

# Accounting for Income Taxes

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## Objectives:

- Understand the differences between tax accounting and financial accounting
  - Timing: temporary differences
  - Scope: permanent differences
- Understand the effects of events on income taxes
  - Net operating losses
  - Valuation allowances
  - Changes in tax rates
- Interpret income tax disclosures



# GAAP vs. Tax Code

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## Examples of differences:

- **Revenue Recognition:** rental fees collected in advance
  - ▶ GAAP : Rent revenue recognized when earned (passage of time)
  - ▶ Tax Code: Rent collections considered as taxable income
- **Matching principle:** depreciation of fixed assets
  - ▶ GAAP: Different depreciation methods allowed, e.g. straight line
  - ▶ Tax Code: MACRS (accelerated); no residual value
- **Other items:** Revenue from municipal bonds
  - ▶ GAAP: Revenue recognized as interest is earned (passage of time)
  - ▶ Tax Code: Interest revenue exempt from federal taxes

**What factors cause differences in accounting rules for GAAP and the Tax Code?**



# Timing Difference: Illustration

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A company bought a \$100,000 asset in the beginning of 2000.

	<b>Financial reporting</b>	<b>Tax reporting</b>
<b>Asset life</b>	3 years	2 years
<b>Depreciation rate</b>	Straight line	MACRS: 60%, 40%
<b>Residual value</b>	\$10,000	\$0

<b>Schedule of depreciation</b>				
Year	Financial reporting depreciation	Tax reporting depreciation	Depreciation difference	Accumulated difference, end of the year
2000	30,000	60,000	30,000	30,000
2001	30,000	40,000	10,000	40,000
2002	30,000	-	(30,000)	10,000
disposal	10,000	-	(10,000)	-



# Accounting for Timing Differences: 2000

Income before depreciation is \$81,500 for both financial and tax reporting. The tax rate is 30% with no anticipated change.

	<b>Financial reporting</b>	<b>Tax reporting</b>
NI before Depr	81,500	81,500
- Depreciation	(30,000)	(60,000)
=NI before taxes	51,500	21,500

Tax Payable

6,450

Tax Expense

15,450

Tax Expense = Tax Payable + ???

How should we account for ???



# Two Methods of Accounting for Timing Differences

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- Japan, Germany: ??? = part of income tax expense
  - ▶ Essentially, GAAP = Tax Code
  - ▶ No matching distortions: revenue and expenses also computed under the Tax Code
- United States: ??? = recognize as "deferred tax liability"
  - ▶ Good matching: Tax expense is matched in the year pre-tax income is recognized (2000)
  - ▶ Deferred: part of income tax expense won't be paid in 2000, but some time in the future

$$\begin{array}{l} \text{Income tax expense} \\ \text{(NI)} \end{array} = \begin{array}{l} \text{Current tax expense} \\ \text{(Taxes payable)} \end{array} + \begin{array}{l} \text{Deferred tax expense} \\ \text{(\Delta Deferred Tax Liability)} \end{array}$$

$$\begin{aligned} \text{Deferred tax expense} &= \text{Timing difference} * \text{tax rate} \\ &= \Delta \text{Deferred Tax Liability} \end{aligned}$$



# Deferred Taxes over Time

Deferred taxes caused by timing differences are temporary, because they reverse over time.

Year	Financial reporting depreciation	Tax reporting depreciation	Depreciation difference	Deferred Tax Expense	Acc. Depr Difference, (EB)	Def Tax Liability (EB)
2000	30,000	60,000	30,000	9,000	30,000	9,000
2001	30,000	40,000	10,000	3,000	40,000	12,000
2002	30,000	-	(30,000)	(9,000)	10,000	3,000
disposal	10,000	-	(10,000)	(3,000)	-	-

- Timing differences that *create / increase* deferred taxes over time are called *originating* differences
- Timing differences that *remove / decrease* deferred taxes over time are called *reversing* differences



# Deferred Tax Liability: Summary

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Deferred tax liabilities arise/increase when a timing difference leads to:

**Taxable income < Pretax Income**

- GAAP recognizes more revenue than the Tax Code
  - ▶ Revenue recognition before cash collection (e.g., unremitted earnings of foreign subsidiaries)
- GAAP matches less expenses than the Tax Code
  - ▶ Expenses matched in the Tax Code are accelerated relative to GAAP (e.g., MACRS vs. straight line)

Deferred tax liabilities decrease (to zero) when the above events reverse in the future.



## Deferred Tax Asset: Illustration

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Suppose that total rent collected in 2000 was \$100,000, of which \$50,000 was rent paid in advance for 2001. Tax rate is 30%.

	<b>Financial reporting</b>	<b>Tax reporting</b>
NI before taxes	50,000	100,000
Tax Payable		30,000
Tax Expense	15,000	

$$\begin{aligned} \text{Tax Expense} &= \text{Taxes Payable} - \text{Deferred Tax Asset} \\ 15,000 &= 30,000 - 15,000 \end{aligned}$$

A deferred tax asset of \$15,000 was created in 2000. The reversal occurs in 2001 when the (financial) revenue for 2001 is recognized.





# Deferred Tax Asset: Summary

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Deferred tax assets arise/increase when a timing difference leads to:

**Taxable income > Pretax Income**

- GAAP recognizes less revenue than the Tax Code
  - ▶ Revenue recognition after cash collection (e.g., rent collected in advance)
- GAAP matches more expenses than the Tax Code
  - ▶ Expenses matched before cash outflow in the Tax Code (e.g., warranty expense before servicing warranty claims)

Deferred tax assets decrease (to zero) when the above events reverse in the future.



# Tax Effects of Marketable Securities

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Suppose the value of stock you own goes up by \$100. Are you \$100 richer?

In the U.S., capital gains and losses are not recognized for tax purposes unless realized. We will soon see that unrealized gains and losses from certain securities are recognized in the financial statements.

These unrealized gains and losses carry with them an obligation to pay more or less in future taxes, i.e. deferred liabilities or assets.

Consider GE Capital (1999, \$ in millions)

	1999	1998
Net deferred tax liability ( <b>asset</b> )		
Net unrealized gains on securities	<95>	665



# Deferred Tax Disclosures: Intel

**Explain how timing differences arise from the following deferred tax components:**

Significant components of the Company's deferred tax assets and liabilities at fiscal year end were as follows:

(In Millions)	2002	2001
<b>Deferred tax assets</b>		
Accrued compensation and benefits	\$ 185	\$ 120
Accrued advertising	96	102
Deferred income	183	207
Inventory valuation and related reserves	184	209
Interest and taxes	29	89
Impairment losses on investments	256	179
Other, net	203	52
	1,136	958
<b>Deferred tax liabilities</b>		
Depreciation	(949)	(461)
Acquired intangibles	(110)	(280)
Unremitted earnings of certain subsidiaries	(122)	(164)
Unrealized gains on investments	(35)	(30)
Other, net	(16)	(10)
	(1,232)	(945)
<b>Net deferred tax asset (liability)</b>	<b>\$ (96)</b>	<b>\$ 13</b>



# Intel's Deferred Tax Liability Accounts

	Assets		=	Liabilities		+	S. E.	
	Cash	Oth Assets	=	inc tax pay.	net def taxes		OE	RE
BB <sup>1</sup>				998	(13)			
Tax Expense <sup>2</sup>				977	110			(1,087)
Tax Payments <sup>3</sup>	(475)			(475)				
Security Gains <sup>4</sup>		37			13		24	
Tax benefit of stock plans <sup>5</sup>				(270)			270	
Other (plug) <sup>6</sup>				(73)	(14)			
EB <sup>1</sup>				1,157	96			

<sup>1</sup>From the Balance Sheet; Negative indicates net deferred tax asset

<sup>2</sup>The Income Statement reports 1,087 as the total tax expense. The components come from the tax footnote. Payable (542+143+292) + Deferred (91+19)

<sup>3</sup>475 cash payment from the SCF.

<sup>4</sup>The 24 (43-19). is from the Statement of Stockholder's Equity and is net of tax. With a tax rate of 35% the gross change is (37) and the deferred tax is (13).

<sup>5</sup>From the Statement of Stockholder's Equity. Trust us on the offset to "Other Equity."

<sup>6</sup>Like it says, a plug.



# Permanent Differences: Illustration

Suppose that in addition to \$50,000 in taxable income, Baxter earns \$10,000 in interest every year from its municipal bonds. Interest from municipal bonds are NOT taxable. There are no timing differences. Tax rate is 30%.

Define

$$\text{Effective tax rate} = \frac{\text{Income tax expense}}{\text{Pretax Income}}$$

Year	NI before Tax	Taxable Income	Income tax Expense	Taxes due	Cumulative Income Diff	Effective Tax rate
2000	60,000	50,000	15,000	15,000	10,000	25%
2001	60,000	50,000	15,000	15,000	20,000	25%
2002	60,000	50,000	15,000	15,000	30,000	25%

**The “effective tax rate” decreased by 5% in 2000 through 2002. In addition, the difference between taxable income and pretax income never reverses.**



# Permanent Differences: Summary

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- Permanent differences are never expected to reverse (e.g., income that is never taxable)
- Permanent differences do not create deferred taxes. However, they do change the *effective tax rate*, because the basis of income tax expense is adjusted for permanent differences.
  - Tax-exempt revenues (e.g. interest income from state and local bonds) decreases the effective tax rate
  - Non-tax deductible expenses (e.g. government fines) increases the effective tax rate

$$\text{Income tax expense} = (\text{Pretax income} - \text{Tax-exempt revenues} + \text{Nondeductible expense}) * \text{tax rate}$$

$$\text{Effective tax rate} = \text{Income tax expense} / \text{Pretax financial income}$$



# Tax Deductions from Net Operating Losses (NOL)

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When TAXABLE income is negative, a firm generates a "Net Operating Loss (NOL)." These losses can be used to reduce past and /or future taxable income.

- **Net operating loss carryback:** generates a refund of income taxes paid from two years back, in the order of years, starting with the earliest year.

$$\begin{array}{rclclcl} & \mathbf{A} & & & \mathbf{L} & & + & & \mathbf{E} \\ \text{Income tax refund receivable} & = & & & & & & & -(- \text{Income tax expense}) \end{array}$$

- **Net operating loss carryforward:** reduces taxable income in subsequent years, up to a maximum of 20 years. Leftover NOL carryback may be carried forward, but once an NOL is carried forward, it can no longer be carried back.

NOL carryforwards are recorded as deferred tax assets.

$$\begin{array}{rclclcl} & \mathbf{A} & & & \mathbf{L} & & + & & \mathbf{E} \\ \text{Deferred tax asset} & = & & & & & & & -(-\text{Income tax expense}) \end{array}$$



# Valuation Allowance

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If the benefits of a deferred tax *asset* are not likely to be realized, the value of the deferred tax asset balance should be reduced by a "valuation account".

- Conservatism: no symmetric adjustment for deferred tax *liabilities*, except when future tax rates decrease
- Application of judgement: "likely" means more than 50% probability of occurring.
- Bad signal: implies that management believes not enough earnings in the future
- Valuation allowance increases the effective tax rate when recognized (because it increases income tax expense).





# Changes in Tax Rates

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When tax rates change, deferred tax assets and liabilities are readjusted to reflect the taxes that will be incurred *when the reversals occur (proper matching)*.

- The new tax rate is used for timing differences as soon as the law instituting the tax change is enacted, even if the law is not yet officially in force.
- Adjustments to previous balances are disclosed as additions or reductions in the deferred tax component of income tax expense.
- Changes in tax rates affect the effective tax rates from the year new tax rates are enacted until the new tax rates are in effect.

$$\text{Income tax expense} = \text{Current tax expense} + \text{Deferred tax expense} + \text{DTA/L adj.}$$

(current rate)                      (future rate)                      (future-current)

In 1993, Congress increased in federal tax rate for corporations, from 34% to 35%. Ford reported a decrease in income taxes of \$199 million in 1993 due to the rate adjustment. *Why was the effect of a tax rate increase negative for Ford?* (Ford had a deferred tax asset.)



# Disclosure Rules

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- **Income statement**

- ▶ Separate Income tax expense = current tax expense + deferred tax expense  
(May be done in the footnotes)

- **Footnotes**

- ▶ Components of income tax expense
- ▶ Components of deferred tax expense
  - Timing differences for the period
  - NOL credits
  - Effects of changes in tax rate
  - Changes in valuation allowance
- ▶ Components of deferred tax assets and deferred tax liabilities
- ▶ Reconciliation of statutory federal tax rate with effective tax rate

- **Balance sheet**

- ▶ Current and non-current components of deferred tax assets and liabilities netted out.

- **SCF**

- ▶ Deferred tax expense added back to net income in operating section

