



Aalto University
School of Business

Financial Statement Analysis (22E00100)

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Accounting Information and Value

Accounting Information and Value

- Financial statements are not intended to yield a final measure of firm value.
 - Instead, they provide information that assists in the determination of value.
- Balance sheet measures the cumulative amount that has been invested in the past to generate sales transactions.
- Income statement measures the expected cash flow consequences of sales transactions consummated during the current period.

Accounting Information and Value

- In most business, the accounting system can be thought of as classifying the business into a series of current and expected future *sales transactions*.
 - Sales transaction is the critical event that leads to the recognition and measurement of value in the financial statements.
 - A sale triggers the recognition of revenues and expenses, the difference between these items is recorded as operating profit in the income statement.
 - Operating income resulting from sales transactions during a period rarely coincides with the actual net cash receipts generated by these transactions during the period.

Accrual Accounting and Accruals

- The accounting rules that measure changes in assets and liabilities are collectively known as *accrual accounting*, and the differences between accounting income and cash receipts are referred to as the *accruals*.
 - Completely cash-based accounting system would have no noncash assets or liabilities.
 - Over the long run, net income and cash flows will be similar.
 - Accrual accounting just changes the timing of the recognition of cash receipts and payments.
 - Although the financial statements do not attempt to measure the expected future cash consequences of future sales transactions, they nevertheless provide a rich source of information to help in forecasting the future cash flows associated with these transactions.
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Equity Valuation Theory

- The basic theory of equity valuation is straightforward and well established.
- The value of equity securities is equal to net present value of the future cash distributions that they are expected to generate.
- These cash distributions traditionally have taken the form of cash dividend payments, and so the value of equity often is expressed as the net present value of the *expected future dividend payments*, as shown in the following dividend-discounting model:

$$Value_0 = \sum_{t=1}^{\infty} \frac{Cash\ Dividend_t}{(1 + r)^t}$$

where $Value_0$ = value of equity at time 0, $Cash\ Dividend_t$ = expected amount of cash dividend to be paid in period t , r = discount rate (cost of capital)

Equity Valuation Theory

- Stock repurchases is another way that cash can be distributed to equity holders.
- While dividends represent routine cash payments made on a pro rata basis to all equity holders, stock repurchases involves the business buying back its own stock from specific equity holders.
- Equity issuances can be thought of as negative cash distributions that should be netted against the positive cash distributions associated with dividends and stock repurchases in order to determine the net cash distributions to equity.

$$Value_0 = \sum_{t=1}^{\infty} \frac{Cash\ Dividend_t + Stock\ Repurchases_t - Equity\ Issuances_t}{(1 + r)^t}$$

Simply refer to the numerator as "distributions to equity holders"

Equity Valuation Theory

- What determines the amount and timing of distributions to equity holders?



- Since equity holders are the owners of the business, they have the residual claim on the net cash flows available from a business's operating, investing, and non-equity financing activities.

Equity Valuation Theory

- In practice, distributions to equity holders are made at the discretion of management, based on a variety of factors:
 - How much cash did the business's operating activities generate?
 - How much cash was used for investing activities in order to maintain or expand the scale and scope of the business's operating activities?
 - How much cash is required to make scheduled payments to providers of nonequity capital, such as interest and principal payments on loans?
 - How much cash should be raised (used) issuing (retiring) nonequity capital, such as debt and preferred stock?
 - How much cash should be retained in the business in the form of financial assets to provide for future cash flow needs?
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Apple Inc.

CONSOLIDATED BALANCE SHEETS - USD (\$) \$ in Millions		
	Sep. 24, 2016	Sep. 26, 2015
Current assets:		
→ Cash and cash equivalents	\$ 20,484	\$ 21,120
→ Short-term marketable securities	46,671	20,481
Accounts receivable, less allowances of \$53 and \$63, respectively	15,754	16,849
Inventories	2,132	2,349
Vendor non-trade receivables	13,545	13,494
Other current assets	8,283	15,085
Total current assets	106,869	89,378
→ Long-term marketable securities	170,430	164,065
Property, plant and equipment, net	27,010	22,471
Goodwill	5,414	5,116
Acquired intangible assets, net	3,206	3,893
Other non-current assets	8,757	5,422
Total assets	321,686	290,345

→

CONSOLIDATED BALANCE SHEETS - USD (\$) \$ in Millions		
	Sep. 24, 2016	Sep. 26, 2015
Current liabilities:		
Accounts payable	37,294	35,490
Accrued expenses	22,027	25,181
Deferred revenue	8,080	8,940
Commercial paper	8,105	8,499
Current portion of long-term debt	3,500	2,500
Total current liabilities	79,006	80,610
Deferred revenue, non-current	2,930	3,624
Long-term debt	75,427	53,329
Other non-current liabilities	36,074	33,427
Total liabilities	193,437	170,990
Commitments and contingencies		
Shareholders' equity:		
Common stock and additional paid-in capital, \$0.00001 par value: 12,600,000 shares authorized; 5,336,166 and 5,578,753 shares issued and outstanding, respectively	31,251	27,416
Retained earnings	96,364	92,284
Accumulated other comprehensive income/(loss)	634	(345)
Total shareholders' equity	128,249	119,355
Total liabilities and shareholders' equity	\$ 321,686	\$ 290,345

Equity Valuation Theory

- In the long run, the free cash flows generated by a business's operating and investing activities are the key driver of its distributions to equity holders.
- In summary, while the basic theory of equity valuation is quite straightforward, the devil is in forecasting the future cash distributions to equity holders.
- There are many different equity valuation formulas floating around academia and practice.
 - These formulas implicitly use different variables to forecast future distributions to equity holders (e.g., "EBITDA", "NOPAT").
 - These substitutions can be justifiable if done in a way that maintains consistency with the underlying dividend discounting model.

Limitations of Accounting Information

- In order to think about the limitations of accounting, it is useful to introduce a "perfect accounting" benchmark.
- Let's start by considering a bank savings account.
 - In a bank savings account, an initial amount is invested in order to generate a future stream of interest.
 - Over a period of time, interest is earned on the account and contributions or withdrawals can be made from the account.
 - The ending balance in a savings account is equal to the beginning balance plus interest earned less any withdrawals:

Ending Balance = Beginning Balance + Interest – Withdrawals

Rearranging gives

$$\text{Interest} = \text{Withdrawals} + \text{Increase in Balance}$$

Limitations of Accounting Information

- The key measure of investment performance for a savings account is the interest rate earned on the balance, computed as

Interest Rate = Interest / Beginning Balance

= (Withdrawals + Increase in Balance) / Beginning Balance

- The reason accounting works so well in this case is because we know exactly how much interest has accrued over any time period.
- Equivalently, at any point in time, we know exactly what the account is worth.
- Now extend the same logic to an equity investment.
- Simply replace the savings account balance with the book value of equity and the savings account withdrawals with the distributions of equity.

Limitations of Accounting Information

- Under clean surplus accounting we get:

$$\text{Net Income} = \text{Distributions to Equity} + \text{Increase in Equity}$$

- Following the same procedure as we did for the savings account to compute the rate of return on the equity investment gives

$$\text{Return on Equity} = \text{Net Income} / \text{Beginning Equity}$$

$$= (\text{Distributions to Equity} + \text{Increase in Equity}) / \text{Beginning Equity}$$

- The return on equity (ROE) perfectly measures the economic rate of return on the equity investment only if the accounting rules perfectly measure the income earned over a period or, equivalently, if the accounting rules can perfectly measure the amount of the equity investment at a point in time.

Limitations of Accounting Information

- To illustrate how ROE is affected by imperfections in accounting measurements, we will introduce some new notation.
- Let's assume a perfect accounting system:

Economic Income = Distributions to Equity + Increase in Investment

- The underlying economic rate of return is given by

**Economic Rate of Return = Economic Income/Beginning Investment
=(Distributions to Equity + Increase in Investment)/Beg. Investment**

- Now define ε as the *measurement error* in equity. It is the difference between the book value of equity, as computed by the imperfect accounting system, and the true value of Investment, computed with our hypothetical perfect accounting system:

$$\varepsilon = \text{Equity} - \text{Investment}$$

Limitations of Accounting Information

- Solving for the relation between accounting income and economic income gives

$$\begin{aligned}\text{Net Income} &= \text{Distributions to Equity} + \text{Increase in Equity} \\ &= \text{Distributions to Equity} + \text{Increase in Investment} + \text{Increase in } \varepsilon \\ &= \text{Economic Income} + \text{Increase in } \varepsilon\end{aligned}$$

- So ROE can be expressed as

$$\text{ROE} = (\text{Economic Income} + \text{Increase in } \varepsilon) / (\text{Beg. Investment} + \text{Beg. } \varepsilon)$$

- Measurement error in equity has a two-pronged effect in distorting ROE relative to the economic rate of return.
 1. Changes in the measurement error between two dates are reflected in the numerator.
 2. The level of measurement error at the beginning of the period is reflected in the denominator.

Aggressive Accounting

- The term *aggressive accounting* is applied to the situation where the net assets of the firm are overstated, by either overstating assets or understating liabilities.
 - It is the most common type of accounting manipulation that occurs in practice.
 - Opportunistic managers often use temporarily aggressive accounting when they would otherwise fall short of important earnings targets, such as meeting bonus plan thresholds or meeting analysts' forecasts.
 - Managers at WorldCom capitalized almost \$10 billion of operating costs in PP&E during 1999 and 2000, only have it all reverse in 2001, precipitating WorldCom's bankruptcy.

Conservative Accounting

- The term *conservative accounting* is applied to the situation where the net assets of the firm are understated, by either understating assets or overstating liabilities (it is just a flipside of aggressive accounting).
- Opportunistic managers can use temporarily conservative accounting to temporarily avoid regulatory scrutiny for excess profits or to create "cookie jar" reserves that can be used to boost future profitability.
- GAAP are guided by the conservatism convention, which encourages the understatement, but discourages the overstatement, of assets (e.g. requirement that R&D expenditures be immediately expensed).

Effects of Measurement Error on ROE

	Change in $\varepsilon < 0$ (Net Income Understated)	Change in $\varepsilon = 0$ (Net Income Correct)	Change in $\varepsilon > 0$ (Net Income Overstated)
Beg. $\varepsilon < 0$ (equity understated)	Effect ambiguous Permanently conservative accounting with increasing investment	ROE > ERR Permanently conservative accounting with constant investment	ROE > ERR Reversal of temporarily conservative accounting Permanently conservative accounting with declining investment
Beg. $\varepsilon = 0$ (equity correct)	ROE < ERR Origination of temporarily conservative accounting	ROE = ERR Perfect accounting	ROE > ERR Origination of temporarily aggressive accounting
Beg. $\varepsilon > 0$ (equity overstated)	ROE < ERR Reversal of temporarily aggressive accounting Permanently aggressive accounting with declining investment	ROE < ERR Permanently aggressive accounting with constant investment	Effect ambiguous Permanently aggressive accounting with increasing investment

The effects of Accounting measurement error (ε) on Beginning Equity, Net Income, and ROE, Along with Associated Accounting Scenarios

Measurement Error Caused by GAAP Annuity Method of Depreciation

- The annuity method, or compound interest method, of depreciation has been discussed and illustrated in US accounting textbooks and handbooks for almost 100 years.
- It gives rise to an increasing periodic charge → compatible with capital budgeting methods for evaluating investment decisions.

Annuity Method of Depreciation

Example

- Suppose a company purchase a depreciable asset on 1 January, Year 1 at a cost \$15,850.
- It has a useful life of four years and no estimated salvage value.
- When making the purchase decision, the company anticipated that the use of the asset would generate a revenue (cash) inflow of \$5000 each year, assumed to occur at the end of the year.
- The discount rate that equates the cost of the asset to the present value of future cash flows is 10%.
- Assume that depreciation is the company's only expense for the year.

Example (continued)

Straight-line depreciation

- If the company were to record straight-line depreciation, its four years' income statements would appear as follows:

	1	2	3	4
Revenue (\$)	5000	5000	5000	5000
Depreciation expense	<u>3963</u>	<u>3963</u>	<u>3963</u>	<u>3961</u>
Net income (\$) (A)	<u>1037</u>	<u>1037</u>	<u>1037</u>	<u>1039</u>
Initial investment (\$) (B)	15,850	11,887	7924	3961
Less: depreciation expense	<u>3963</u>	<u>3963</u>	<u>3963</u>	<u>3961</u>
Ending investment balance (\$)	<u>11,887</u>	<u>7924</u>	<u>3961</u>	<u>0</u>
Return on investment (%) ($A \div B$)	6.5	8.7	13.1	26.2

Example (continued)

Annuity method of depreciation

- Suppose, instead, that the company records depreciation by a method that actually implies a 10% annual return, sometimes called the 'annuity method' or 'compound interest method'.

	1	2	3	4
Revenue (\$)	5000	5000	5000	5000
Depreciation expense	<u>3415</u>	<u>3756</u>	<u>4132</u>	<u>4545</u>
Net income (\$) (A)	<u>1585</u>	<u>1244</u>	<u>868</u>	<u>455</u>
Initial investment (\$) (B)	15,850	12,435	8679	4547
Less: depreciation expense	<u>3415</u>	<u>3756</u>	<u>4132</u>	<u>4545</u>
Ending investment balance (\$)	<u>12,435</u>	<u>8679</u>	<u>4547</u>	<u>2</u>
Return on investment (%) (A ÷ B)	10	10	10	10

Summary

Straight-line Depreciation

- Clearly, the rising annual return on investment in straight-line depreciation case is an illusion.
- A constant numerator (Net income) is divided by a declining denominator (Initial investment) to produce a rising annual return on investment.

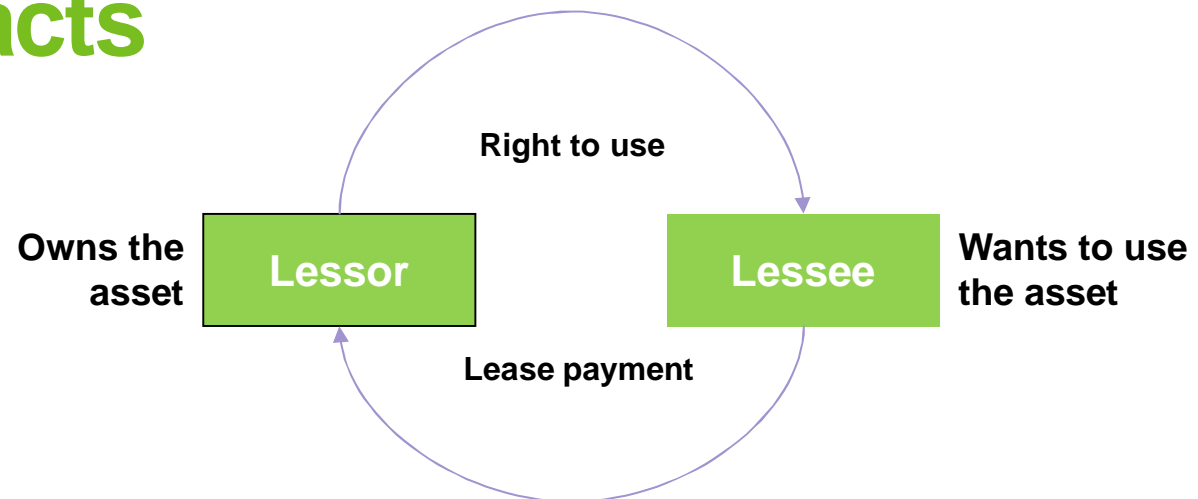
Annuity Method of Depreciation

- The amount of the annual depreciation rises each year; thus, the declining numerator (Net income) is divided by a correspondingly declining denominator (Initial investment).

The *Implicit* Depreciation

- Another way of looking at the 'annuity method' is that the depreciation expense each year represents the implicit depreciation when one calculates the present value of the stream of annual cash flows.
- This present value becomes the cost the company is willing to pay for the asset in order to achieve the required return on investment.
- The 'annuity method' is not an acceptable method in US or IFRS financial reporting, primarily because it is too subjective. Yet all depreciation methods are subjective.

Lease contracts



- The most common technique for implementing off-balance-sheet financing is the operating lease.
- A lease contract conveys the right to use an asset in exchange for a fee (the lease payment).
- The lessor typically retains legal title to the assets which reverts to the lessor at the end of the lease term. The asset's expected fair value at the end of the lease is the residual value.
- At its inception, a lease is a mutually unperformed contract meaning that neither party has yet performed all of the duties called for in the contract.
- The accounting for unperformed contracts is controversial.

Lessee accounting: US GAAP Criteria for Capital Lease Treatment

If, at inception, the lease satisfies any one or more of the following criteria, it must be treated as a capital lease on the books of the lessee:

- The lease transfers ownership of the asset to the lessee at the end of the lease term.
- The lease contains a bargain purchase option.
- The non-cancelable lease term is 75% or more of the estimated economic life of the leased asset.
- The present value of the minimum lease payments equals or exceeds 90% of the current fair market value of the leased asset.

Evolution of lease accounting:

Why lessees like the operating lease approach

- The operating approach does not reflect the cumulative economic liability for all future lease payments on the balance sheet.
- Keeping the lease obligation (and asset) off of the balance sheet may:
 - Reduce the likelihood of debt covenant violation.
 - Improve the ability to obtain additional loans in the future.
 - Improve financial performance ratios like the total asset turnover ratio
- However, GAAP does require footnote disclosure of this off-balance sheet lease obligation.

Lessee accounting: Capital lease treatment illustrated

Lessee Company signs a five-year noncancellable lease with Lessor Company on January 1, 2011, when the lease begins. Several other facts pertain to the lease:

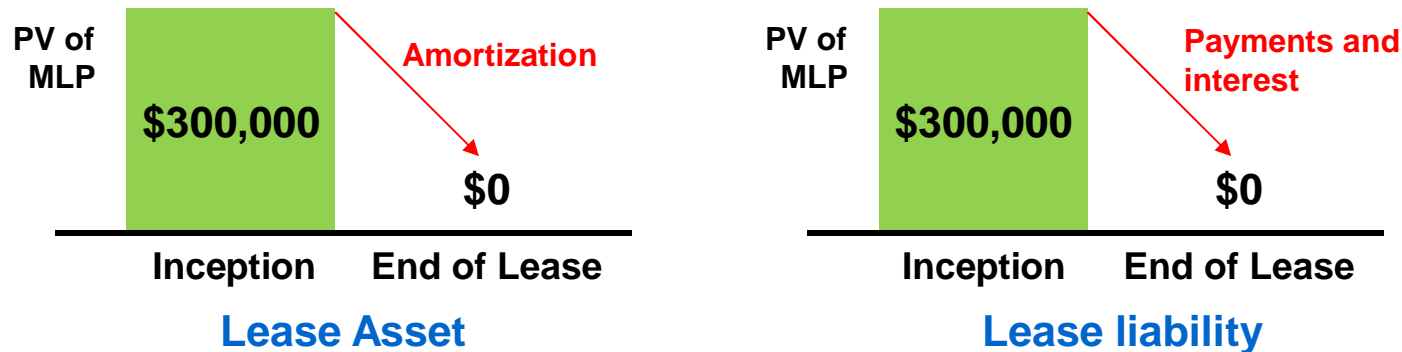
1. The lease calls for five payments of \$79,139.18 to be made at the end of each year.
2. The leased asset has a fair value of \$315,041.60 on January 1, 2011.
3. The lease has no renewal option, and possession of the asset reverts to the lessor on January 1, 2016.
4. Lessee Company regularly uses the straight-line method to depreciate assets of this type that it owns.
5. The leased asset has an expected economic life of six years.
6. Assume that Lessee Company's incremental borrowing rate is 10% and the lessee can't determine the lessor's implicit rate of return on the lease.

Present value of minimum lease payments	=	Minimum lease payment	X	Present value factor for an ordinary annuity for five years at 10%
\$300,000	=	\$79,139.18	X	3.79079

$$\$300,000 = \frac{\$79,139.18}{(1 + 10\%)^1} + \frac{\$79,139.18}{(1 + 10\%)^2} + \frac{\$79,139.18}{(1 + 10\%)^3} + \frac{\$79,139.18}{(1 + 10\%)^4} + \frac{\$79,139.18}{(1 + 10\%)^5}$$

Lessee accounting: Capital lease accounting overview

- The balance sheet amount shown for the lease asset and liability are equal only at the inception and at the end of the lease:



- The leased asset is amortized over time using a depreciation schedule for assets of this type.
- The lease obligation is reduced in accordance with the payment schedule once interest is accrued using the effective interest method.

Lessee accounting: Effective interest method

Date	(a) Total Payment	(b) Interest Expense*	(c) Principal Reduction†	(d) Lease Obligation Balance	(e) Depreciation of Asset	(f) Total Annual Capital Lease Expense (Col. [b] + Col. [e])
1/1/11				\$300,000.00		
12/31/11	\$ 79,139.18	\$30,000.00	\$ 49,139.18	250,860.82	\$ 60,000.00	\$ 90,000.00
12/31/12	79,139.18	25,086.08	54,053.10	196,807.72	60,000.00	85,086.08
12/31/13	79,139.18	19,680.77	59,458.41	137,349.31	60,000.00	79,680.77
12/31/14	79,139.18	13,734.93	65,404.25	71,945.06	60,000.00	73,734.93
12/31/15	79,139.18	7,194.12‡	71,945.06	—	60,000.00	67,194.12
	<u>\$395,695.90</u>	<u>\$95,695.90</u>	<u>\$300,000.00</u>	<u>\$ -0-</u>	<u>\$300,000.00</u>	<u>\$395,695.90</u>

* Column (d) for preceding year times 10%.
† Column (a) minus Column (b).
‡ Rounded.

= \$250,860.82 x 10%

= \$79,139.18 - \$19,680.77

Lessee accounting: Annual cost of leased asset

Date	(a) Total Payment	(b) Interest Expense*	(c) Principal Reduction†	(d) Lease Obligation Balance	(e) Depreciation of Asset	(f) Total Annual Capital Lease Expense (Col. [b] + Col. [e])
1/1/11				\$300,000.00		
12/31/11	\$ 79,139.18	\$30,000.00	\$ 49,139.18	250,860.82	\$ 60,000.00	\$ 90,000.00
12/31/12	79,139.18	25,086.08	54,053.10	196,807.72	60,000.00	85,086.08
12/31/13	79,139.18	19,680.77	59,458.41	137,349.31	60,000.00	79,680.77
12/31/14	79,139.18	13,734.93	65,404.25	71,945.06	60,000.00	73,734.93
12/31/15	79,139.18	7,194.12‡	71,945.06	—	60,000.00	67,194.12
	<u>\$395,695.90</u>	<u>\$95,695.90</u>	<u>\$300,000.00</u>	<u>\$ -0-</u>	<u>\$300,000.00</u>	<u>\$395,695.90</u>

* Column (d) for preceding year times 10%.
† Column (a) minus Column (b).
‡ Rounded.

= \$300,000/5 years

Lessee accounting: Capital lease journal entries

- At inception, when the lease contract is signed:

DR Leased asset –capital lease
CR Obligation under capital lease

PV of MLP ————
 ———— \$300,000
 ———— \$300,000

- ◆ At the end of 2011:

DR Obligation under capital lease	\$49,139.18	
DR Interest expense	30,000.00	
CR Cash		\$79,139.18

DR Depreciation expense –capital lease	\$60,000.00	
CR Accumulated depreciation –capital lease		\$60,000.00

- ◆ Interest expense at the end of 2012:

DR Obligation under capital lease	\$54,053.10	
DR Interest expense	25,086.08	
CR Cash		\$79,139.18

Evaluating effects of lease accounting on ratios and income

On December 31, 2014, Thomas Henley, financial vice president of Kingston Corporation, signed a noncancelable three-year lease for an item of manufacturing equipment. The lease called for annual payments of €41,635 per year due at the end of each of the next three years. The leased equipment's expected economic life was four years. No cash changed hands because the first payment wasn't due until December 31, 2015.

Henley was talking with his auditor that afternoon and was surprised to learn that the lease qualified as a capital/finance lease and would have to be put on the balance sheet. Although his intuition told him that capitalization adversely affected certain ratios, the size of these adverse effects was unclear to him. Because similar leases on other equipment were up for renewal in 2015, he wanted a precise measure of the ratio deterioration. "If these effects are excessive," he said, "I'll try to get similar leases on the other machinery to qualify as operating leases when they come up for renewal next year."

Assume that the appropriate rate for discounting the minimum lease payments is 12%. Also assume that the asset Leased equipment under capital leases will be depreciated on a straight-line basis.

Evaluating effects of lease accounting on ratios and income

Required

1. Prepare an amortization schedule for the lease.
2. The effect of lease capitalization on the current ratio worried Henley. Before factoring in capital lease signed on December 31, 2014, Kingston Corporation's current ratio at December 31, 2014, was:

$$(\text{Current assets } \text{€}500,000)/(\text{Current liabilities } \text{€}294,118)=1.7$$

Once this lease is capitalized on December 31, 2014, what is the adjusted December 31, 2014, current ratio?

3. Henley was also concerned about the effect that lease capitalization would have on net income. He estimated that if the lease previously described were treated as an operating lease, 2015 pre-tax income would be €225,000. Determine the 2015 pre-tax income on a capital lease basis if this lease were treated as a capital lease and if the leased equipment were depreciated on a straight-line basis over the life of the lease.

Solution

Requirement 1:

The present value of the minimum lease payments at the inception of the lease is €100,000, i.e., €41,635 x 2.40183. The amortization schedule for the lease is shown below.

Date	Annual lease payment	Interest	Reduction of lease obligation	Balance of lease obligation
				100,000
12/31/2015	41,635	12,000	29,635	70,365
12/31/2016	41,635	8,444	33,191	37,174
12/31/2017	41,635	4,461	37,174	0

Solution

Requirement 2:

The adjusted current ratio at December 31, 2011 is:

$$\text{Current assets } \text{€}500,000 / (\text{Current liabilities } \text{€}294,118 + \text{€}29,635) = 1.544$$

The portion of the December 31, 2015, payment representing principal reduction is a current liability at December 31, 2014.

Solution

Requirement 3:

Pre-tax income on a capital lease basis would be:

Income on operating lease basis	€225,000
Less: Excess of capital lease over operating lease expense	<u>3,698*</u>
Capital lease pre-tax income	€221,302

*Computation:

Depreciation: €100,000/3	€33,333
2015 interest expense	<u>12,000</u>
Capital lease expense	45,333
Operating lease expense	<u>41,635</u>
Excess of capital lease expense over operating lease expense	€3,698

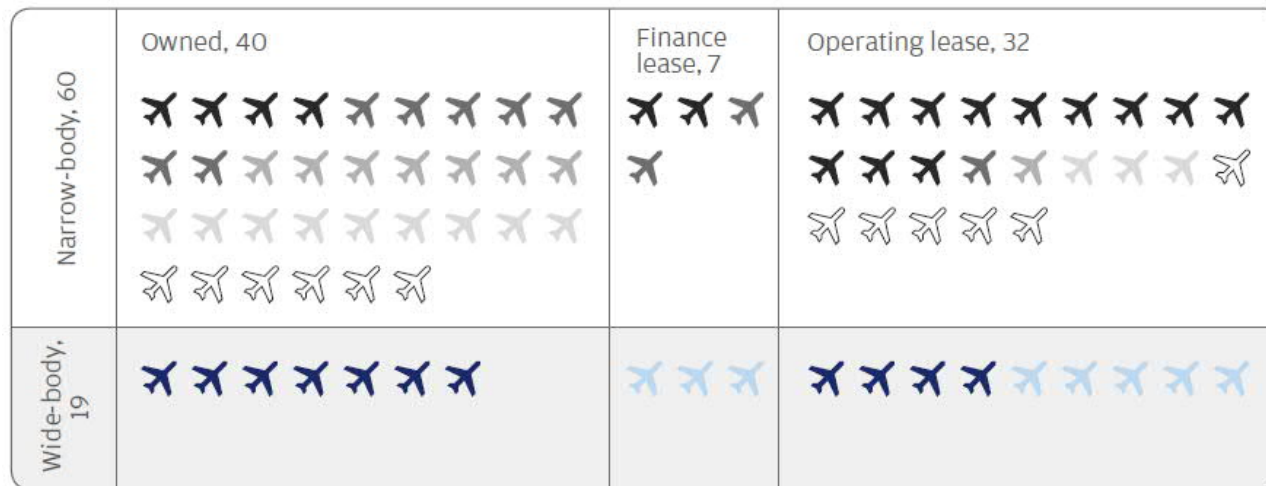
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2 Aircraft and other intangible and tangible assets and leasing arrangements

i Aircraft and other intangible and tangible assets, and leasing arrangements include particularly notes related to aircraft fleet. Notes related to the aircraft operated by the Group, both owned and leased aircraft under different kind of lease arrangements as well as aircraft classified as held for sale, are combined in this section so that the general view of the fleet would be easier to perceive. **i**

The assets owned and leased by Finnair consist mostly of aircraft operated by Finnair and Norra. Approximately half of the fleet operated is owned by Finnair. More detailed information regarding owned aircraft is found in Note 2.1 and regarding leased aircraft in Note 2.2.

Fleet



- A350 (11) ■ A330 (8) ■ A321 (18) ■ A320 (10) ■ A319 (8)
- E190 Norra operated (12) □ ATR Norra operated (12)

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2.2 Leasing arrangements

A The Group as lessee

Lease agreements for tangible assets, where a substantial part of the risks and rewards of ownership are transferred to the Group, are classified as finance leases. Finance leases are capitalised at the commencement of the lease term at the lower of the fair value of the leased property and the present value of the minimum lease payments. A corresponding sum is recognised as a finance lease liability in the interest-bearing liabilities. The lease payments are allocated between interest expenses and the reduction of the outstanding liability. Assets acquired under finance lease arrangements are depreciated over the shorter of the useful life of the asset or the lease term.

Lease arrangements, where the lessor retains a substantial part of the risks and rewards of ownership, are classified as operating leases. Payments under operating leases are charged to the income statement over the lease term to lease payments for aircraft (not included in operational EBITDAR) or to other rents for facilities, purchased traffic, wet leases and temporary aircraft leases.

The Group as lessor

Agreements, where the Group is the lessor, are accounted for as operating leases, when a substantial part of the risks and rewards of ownership are not transferred to the lessee. The assets are included in the tangible assets and they are depreciated during their useful life. Depreciation is calculated using the same principles as the tangible assets for own use. Under the provisions of certain aircraft lease agreements, the lessee is required to pay periodic maintenance reserves which accumulate funds for aircraft maintenance. Advances received for maintenance are recognised as liability, which is charged, when maintenance is done. The rents for premises and aircraft are recognised in the income statement as other operating income over the lease term.

Sale and leaseback transactions

If a sale and leaseback transaction results in a finance lease agreement, the difference between the selling price and the carrying amount of the asset sold is deferred and amortised over the lease period. If a sale and leaseback transaction results in an operating lease agreement, the difference between the selling price and the carrying amount of the asset sold is recognised in the income statement when the selling price is based on fair value. Otherwise the sales gain or loss is deferred and amortised over the lease period. **A**

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Operating Leases

Other lease arrangements

Minimum lease payments for irrevocable lease agreements, Group as lessee

EUR mill.	Aircraft		Premises and land		Other equipment	
	2017	2016	2017	2016	2017	2016
less than one year	146.6	125.6	23.0	22.4	6.8	5.7
1-5 years	551.2	465.3	78.3	83.4	8.4	9.6
more than 5 years	465.9	478.9	149.4	168.9		
Total	1,163.6	1,069.9	250.7	274.7	15.1	15.3

The Group has leased premises as well as aircraft and other fixed assets with irrevocable lease agreements. These agreements have different terms of renewal and other index-linked terms and conditions. The Group has leased 32 aircraft on leases of different tenors.

Minimum lease payments for irrevocable lease agreements, Group as lessor

EUR mill.	Aircraft		Premises	
	2017	2016	2017	2016
less than one year		43.1	3.0	5.2
1-5 years		166.5	11.4	20.3
more than 5 years		28.6	15.6	35.3
Total		238.2	30.1	60.8

The Group has leased premises with irrevocable lease agreements. These agreements have different terms of renewal and other index-linked terms and conditions. Lease agreements of 24 aircraft operated by Norra became internal leases when Norra transferred to the full ownership of Finnair in November 2017.

IFRS 16 Leases

- International Financial Reporting Standard 16 Leases (IFRS 16) sets out the principles for the recognition, measurement, presentation and disclosure of leases.
- The objective is to ensure that lessees and lessors provide relevant information in a manner that faithfully represents those transactions.
- This information gives a basis for users of financial statements to assess the effect that leases have on the financial position, financial performance and cash flows of the entity.
- IFRS 16 is effective for annual periods beginning on or after 1 January 2019.

IFRS 16 Leases

Lessee accounting

- IFRS 16 introduces a single lessee accounting model and requires a lessee to recognise assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value.
- A lessee is required to recognise a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments.
- Assets and liabilities arising from a lease are initially measured on a present value basis.

IFRS 16 Leases

Lessor accounting

- IFRS 16 substantially carries forward the lessor accounting requirements in IAS 17.
- Accordingly, a lessor continues to classify its leases as operating leases or finance leases, and to account for those two types of leases differently.

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IFRS 16 Leases

The new leasing standard, published in January 2016 and endorsed by EU, will be effective from 2019 onwards. Finnair expects to adopt the standard from 2019 onwards, and plans to apply the full retrospective method. IFRS 16 replaces the previous standard (IAS 17 Leases).

Finnair expects that the new standard will have a significant impact on its financial statements and key ratios. The present value of the future operating lease payments for aircraft, real estate and other operating lease arrangements will be recognised as right-of-use assets and interest-bearing liabilities in the balance sheet. Currently, future lease payments are presented in the notes as operating lease commitments at their nominal value. The currently reported lease commitments at the end of 2017 amounted to 1,429 million euros (see note 2.2 Leasing arrangements for more detail). Based on Finnair's preliminary evaluation, service contracts that relate to the usage of airports and terminals (HEL hub) do not qualify as lease arrangements for IFRS 16 purposes.

The leasing standard will also impact Finnair's income statement. In the future, operating lease cost will be divided into the depreciation of the right-of-use asset (affecting the comparable operating result) and interest cost associated with the liability (affecting finance net). The interest cost for the liability is at its highest in the beginning of the lease term, decreasing towards the end of the term as the lease liability is amortised. Currently, lease expenses are accrued over the lease term primarily on a straight line basis and recognised in the operating result as lease payments for aircraft and other rents, according to the lease contract terms. In addition to impact on operating result and EBITDA, also cash flow from operating activities will increase, as the amortisation of lease liabilities is transferred from operating activities to financing activities in cash flow.

The new standard will have significant impact on Finnair's balance sheet -related KPIs, such as the equity ratio and gearing. On the other hand, Finnair currently discloses a key ratio called "Adjusted gearing", which takes future operating lease payments into account in the following way: aircraft lease costs for the last twelve months are multiplied by 7 and added to the interest-bearing net debt (see Balance sheet: "Additional information to Balance sheet: Interest-bearing net debt and adjusted gearing").

Although the assets associated with operating leases will be denominated in Euros when converted into right of use assets, the majority of Finnair's aircraft lease contracts are payable in US dollars. This will result in an increase of the foreign exchange exposure in Finnair's balance sheet. The company is investigating options to mitigate the effects of this volatility.