Ritter (2002).

Exhibit 3.5 **World Online's dramatic post-initial public offering (IPO) stock price development**



World Online's initial price range was set at €35–€43. After the close of subscription, the final offering price was fixed at €42. The opening price was €50.20. After peaking at €51, the stock ended its first trading day on 17 March 2000 at €43.20. World Online's closing price after 60 trading days (14 June 2000) was €14.35 (–67%). For comparison, from 17 March to 14 June, the NASDAQ Composite went down from 4798 to 3797 points (–21%) and the Dow Jones Internet Composite fell from 467 to 280 (–40%).

3.2 The secondary security market

In the **secondary market**, previously issued securities are traded between investors. The proceeds from selling the securities go to the current owners of the securities, not to the original issuers. Generally, not every individual investor has direct access to security markets. Rather, retail investors generally need to employ **security brokers**. Brokers act as intermediaries between buyers and sellers, a service for which they charge brokerage commission. Exhibit 3.6 illustrates the basics of trading in the secondary market. If an investor wants to execute a particular trade, then the brokerage function delivers an order with the specified terms to a **marketplace**. There, buy and sell orders are executed. Finally, **clearing** and **settlement** ensure that both sides of the transaction honour their commitments.

While these basics are simple, there is a wide variety in orders, including market orders and limit orders. Also, there is a variety of brokers, ranging from full-service brokers to deep-discount brokers, and a variety of marketplaces, including securities exchanges, OTC markets and alternative trading systems (ATSs). By contrast, the settlement of the trades is usually centralised. In the USA, the Depository Trust & Clearing Corporation (DTCC) is the focal point for this transferring of ownership from one entity to another. In addition to the mechanics,