



FN 312

Investments



Outline

- How firms issue securities
- How securities are traded
- US securities market
- Trading costs
- Buying on margin



How Firms Issue Securities

- Primary
 - New issue
 - Key factor: issuer receives the proceeds from the sale
- Secondary
 - Existing owner sells to another party
 - Issuing firm doesn't receive proceeds and is not directly involved

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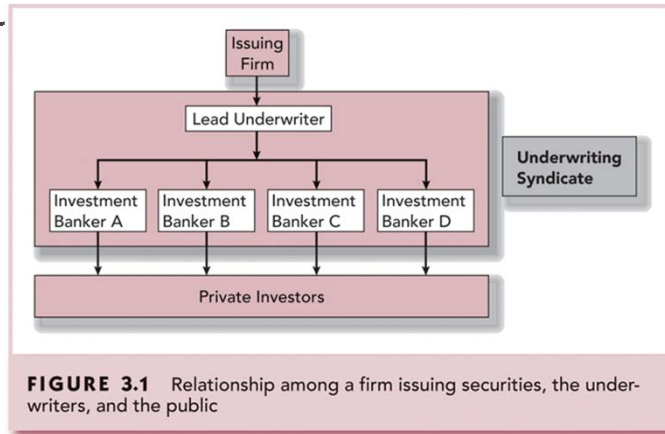


How Firms Issue Securities

- IPO
- Shelf registration
- Private placement

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Figure 3.1 Relationship Among a Firm Issuing Securities, the Underwriters and the Public



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How Firms Issue Securities



- IPO (Initial Public Offering)
 - Investment bankers (IB) form syndicate of underwriters
 - Lead underwriter and a team of other IBs
 - Two types of issuing: firm commitment or best effort
 - Preliminary Prospectus often called “red herring” because of the disclaimer printed in red
 - Send preliminary prospectus for SEC approval

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How Firms Issue Securities

■ IPO (Initial Public Offering)

- During the approval process firm cannot sell securities but IBs go on a "road show"
- Gather demand and pricing for security issuance (Book building)
- SEC approve prospectus
- Allocate securities to demand (mostly institutions)
- Sell securities in the primary market

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Figure 3.2 Average Initial Returns for IPOs in Various Countries

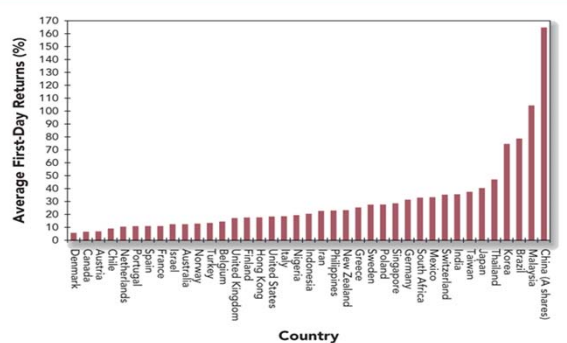


FIGURE 3.2 Average initial returns for IPOs in various countries

Source: Provided by Professor J. Ritter of the University of Florida, 2005; bear.cba.ufl.edu/ritter. This is an updated version of the information contained in T. Loughran, J. Ritter, and K. Rydqvist, "Initial Public Offerings," *Pacific-Basin Finance Journal* 2 (1994), pp. 165-199. Copyright 1994 with permission from Elsevier Science. Updated August 2007.

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Initial Public Offerings

- Underpricing of IPOs
 - On average we observe price run up on the first day of trading
 - Explanation: cost to the issuing firm
 - Long run post sale returns does not out perform other securities in the same class

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Figure 3.3 Long-term Relative Performance of Initial Public Offerings

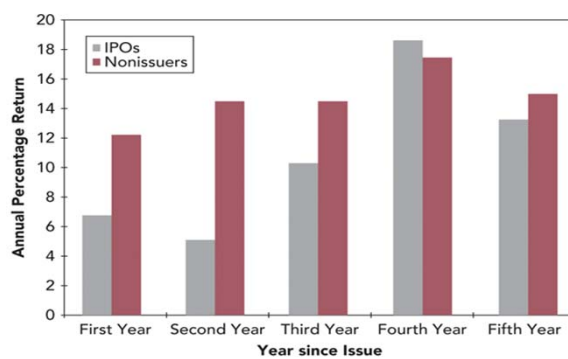


FIGURE 3.3 Long-term relative performance of initial public offerings

Source: Professor Jay R. Ritter's Web site, University of Florida, May 2005, bear.cba.ufl.edu/ritter/ipodata.htm.

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Shelf Registrations

- SEC Rule 415 allows for firms to register securities and gradually sell them to the public for two years
- Introduced in 1982
- Ready to be issued – on the shelf
- Use to reduce floating and registration costs

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Private Placements

- Sale to a limited number of sophisticated investors not requiring the protection of registration
- Allowed under Rule 144A
- Dominated by institutions
- Very active market for debt securities
- Not active for stock offerings

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Types of Orders

- Market—executed immediately and investors only specify number of shares. The order is executed at the market price when the orders hits trading room/computer system
- Price-contingent
 - Limit order: Investors specify number of shares and the price to buy or sell at. Order is executed when price reaches the limit price.

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Figure 3.4 The Limit Order Book for Intel on the Archipelago Market, January 19, 2007

INTC Intel Corp

NYSE Arca. INTC Go>>

Bid				Ask			
ID	Price	Size	Time	ID	Price	Size	Time
ARCA	20.77	23100	14:08:23	ARCA	20.78	27200	14:08:23
ARCA	20.76	35725	14:08:22	ARCA	20.79	31800	14:08:23
ARCA	20.75	37391	14:08:21	ARCA	20.80	32000	14:08:22
ARCA	20.74	24275	14:08:23	ARCA	20.81	30500	14:08:22
ARCA	20.73	20524	14:08:23	ARCA	20.82	17090	14:08:21
ARCA	20.72	6890	14:08:21	ARCA	20.83	19650	14:08:01

FIGURE 3.4 The limit order book for Intel on the Archipelago market, January 19, 2007

Source: New York Stock Exchange Euronext Web site, www.nyse.com.

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Figure 3.5 Price-Contingent Orders

Limit buy or sell order : buy sell when price hits limit
Stop loss: sell immediately if price drops to the stop loss level
Stop buy: do not buy if price increases to a certain level

		Condition	
		Price below the Limit	Price above the Limit
Action	Buy	Limit-Buy Order	Stop-Buy Order
	Sell	Stop-Loss Order	Limit-Sell Order

FIGURE 3.5 Price-contingent orders

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Price quotes

- Price quotes
 - Bid Price: price investors sell at
 - Ask Price: price investors buy at
 - The difference is called the "spread"
- The ask price is higher than the bid price in normal market conditions
- The difference in the bid as ask price is the commission to the dealer
- Why the spread?
 - Inventory cost
 - Information asymmetry between dealer and buyer/seller
 - Effect of tick size

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Cost of Trading

- Commission: fee paid to broker for making the transaction
- Bid-ask spread: turn around cost

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How Securities are Traded

- Types of Markets
 - Direct search: Least organized
 - Broker: Trade for clients
 - Dealer : Trade and maintain inventory for its own account
 - ECN (Electronic communication networks): Electronic programs that allow investors to trade directly with each other by passing broker/dealer
 - Book is available to all participants
 - Auction (use specialist)
 - Most integrated

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U.S. Security Markets

- NYSE: Traditionally was only a specialist market
 - Specialist market: A particular stock is assigned to one specialist who makes the market
 - Making markets means stands ready to buy/sell stock at bid/ask, maintain inventory, and maintain orderly markets
 - Broker buy/sells for clients
 - The specialist is required to use the highest offered purchase price and the lowest offered selling price

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New York Stock Exchange (NYSE)

- Member functions
 - Commission brokers: buy sell for clients
 - Floor brokers: buy and sell for clients and own account
 - Specialists: makes market. Stand ready to buy of sell.
 - A specialist is assigned many stocks. But a stock is assigned to only one specialist

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New York Stock Exchange (NYSE)

- How trade is executed in the NYSE main floor
 - Order reaches the floor to a broker
 - Broker finds specialist of the specific stock
 - Broker considers bid/ask prices.
 - If there is another broker that wants to trade inside the bid/ask quote, the two brokers can trade directly and the specialist records the price.
 - Otherwise broker trades with specialist and tries to get the best price for clients

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New York Stock Exchange (NYSE)

- How trade is executed in the NYSE main floor
 - Trading stocks at the NYSE:
<http://www.youtube.com/watch?v=RiGdUAURyNw>
 - NYSE trading floor:
<http://www.youtube.com/watch?v=3azjekDUtNk>

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Table 3.2 Some Initial Listing Requirements for the NYSE

		TABLE 3.2
Minimum annual pretax income in previous 2 years	\$ 2,000,000	Some initial listing requirements for the NYSE
Revenue	\$ 75,000,000	
Market value of publicly held stock	\$100,000,000	
Shares publicly held	1,100,000	
Number of holders of 100 shares or more	2,200	

Source: New York Stock Exchange, www.nyse.com January 2007.

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New York Stock Exchange (NYSE)

■ Block houses

- A **block trade** is a permissible, noncompetitive, privately negotiated transaction either at or exceeding an exchange determined minimum threshold quantity of shares, which is executed apart and away from the specialist or electronic markets. In the United States and Canada a block trade is usually at least 10,000 shares of a stock or \$200,000 of bonds but in practice significantly larger.
- Unlike large public offerings, for which it often takes months to prepare the necessary documentation, block trades are usually carried out at short notice and closed quickly.
- In the NYSE the block trades are sent to the block house (up stairs) of the NYSE floor.
- Trade are crossed if there is a match sell/buy. Otherwise trades are splitted and sent to the floor for trading.

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New York Stock Exchange (NYSE)

■ SuperDot

- It was the electronic system used by the NYSE to route orders from [investors](#) or their [agents](#) to a [specialist](#) located on the floor of the exchange.
- Since 1976, most of the orders in NYSE had been transmitting electronically to specialists screens over the DOT or via the upgraded SuperDot. In 2009, SuperDOT was replaced by the new NYSE [Super Display Book system](#) (SDBK) for processing orders.^[2] In 2012, Display Book was replaced by [Universal Trade Platform](#) (UTP).
- Most individual investors never had direct access to the SuperDot system. However, they indirectly utilized the system through software or online services offered by brokerages that in turn placed the client orders into the SuperDot.

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Table 3.3 Block Transactions on the New York Stock Exchange

TABLE 3.3

Block transactions on the New York Stock Exchange

Year	Shares (millions)	% Reported Volume	Average Number of Block Transactions per Day
1965	48	3.1%	9
1970	451	15.4	68
1975	779	16.6	136
1980	3,311	29.2	528
1985	14,222	51.7	2,139
1990	19,682	49.6	3,333
1995	49,737	57.0	7,793
2000	135,772	51.7	21,941
2005	112,027	27.7	17,445
2006	97,576	21.3	14,360
2007	57,079	10.7	7,332

Source: Data from the New York Stock Exchange Euronext Web site, www.nyse.com.

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U.S. Security Markets

- The NASDAQ (National Association of Securities Dealers Automated Quotation System)
 - Founded in 1971, it is the second-largest stock market comparing to official stock exchanges by [market capitalization](#) in the world, after the [New York Stock Exchange](#). The exchange platform is owned by [NASDAQ OMX Group](#), which also owns the [OMX](#) stock market network.
 - At the beginning it used to be an Over-The-Counter system. But then graduated to automated systems.
 - Investors or brokers can see quote prices from other broker/dealers then buy/sell at those prices through computer network
 - In 2006 NASDAQ changed from stock market to licensed national exchange.
 - On November 8, 2007, NASDAQ bought the Philadelphia stock exchange PHLX
 - Less strict rules for listing.
 - It has many small, growth, and technology firm listed.

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U.S. Security Markets

- NASDAQ
 - List about 3200 firms
 - Offers 3 listing options
 - Levels of subscribers
 - Level 1 – inside quotes
 - Level 2 – receives all quotes but they can't enter quotes
 - Level 3 – dealers making markets, dealers can enter quotes and make markets
 - Smaller firms not eligible for listing can trade on Pink Sheet LLC

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Table 3.1 Partial Requirements for Listing on NASDAQ Markets

TABLE 3.1

Partial requirements for initial listing on NASDAQ markets

	NASDAQ Global Market	NASDAQ Capital Market
Shareholders' equity	\$15 million	\$5 million
Shares in public hands	1.1 million	1 million
Market value of publicly traded shares	\$8 million	\$5 million
Minimum price of stock	\$5	\$4
Pretax income	\$1 million	\$750,000
Shareholders	400	300

Source: The NASDAQ Stock Market, www.nasdaq.com. December 2006, The NASDAQ Stock Market, Inc. Reprinted with permission.

U.S. Security Markets (Amex)

- Third largest exchange in the US
- By 1865, following the [American Civil War](#), stocks in small industrial companies, such as iron and steel, textiles and chemicals were first sold by curbstone brokers. Efforts to organize and standardize the market started early in the 20th century under [Emanuel S. Mendels](#) and Carl H. Pforzheimer [1]. In 1908, the New York Curb Market Agency was established, to codify trading practices. In 1911, the curbstone brokers came to be known as the New York Curb Market, which then had a formal constitution with brokerage and listing standards.
- In 1929, the New York Curb Market changed its name to the New York Curb Exchange. Within no time, the Curb Exchange became the leading international stock market, listing more foreign issues than all other U.S. securities markets combined. In 1953 the Curb Exchange was renamed the American Stock Exchange.
- NYSE Euronext completed its acquisition of the [Amex](#) (American Stock Exchange) on October 1, 2008.



Other Security Markets

- Euronext <http://www.nyx.com/>
- **Euronext N.V.** is a European electronic stock exchange based in Amsterdam, Netherlands,^[3] and with subsidiaries in Belgium, France, Netherlands, Portugal and the United Kingdom. In addition to equities and derivatives markets, the Euronext group provides clearing and information services. As of December 2010, markets run by Euronext had a market capitalization of US\$2.93 trillion, making it the 5th largest exchange in the world.^[4] Euronext merged with NYSE Group, Inc. on April 4, 2007 to form NYSE Euronext (Euronext: NYX), the "first global stock exchange".

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U.S. Security Markets

- NYSE group 2006 includes the NYSE and NYSE Arca (Archipelago)
- NYSE Euronext <http://www.nyx.com/>
- **NYSE Euronext, Inc. (NYSE: NYX)** is an American multinational financial services corporation that operates multiple securities exchanges, including the New York Stock Exchange, Euronext and NYSE Arca (formerly known as ArcaEx). NYSE merged with Archipelago Holdings on March 7, 2006,^[2] forming NYSE Group, Inc. On April 4, 2007, NYSE Group, Inc. merged with Euronext N.V. to form the first global equities exchange,^[3] with its headquarters in Lower Manhattan.
- Due to apparent moves by NASDAQ to acquire the London Stock Exchange,^[5] NYSE Group, owner of the New York Stock Exchange, offered €8 billion (US\$10.2b) in cash and shares for Euronext on 22 May 2006. NYSE group and Euronext merged in 2007.
- NYSE Euronext now includes Archipelago, Euronext, Amex, and the former Euronext
- <http://www.nyx.com/en/who-we-are/quick-facts>
- NYSE scandal: <http://www.nbcnews.com/id/3072538/ns/business-corporate-scandals/t/grassos-ouster-just-beginning/#.Ug39C9KTxIF>

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Other Security Markets

- Futures market and option markets
 - The CME group (chicago mercantile exchange)
 - Merger of CME and CBOT (chicago board of trade)
 - **CME Group Inc.** (Chicago Mercantile Exchange) is the world's largest futures exchange company. It owns and operates large [derivatives](#) and [futures exchanges](#) in [Chicago](#) and [New York City](#), as well as online trading platforms. It also owns the Dow Jones stock and financial indexes, and CME Clearing Services, which provides settlement and clearing of exchange trades. The [exchange-traded derivative contracts](#) include futures and options based on interest rates, equity indexes, foreign exchange, energy, agricultural commodities, rare and precious metals, weather, and real estate.^[1] It has been described by [The Economist](#) as "The biggest financial exchange you have never heard of."
- Bond markets: No organized central exchange. Only Over-The-Counter (OTC) market

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Other Security Markets

- European stock trades: Euronext
 - European bonds: trade OTC
 - European derivatives: Eurex
 - <http://www.eurexchange.com/exchange-en/>
 - Thailand Stocks: stock exchange of thailand (SET)
 - Thailand bonds: Centralized OTC through Thai BMA (bond market)
 - List of many countries stock exchange
 - <http://www.eurexchange.com/exchange-en/>
 - Globalization and consolidation of stock markets

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Figure 3.6 Market Capitalization of Major World Stock Exchanges, 2007

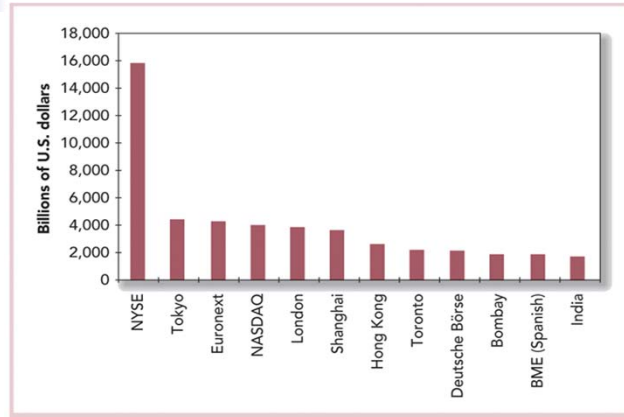


FIGURE 3.6 Market capitalization of major world stock exchanges, 2007
Source: World Federation of Exchanges.

Buying on Margin

- Using only a portion of the proceeds for an investment
- Borrow remaining component from broker
- Margin arrangements differ for stocks and futures

Stock Margin Trading

- Initial Margin is currently 50%; you can borrow up to 50% of the stock value
 - Set by the Fed
- Maintenance margin: minimum amount equity in trading can be before additional funds must be put into the account
- Margin call: notification from broker that you must put up additional funds

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Margin Trading - Initial Conditions Example 3.1

X Corp	\$100		
60%	Initial Margin		
30%	Maintenance Margin		
100	Shares Purchased		
<u>Initial Position</u>			
Stock	\$10,000	Borrowed	\$4,000
		Equity	\$6,000

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Margin Trading - Maintenance Margin Example 3.1

Stock price falls to \$70 per share

New Position

Stock	\$7,000	Borrowed	\$4,000
		Equity	\$3,000

$$\text{Margin\%} = \$3,000 / \$7,000 = 43\%$$

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Margin Trading - Margin Call Example 3.2

How far can the stock price fall before a margin call?

$$(100P - \$4,000)^* / 100P = 30\%$$

$$P = \$57.14$$

$$* 100P - \text{Amt Borrowed} = \text{Equity}$$

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Table 3.4 Illustration of Buying Stock on Margin

TABLE 3.4

Illustration of buying stock on margin

Change in Stock Price	End-of-Year Value of Shares	Repayment of Principal and Interest*	Investor's Rate of Return
30% increase	\$26,000	\$10,900	51%
No change	20,000	10,900	-9
30% decrease	14,000	10,900	-69

*Assuming the investor buys \$20,000 worth of stock, borrowing \$10,000 of the purchase price at an interest rate of 9% per year.

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Short Sales

- Purpose: to profit from a decline in the price of a stock or security and hedging derivative securities
- Mechanics
 - Borrow stock through a dealer from another account
 - Sell it and deposit proceeds and margin in an account
 - The short seller owes all the cash flows of the security to the borrowed account including dividends

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Short Sales

■ Mechanics

- If the original owner wants to sell the stock, the broker needs to find the stock from another account to substitute the current owner
- If the stock from another account cannot be found then the borrower must close out the position by buying the stock and giving it back immediately
- Closing out the position: buy the stock and return to the party from which it was borrowed

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Short Sale – Initial Conditions Example 3.3

Dot Bomb	1,000 Shares
50%	Initial Margin
30%	Maintenance Margin
\$100	Initial Price

Sale Proceeds	\$100,000
Margin & Equity	50,000
Stock Owed	100,000

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Short Sale - Margin Call

Maintenance margin = Equity/ value of shares owe
How much can the stock price rise before a margin call?

$$(\$150,000^* - 1000P) / (1000P) = 30\%$$
$$P = \$115.38$$

* Initial margin plus sale proceeds

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Regulation Securities Markets Continued

- Regulatory Responses to Recent Scandals
 - Public Company Accounting Oversight Board
 - Financial experts to serve on audit committees of boards of directors
 - CEOs and CFOs personally certify firms' financial reports
 - Boards must have independent directors
 - Sarbanes-Oxley Act

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Insider Trading

- Officers, directors, major stockholders must report all transactions in firm's stock
- Insiders do exploit their knowledge
- Leakage of useful information to some traders

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Summary

- How firms issue securities
- How securities are traded
- US securities market
- Trading costs
- Buying on margin

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