Chapter 9

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INCOME TAXES

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LEARNING OUTCOMES

- describe the differences between accounting profit and taxable income, and define key terms, including deferred tax assets, deferred tax liabilities, valuation allowance, taxes payable, and income tax expense;
- explain how deferred tax liabilities and assets are created and the factors that determine how a company’s deferred tax liabilities and assets should be treated for the purposes of financial analysis;
- calculate the tax base of a company’s assets and liabilities;
- calculate income tax expense, income taxes payable, deferred tax assets, and deferred tax liabilities, and calculate and interpret the adjustment to the financial statements related to a change in the income tax rate;
- evaluate the effect of tax rate changes on a company’s financial statements and ratios;
- distinguish between temporary and permanent differences in pre-tax accounting income and taxable income;
- describe the valuation allowance for deferred tax assets—when it is required and what effect it has on financial statements;

CONTENTS

ACCOUNTING PROFITS AND TAXABLE INCOME

depends on country

Accounting Profit:
Amount reported in accordance with accounting standards (also known as pretax income).

Taxable Income:
Portion of income subject to income taxes under jurisdiction.

Because of different guidelines for how income is reported on financial statements and how it is measured for income tax purposes, accounting profits and taxable income may differ.

ACCOUNTING PROFITS AND TAXABLE INCOME

Taxable income is the basis for income tax payable (a liability) or recoverable (an asset).

When taxable income is greater than accounting profit:

- Actual income taxes payable will exceed the financial accounting income tax expense (determined based on accounting profit).
- Deferred tax assets (DTA) arise. firm will get benefit in future
  - DTA: an excess amount is paid for income taxes (taxable income higher than accounting profit) and the company expects to recover the difference during the course of future operations.
  - DTA: an increase in taxes saved in the future period due to a *temporary* tax difference. future benefit

Valuation allowance: a reserve account created against DTA.

- Based on the likelihood of realizing the DTA in future accounting periods.

Tax base: Amount at which the asset or liability is valued for *tax purposes*. based on tax rule

Carrying amount: Amount at which the asset or liability is valued according to accounting principles.

Once company receive cash consider as taxable revenue there's diff btw accounting revenue vs. taxable revenue

- A company rents out an empty space to a client. Rental income is $10,000 per month. *At the end of Year1, the client paid $10,000 in advance for the next month rent*. Therefore, taxable income = 13*10,000 = $130,000; accounting income = 12*10,000 = $120,000 ($10,000 is not yet recognized as income). Assume Year 1 expense is $50,000.
- Tax rate = 30%

Year	Accounting revenue	Taxable revenue	Excess of Tax over accounting	Pre-tax accounting income (assume)	Taxable income
1	$120,000 12x10,000	$130,000 13x10,000 1-month paid in advance	$10,000	$70,000	$80,000
2	$120,000	$110,000 1 month already paid last year	-$10,000	$70,000	$60,000 lower than pretax accounting income by 20k
	$240,000	$240,000	0	$140,000	$140,000

Year	Asset	Liability	Equity	
1	3,000 10,000 x 30% Deferred tax asset paid more than recorded accounting income	24,000 Income tax payable (30%*80,000) from taxable income	-21,000	Income tax expense = 30%*70,000
2	-3,000 Deferred tax asset company utilize the benefit	18,000 Income tax payable (30%*60,000)	-21,000	Income tax expense = 30%*70,000

ACCOUNTING PROFITS AND TAXABLE INCOME

When accounting profit is greater than taxable income:

- Financial accounting income tax expense exceeds income taxes payable.
- Deferred tax liabilities arise.
  - DTL: an increase in taxes payable in the future period due to a *temporary* tax difference.

tax loss carry forward: when a company experiences a loss in the current period that may be used to reduce future taxable income.

can use tax loss 5 year carried forward

depreciation rate $\frac{1}{5} = 20\%$

cost

- A company purchases an equipment of $100,000. Useful life is 5 years. Residual value is 5,000.The company uses a straight-line method to for depreciation expense. However, for tax purposes, the company chooses to use *double-declining method* for its depreciation. Tax rate = 30%

↳ 2 x 20% = 40%

Year	Accounting depreciation	Taxable depreciation	Excess of Tax over accounting	Pre-tax accounting income	Taxable income
	same every single periods	40% x 100,000	40,000 - 19,000		less than 100,000 - 21,000
1	$19,000 $\frac{100000-5000}{5}$	$40,000	60000 $21,000	$100,000	$79,000
2	$19,000	$24,000	40% x (100k - 40k) remaing value ~~$13,000~~ 5000 Mounifudi!	$100,000	$87,000 100,000 - 13,000
3	$19,000	$14,400	-$4,600	$100,000	$104,600
4	$19,000	$8,640	-$10,360	$100,000	$110,360
5	$19,000	$7,960	-$11,040	$100,000	$111,040

sum : same for the 5 yrs (total depre)

Year	Asset	Liability		Equity
1		23,700 based on tax income Income tax payable (30%*79,000)	6,300 DTL you need to pay more in the future (30%*21,000)	-$30,000 in P/L Income tax expense =30%*100,000
2		26,100 Income tax payable (30%*87,000)	3,900 DTL (30%*13,000)	-30,000 Income tax expense = 30%*100,000

In income statemend & PPE in BS ⇒ use the same accounting depreciation

ACCOUNTING PROFITS AND TAXABLE INCOME

Differences between accounting profit and taxable income can occur in several ways:

- Revenues and expenses being recognized in one period for accounting purposes and a different period for tax purposes
- Specific revenues and expenses being recognized for accounting purposes and not for tax purposes, or not recognized for accounting purposes but recognized for tax purposes

  e.g. car cost 1.5 mm — there is diff
  but country allows to recognize as taxable only 1.2 mm
- The carrying amount and tax base of assets and/or liabilities differ
- Deductibility of gains and losses varying for accounting and income tax purposes
- Tax loss carry-forwards
- Adjustments of reported financial data from prior years not being recognized equally for accounting and tax purposes or recognized in different periods

ACCOUNTING PROFITS AND TAXABLE INCOME: EXAMPLE

Assume a company owns equipment purchased at the beginning of the 2018 fiscal year for £20,000. For simplicity, assume a salvage value of £0 at the end of the equipment's useful life. Assume a tax rate of 30%.

- Accounting standards permit equipment to be depreciated on a straight-line basis over a 10-year period; annual depreciation will be £2,000 (£20,000 ÷ 10).
- Tax standards in the jurisdiction specify that equipment should be depreciated on a straight-line basis over a 7-year period; annual depreciation will be £2,857 (£20,000 ÷ 7).

ACCOUNTING PROFITS AND TAXABLE INCOME: EXAMPLE

Period Ending 31 March (£ millions)	2018	2017	2016
Accounting profit prior to depreciation expense	£28,700	£17,280	£6,700
Depreciation expense	– 2,000	– 2,000	– 2,000
Profit before tax	26,700	15,280	4,700
Income taxes based on accounting profit before tax	£8,010	£4,584	£1,410
Taxable income prior to depreciation expense	£28,700	£17,280	£6,700
Depreciation expense	– 2,857	– 2,857	– 2,857
Taxable income	25,843	14,423	3,843
Income taxes payable	7,753	4,327	1,153
Difference	£257	£257	£257

lower

depreciation based on accounting vs. tax

higher

£

30% (2,857 - 2,000)

ACCOUNTING PROFITS AND TAXABLE INCOME: EXAMPLE

Year	Asset	Liability		Equity
2016		+1,153 Income tax payable (30%*3,843)	+257 DTL 30%*(4,700-3,843)	-1,410 Income tax expense = (4,700*30%)
2017		+4,327 Income tax payable (30%*14,423)	+257 DTL 30%*(15,280-14,423)	-4,584 Income tax expense = (15,280*30%)
2018		+7,753 Income tax payable (30%*25,843)	+257 DTL 30%*(267,00-25,843)	-8.010 Income tax expense = (26,700*30%)

Amount of DTL (Balance as of Yearend)
2016: 257
2017: 257+257 = 514
2018: 257+257+257 = 771

ACCOUNTING PROFITS AND TAXABLE INCOME: EXAMPLE (CONTINUED)

(£ millions)	**2018**	**2017**	**2016**
Income tax payable (based on tax accounting)	£7,753	£4,327	£1,153
Change in deferred tax liability	257	257	257
Income tax (based on financial accounting)	£8,010	£4,584	£1,410

(£ millions)	**2018**	**2017**	**2016**
Equipment value for accounting purposes (carrying amount)	£14,000	£16,000	£18,000
Equipment value for tax purposes (tax base)	11,429	14,286	17,143
Difference	£2,571	$\boxed{£1,714}$	£857

higher because of tax rule

Amount of deferred tax liability	£2,571 × 30% = £771	£1,714 × 30% = £514	£857 × 30% = £257

TAX BASE OF ASSET: EXAMPLE SOLUTION

What are the tax base and carrying amounts for each item?

Company ABC capitalized development costs of €3 million as asset and amortized €500,000 of this amount during the year. For tax purposes, amortization of 25% per year is allowed.

- Carrying amount is (€3,000,000 – €500,000) = €2,500,000.
- Tax base is [€3,000,000 – (25% × €3,000,000)] = €2,250,000.

there's diff btw accounting and tax

Company ABC incurred €500,000 in research costs, all of which were expensed in the current fiscal year for financial reporting purposes. Assume that applicable tax legislation requires research costs to be expensed over a four-year period rather than all in one year.

- Carrying amount is €0. (the full amount has been expensed for financial reporting purposes in the year in which it was incurred)
- Tax base is (€500,000 – €500,000/4) = €375,000.

TAX BASE OF LIABILITY: EXAMPLE SOLUTION

What are the tax base and carrying amounts for each item?

1. Company ABC received in advance interest of €300,000. The applicable tax legislation requires that interest be recognized as part of taxable income on the date of receipt of payment.

   - Carrying amount of the liability is €300,000.
   - Tax base is €0.

2. Company ABC recognized €10 million for rent received in advance from a lessee for an unused warehouse building. Rent received in advance is deferred for accounting purposes but taxed on a cash basis.

   - Carrying amount of the liability is €10 million.
   - Tax base is €0.

3. Company ABC made donations of €100,000 in the current fiscal year. The donations were expensed for financial reporting purposes but are not tax deductible based on applicable tax legislation.

   - No liability, tax base is €0, difference is permanent. (no reversed in the future)

TAX RATE CHANGES

based on current tax rate

change DTA & DTL

- Measurement of deferred tax assets and liabilities is based on current tax law.

- If there are subsequent changes in tax laws or new income tax rates, existing deferred tax assets and liabilities must be adjusted for the effects of these changes.

- Resulting effects of the changes are included in determining accounting profit in the period of change.

TAX RATE CHANGES: EXAMPLE

(£ Millions)	Year 3	Year 2	Year 1
Equipment value for accounting purposes (carrying amount)	£14,000	£16,000	£18,000
Equipment value for tax purposes (tax base)	11,429	14,286	17,143
Difference	£2,571	£1,714	£857

Amount of deferred tax liability

£2,571 × 30% = £771

£1,714 × 30% = £514

£857 × 30% = £257

Assume that the taxing authority changed the income tax rate to 25% for year 3.

Amount of deferred tax liability

£2,571 × 25% = £643

TEMPORARY AND PERMANENT DIFFERENCES

Creation of a deferred tax asset or liability occurs:

- Only if the book/tax difference is **temporary** (i.e., if it reverses itself at some future date) and
- Only to such an extent that the balance sheet item is expected to create future economic benefits or costs for the company.

Permanent differences between tax and financial reporting of revenue (expenses) are differences that *will not* be reversed at some future date.

- They do not give rise to deferred tax.
- They result in a difference between the company's effective tax rate and statutory tax rate.
- Permanent differences typically include:
  - Income or expense items not allowed by tax legislation.
  - Tax credits for some expenditures that directly reduce taxes.

TEMPORARY AND PERMANENT DIFFERENCES: EXAMPLES

Reason for Difference	Type of Difference?
Items of income recognized in financial reports are not taxable.	no DTA / DTL no refersal in future Permanent
Expenses recognized in financial reports are not deductible for tax purposes.	Permanent
Rate of depreciation or amortization differs between financial reports and taxes.	Temporary
Timing of expensing an expenditure differs between financial reports and taxes.	Temporary
Timing of recognizing revenue differs between financial reports and taxes.	Temporary

TREATMENT OF TEMPORARY DIFFERENCES

Balance Sheet Item	Carrying Amount vs. Tax Base	Results in Deferred Tax Asset/Liability
Asset	Carrying amount > Tax base	Deferred tax liability
Asset	Carrying amount < Tax base	Deferred tax asset
Liability	Carrying amount > Tax base	Deferred tax asset
Liability	Carrying amount < Tax base	Deferred tax liability

VALUATION ALLOWANCE

Valuation allowance

- A contra-asset account.
- *A reserve created against deferred tax assets* based on the likelihood of realizing the benefit of the deferred tax assets in future accounting periods.
- Will realize the benefit if in a tax-paying position.

Deferred tax assets must be assessed at each balance sheet date

- If there are doubts that the benefits will be realized, then the carrying amount is reduced to the expected recoverable amount.
  - Reduces deferred tax asset
  - Reduces income
- Should circumstances subsequently change and suggest that the future will lead to recovery of the deferral, the reduction may be reversed.
  - Reversal increases deferred tax asset and income.

VALUATION ALLOWANCE: EXAMPLE DISCLOSURE

As of	2018	2017
Deferred tax assets		
Net operating loss and tax credit carryforwards	$ 1,417	$ 3,426
Accrued salaries, wages, and benefits	163	211
Other accrued liabilities	35	59
Other	80	86
Gross deferred tax assets	1,695	3,782
Less valuation allowance	(228)	(2,321)
Deferred tax assets, net of valuation allowance	1,467	1,461
Deferred tax liabilities		
Debt discount	(77)	(145)
Property, plant, and equipment	(173)	(300)
Unremitted earnings on certain subsidiaries	(82)	(123)
Product and process technology	(62)	(85)
Other	(54)	(59)
Deferred tax liabilities	(448)	(712)
Net deferred tax assets	$ 1,019	$ 749
Reported as		
Deferred tax assets	$ 1,022	$ 766
Deferred tax liabilities (included in other noncurrent liabilities)	(3)	(17)
Net deferred tax assets	$ 1,019	$ 749

good for firm with net profit, not net loss

VALUATION ALLOWANCE: EXAMPLE DISCLOSURE

"As of August 30, 2018 and August 31, 2017, we had a valuation allowance of $28 million and $1.42 billion, respectively, against U.S. net deferred tax assets, primarily related to net operating loss and tax credit carryforwards. Income taxes on U.S. operations for 2017 and 2016 were substantially offset by changes in the valuation allowance. We had valuation allowances against net deferred tax assets, primarily related to net operating loss carryforwards, for our subsidiaries in Japan and for our other foreign subsidiaries, of $192 million and $8 million, respectively, as of August 31, 2017. Changes in 2018 in the valuation allowance were due to the provisional estimate for the release of the valuation allowance in the U.S. as a result of the Tax Act, adjustments based on management's assessment of foreign net operating losses that are more likely than not to be realized, and changes in foreign currency. As a result of internal restructuring during the year, we have concluded that the possibility of utilizing certain of our net operating loss carryovers are now remote. As such, we have removed $119 million of deferred tax assets that were previously fully reserved with a valuation allowance."

Excerpt from notes to financial statements

Micron Technology (2018), 10-K

SUMMARY

- Differences between the recognition of revenue and expenses for tax and accounting purposes may result in taxable income differing from accounting profit.
- Temporary differences between accounting profit and taxable income (i.e., differences that will reverse over time) give rise to deferred tax assets and/or liabilities.
- Permanent differences between accounting profit and taxable income (i.e., differences that will not be reversed at some future date) do not give rise to a deferred tax asset or liability.
- Deferred tax assets must be assessed for their prospective recoverability. If it is probable that they will not be recovered at all or partly, the carrying amount is reduced.
- Under U.S. GAAP, reduction of deferred tax assets is done through the use of a valuation allowance (a contra-account), with potential for subsequent reversal.

APPENDIX

VALUATION ALLOWANCE: EXAMPLE DISCLOSURE

For the year ended	2018		2017		2016	
U.S. federal income tax (provision) benefit at statutory rate	$ (3,677)	25.7 %	$ (1,819)	35.0 %	$ 98	35.0 %
Foreign tax rate differential	2,572	(18.0)%	1,571	(30.2)%	(300)	(106.8)%
Repatriation Tax related to the Tax Act	(1,049)	7.3 %	—	— %	—	— %
Remeasurement of deferred tax assets and liabilities related to the Tax Act	(179)	1.3 %	—	— %	—	— %
Change in valuation allowance	2,079	(14.5)%	64	(1.2)%	63	22.4 %
Change in unrecognized tax benefits	60	(0.4)%	12	(0.2)%	52	18.5 %
Tax credits	90	(0.6)%	66	(1.3)%	48	17.1 %
Other	(64)	0.4 %	(8)	0.1 %	20	7.0 %
Income tax (provision) benefit	$ (168)	1.2 %	$ (114)	2.2 %	$ (19)	(6.8)%

The reduction in the valuation allowance reduced the income tax provision (i.e. tax expense).
A lower income tax provision results in higher reported net income.

Actual taxable income are not affected by a valuation allowance. The valuation allowance is established for financial reporting.

INCOME STATEMENT: EXAMPLE

MICRON TECHNOLOGY, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS
(in millions except per share amounts)

A lower income tax provision results in higher reported net income on the financial statements.

Portions omitted

For the year ended	August 30, 2018	August 31, 2017	September 1, 2016
Operating income	14,994	5,868	168
Interest income	120	41	42
Interest expense	(342)	(601)	(437)
Other non-operating income (expense), net	(465)	(112)	(54)
	14,307	5,196	(281)
Income tax provision	(168)	(114)	(19)
Equity in net income (loss) of equity method investees	(1)	8	25
Net income (loss)	14,138	5,090	(275)
Net income attributable to noncontrolling interests	(3)	(1)	(1)
Net income (loss) attributable to Micron	$ 14,135	$ 5,089	$ (276)

VALUATION ALLOWANCE: EXAMPLE DISCLOSURE

As of		2018		2017
Deferred tax assets				
Net operating loss and tax credit carryforwards	$	1,417	$	3,426
Accrued salaries, wages, and benefits		163		211
Other accrued liabilities		35		59
Other		80		86
Gross deferred tax assets		1,695		3,782
Less valuation allowance		(228)		(2,321)
Deferred tax assets, net of valuation allowance		1,467		1,461
Deferred tax liabilities				
Debt discount		(77)		(145)
Property, plant, and equipment		(173)		(300)
Unremitted earnings on certain subsidiaries		(82)		(123)
Product and process technology		(62)		(85)
Other		(54)		(59)
Deferred tax liabilities		(448)		(712)
Net deferred tax assets	$	1,019	$	749
Reported as				
Deferred tax assets	$	1,022	$	766
Deferred tax liabilities (included in other noncurrent liabilities)		(3)		(17)
Net deferred tax assets	$	1,019	$	749

BALANCE SHEET: EXAMPLE

MICRON TECHNOLOGY, INC.

CONSOLIDATED BALANCE SHEETS
(in millions except par value amounts)

As of		August 30, 2018		August 31, 2017
Assets				
Cash and equivalents	$	6,506	$	5,109
Short-term investments		296		319
Receivables		5,478		3,759
Inventories		3,595		3,123
Other current assets		164		147
Total current assets		16,039		12,457
Long-term marketable investments		473		617
Property, plant, and equipment		23,672		19,431
Intangible assets		331		387
Deferred tax assets		1,022		766
Goodwill		1,228		1,228
Other noncurrent assets		611		450
Total assets	$	43,376	$	35,336

COMPARISON OF IFRS AND U.S. GAAP

Topic	IFRS	U.S. GAAP
Revaluation of plant, property, and equipment and intangible assets	Deferred tax recognized in equity	Not applicable because revaluation is prohibited.
Measurement of deferred taxes	Tax rates and tax laws that have been enacted or substantively enacted	Use of substantively enacted rates is not permitted. Tax rate and tax laws used must have been enacted.

COMPARISON OF IFRS AND U.S. GAAP

Topic	IFRS	U.S. GAAP
Recognition of deferred tax assets	Recognized if it is probable (more likely than not) that sufficient taxable profit will be available against which the temporary difference can be utilized.	Recognized in full but is then reduced by a valuation allowance if it is more likely than not that some or all of the deferred tax asset will not be realized.
Presentation of deferred tax assets and liabilities: Offsetting	Only offset in certain situations	All deferred taxes are offset and presented as a single amount

1

Using the straight-line method of depreciation for reporting purposes and accelerated depreciation for tax purposes would most likely result in a: (1 Point)

- valuation allowance.
- income tax payable. X
- deferred tax asset. X
- ✓ temporary difference.

liability

sum of accounting depreciation & taxable depreciation will be equal at the end of useful life of an asset

2

In early 2018 Sanborn Company must pay the tax authority €37,000 on the income it earned in 2017. This amount was recorded on the company's December 31, 2017 financial statements as: (1 Point)

- ✓ taxes payable.
- income tax expense.
- a deferred tax liability.

3

When accounting standards require recognition of an expense that is not permitted under tax laws, the result is a: (1 Point)

- temporary difference.
- ✓ permanent difference.
- deferred tax liability.
- deferred tax asset.

4

When accounting standards require an asset to be expensed immediately but tax rules require the item to be capitalized and amortized, the company will most likely record: (1 Point)

- no deferred tax asset or liability.
- a deferred tax liability.
- ✓ a deferred tax asset.

accounting income < tax income → excess of tax over accounting

5

A company receives advance payments from customers that are immediately taxable but will not be recognized for accounting purposes until the company fulfills its obligation. The company will most likely record: (1 Point)

- no deferred tax asset or liability.
- a deferred tax asset.
- a deferred tax liability.

6

Cinnamon, Inc. recorded a total deferred tax asset in Year 3 of $12,301, offset by a $12,301 valuation allowance. Cinnamon most likely: (1 Point)

- has an equal amount of deferred tax assets and deferred tax liabilities.
- fully utilized the deferred tax asset in Year 3.
- expects not to earn any taxable income before the deferred tax asset expires.

The tax effects of temporary differences that give rise to deferred tax assets and liabilities are as follows ($ thousands):

	Year 3	Year 2
Deferred tax assets:		
Accrued expenses	$8,613	$7,927
Tax credit and net operating loss carryforwards	2,288	2,554
LIFO and inventory reserves	5,286	4,327
Other	2,664	2,109
Deferred tax assets	18,851	16,917
Valuation allowance	(1,245)	(1,360)
Net deferred tax assets	$17,606	$15,557
Deferred tax liabilities:		
Depreciation and amortization	$(27,338)	$(29,313)
Compensation and retirement plans	(3,831)	(8,963)
Other	(1,470)	(764)
Deferred tax liabilities	(32,639)	(39,040)
Net deferred tax liability	$(15,033)	$(23,483)

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A reduction in the statutory tax rate would most likely benefit the company's?

(1 Point)

	Year 3	Year 2
Deferred tax assets:		
Accrued expenses	$8,613	$7,927
Tax credit and net operating loss carryforwards	2,288	2,554
LIFO and inventory reserves	5,286	4,327
Other	2,664	2,109
Deferred tax assets	18,851	16,917
Valuation allowance	(1,245)	(1,360)
Net deferred tax assets	$17,606	$15,557
Deferred tax liabilities:		
Depreciation and amortization	$(27,338)	$(29,313)
Compensation and retirement plans	(3,831)	(8,963)
Other	(1,470)	(764)
Deferred tax liabilities	(32,639)	(39,040)
Net deferred tax liability	$(15,033)	$(23,483)

- income statement and balance sheet.
- income statement but not the balance sheet.
- balance sheet but not the income statement.

The statutory tax rate is the rate imposed by law on taxable income that falls within a given tax bracket.

8

Zimt AG presents its financial statements in accordance with US GAAP. In Year 3, Zimt discloses a valuation allowance of $1,101 against total deferred tax assets of $19,201. In Year 2, Zimt disclosed a valuation allowance of $1,325 against total deferred tax assets of $17,325. The change in the valuation allowance most likely indicates that Zimt's: (1 Point)

- deferred tax liabilities were reduced in Year 3.
- expectations of future earning power has increased.
- expectations of future earning power has decreased.