



Amortized Assets

- plant assets such as property, plant and equipment (PPE)
 - depreciate
- intangible assets –
 - amortized
- natural resources –wasting assets
 - deplete

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Issues in Property, Plant and Equipment

- Acquisition Cost
- Valuation
- Depreciation
- Repairs and Betterments
- Disposals
- a company may continue to value it at cost or revalue the asset to its fair value after the initial period

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Cost of Plant Assets

- Cost of outside purchases
- + Price Paid
- + Custom Duties
- + Insurance and Transportation
- + Installation costs

List price of the weaving machine	TL40.000
Less: Cash discount	<u>800</u>
Net Price	39.200
Insurance and Freight	4.000
Custom Duties	200
Installation	<u>800</u>
Cost of the weaving machine	TL 44.200

Cost of Plant Assets

Cost of Land:

- Price Paid
- + Commissions
- + Legal Fees
- + Cost of Grading and Clearing the Property

Cost of Plant Assets

Construction of Plant Assets:

- Land Site Selection Expenditures
- + Engineering Fees
- + Employee Wages
- + Charges for Other Company Assets
- + Interest Paid during the Construction Period

Depreciation

- Systematic allocation of cost of property plant and equipment over their useful lives
- Causes of Depreciation
 - Decline in productive capacity
 - Obsolescence

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Recording of Allocation in each period

- At each adjusting entry period, cost of assets are systematically allocated to the period as depreciation or amortization expense
- Recall the adjusting entry:

Date	Account Title and Description	Debit	Credit
31-Dec-07	Depreciation Expense-Building	250	
	Accum. Depreciation-Building		250

Adjusting entry for depreciation.
non-cash expense account in the income statement,
contra-asset account in the balance sheet

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Book Value of an Asset

**BOOK VALUE (CARRYING VALUE)=
Cost - Accumulated Depreciation**

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Depreciation

- estimate the useful life of the asset
- estimate the residual (salvage) value
- select the appropriate depreciation method
 - several alternative methods of computing depreciation
 - can use different methods for different types of assets
 - consistency

aim is to allocate the cost of the asset over its useful life

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Estimating Useful Life

- IFRS state that the following factors need to be considered in estimating the useful life:
 - The expected usage of the asset by the company,
 - Expected physical wear and tear,
 - Technical or commercial obsolescence of the assets, or the changes in demand for the product produced by the asset, and
 - Legal or similar limits on the useful life of the asset.

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Estimating Residual Value

- the estimated amount that an entity expects to receive currently when the asset is disposed or sold as if the asset is already of the age and in the condition expected at the end of its useful life
- in some methods used to determine the depreciable amount
- assets with zero book values are fully depreciated

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Depreciation Methods

- **TIME BASED METHODS**
- Straight-line method
- Declining Balance (double declining) method
- **PRODUCTION BASED METHODS**
- Units of Production

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Straight-line Method

Depreciation Expense =
(Cost-Salvage Value i.e. depreciable amount)
 Useful Life(in years or periods)

- same every period
- reflected through the adjusting entries

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Straight-line -example

Cost of the weaving machine: TL 44.200
 Salvage value : TL 1.700
 useful life: 5 years
 Depreciation method:straight line rate = $1/5 = 20\%$ per year

Depreciable Amount = $44.200 - 1.700 = TL 42.500$

Annual Depreciation Expense = $\frac{44.200 - 1.700}{5} = TL 8.500$

Or $TL 42.500 \times 20\% = TL 8.500$

Date	Account Title and Description	Debit	Credit
31-Dec-07	Depreciation Expense	8500	
	Accum. Depreciation-Weaving Machine		8500
	Adjusting entry for depreciation of the weaving machine		

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Depreciation Schedule-St.Line

Year	Depreciable Amount TL	Depreciation Rate	Annual Depreciation TL	Accumulated Depreciation TL	Book Value TL
2007	42.500	20%	8.500	8.500	35.700
2008	42.500	20%	8.500	17.000	27.200
2009	42.500	20%	8.500	25.500	18.700
2010	42.500	20%	8.500	34.000	10.200
2011	42.500	20%	8.500	42.500	1.700

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Declining Balance Method

- Depreciation rate is constant from year to year but the depreciable amount declines every year
- Depreciable Amount = Book Value

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Declining Balance Method-example

Cost of the weaving machine: TL 44.200
 Salvage value : TL 1.700
 useful life: 5 years
 Depreciation method: straight line rate = $1/5 = 20\%$ per year
 double declining = $2 \times 20\% = 40\%$ per year

1st year depreciation expense: TL 44.200 x 40% = TL 17.680

Date	Account Title and Description	Debit	Credit
31-Dec-07	Depreciation Expense	17.680	
	Accum. Depreciation-Weaving Machine		17.680
	Adjusting entry for depreciation of the weaving machine		

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Depreciation Schedule-Double Declining

Year	Depreciable Amount TL	Depreciation Rate	Annual Depreciation TL	Accumulated Depreciation TL	Book Value TL
2007	44.200	40%	17.680	17.680	26.520
2008	26.520	40%	10.608	28.288	15.912
2009	15.912	40%	6.365	34.653	9.547
2010	9.547	40%	3.819	38.472	5.728
2011	5.728	40%	4.028	42.500*	1.700

The arithmetic of declining balance methods would never fully depreciate an asset

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Units of Production Method

Depreciation Cost Per Unit =
 (Cost- Salvage Value)
 Estimated Total Number of Units

Depreciation Expense =
 Actual Usage (in a period)
 x Depreciation Cost per Unit

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Units of Production

Cost of the weaving machine: TL 44.200
 Salvage value : TL 1.700
 useful life: 400.000 hours

Cost per hour = $\frac{44.200 - 1.700}{400.000} = \text{TL } 0,10625/\text{hour}$

Assume that the machine is used for 90.000 hours in 2007

Depreciation Expense = Actual Usage x cost per unit of usage (hour)
 = 90.000 hours x TL 0,10625/ hour = TL 9.562,50

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Depreciation Schedule-Unit of Production

Year	Depreciable Amount TL	Depreciation Per Unit	Actual Usage Hours	Annual Depreciation Expense TL	Accumulated Depreciation TL	Book Value TL
2007	42.500	0,10625	90.000	9.562,50	9.562,50	34.637,50
2008	42.500	0,10625	70.000	7.437,50	17.000,00	27.200,00
2009	42.500	0,10625	80.000	8.500,00	25.500,00	18.700,00
2010	42.500	0,10625	80.000	8.500,00	34.000,00	10.200,00
2011	42.500	0,10625	60.000	6.375,00	40.375,00	3.325,00
2012	42.500	0,10625	20.000	2.125,00	42.500,00	1.700,00

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Impairment in Value of Property, Plant and Equipment

- IFRS requires annual impairment test
- if the carrying value of an asset > recoverable amount, then an impairment loss is recognized in the income statement and an allowance for impairment in value in the balance sheet
- net recoverable amount is the higher of an asset's net selling price or its value in use
- value in use = discounted expected cash flow

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Disposal of Plant Assets

The weaving machine that was purchased in 1 January 2007 for TL 44.200 with a salvage value of TL 1.700 is sold for TL 7.600 on 30 June 2011.

Date	Account Name	Debit	Credit
30-Jun-11	Depreciation Expense	4.250	
	Accumulated Depreciation		4.250

Date	Account Name	Debit	Credit
30-Jun-11	Cash	7.600	
	Accumulated Depreciation	38.250	
	Weaving Machine		44.200
	Gain on Sale of Plant Assets		1.650

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Changes in Depreciation Rates Methods and Salvage Values

- The current and the future depreciation expenses will be adjusted without an effect on the prior periods

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Beker A.S. purchased a machine in January 2005 for TL 150 with a useful life of 5 years with no salvage value. In January 2008 the company decided that the life of the asset is 7 years.

book value of the asset in January 2008 is TL 150 – 90 = TL 60

TL 60 / 4 years (remaining life) = TL 15

Year	Depreciation Expense	Accumulated Depreciation
2005	30	30
2006	30	60
2007	30	90
2008	15	105
2009	15	120
2010	15	135
2011	15	150

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Depreciation and Income Taxes

	Straight line	Double declining
Revenues	5.000	5.000
Expenses	2.500	2.500
Depreciation Expense	200	400
Income Before Tax	2.300	2.100
Income Tax to be paid- 40 % cash	920	840
Cash Advantage		80 less

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Tax Effects leading to deferred taxes

Recall earlier example: Cost 44,200 Salvage 1,700 useful life 5 years

year	straight line	double declining	tax shelter	tax savings
1	8500	17.680	9.180	2.754
2	8500	10.608	2.108	632
3	8500	6.365	(2.135)	(641)
4	8500	3.819	(4.681)	(1.404)
5	8500	4.028	(4.472)	(1.342)
	42500	42.500	0	0

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Capital Expenditures

- subsequent expenditures relating to property plant and equipment
- should be added to the carrying amount of the asset when it is probable that future economic benefits, in excess of the originally assessed standard of performance of the existing assets, will flow to the enterprise

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Capital Expenditure-example

Sanal A.Ş. acquired a polishing machine for TL 16.000 with expected salvage value of TL 1.000 millions and an estimated useful life of 5 years. The company uses straight-line depreciation. During its fourth year of operations, the following expenditures related to the machine were incurred:

oiling and greasing, TL 200
replacing the brushes TL 350

replacement of the main engine for a cost of TL 4.000. As a result of this overhaul, the useful life of the machine was extended from five to seven years. The new salvage value is estimated to be TL 2.000

	Depreciation	Acc. Dep
Year 1	3.000	3.000
Year 2	3.000	6.000
Year 3	3.000	9.000

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Depreciation Expense = $(16.000 - 1.000) / 5 \text{ years} = \text{TL } 3.000$
 Carrying value- beginning of the fourth year = $16.000 - (3 \times 3.000) = \text{TL } 7.000$
 New Depreciable Amount = Carrying value + Capital expenditure - Salvage Value
 = $\text{TL } 7.000 + 4.000 - 2.000 = \text{TL } 9.000$
 New Depreciation Expense = $\text{TL } 9.000 / 4 = \text{TL } 2.250$

	Depreciation Schedule	
	Original	Revised
Year 1	3.000	3.000
Year 2	3.000	3.000
Year 3	3.000	3.000
Year 4	3.000	2.250
Year 5	3.000	2.250
Year 6		2.250
Year 7		2.250
Accumulated		
Depreciation	15.000	18.000
Salvage Value	1.000	2.000
Total Cost	16.000	20.000

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Leasehold Improvements

- Leasehold is the right to use plant assets for a period beyond one year
- Leasehold improvements are permanent attachments or additions made to the leased property by the tenant
- amount of leasehold improvement is amortized periodically
- straight-line depreciation method
- amortized amount is deducted from the leasehold improvements
- period of amortization is either the useful life of the leasehold improvement or the term of the lease whichever is shorter

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Intangible Assets

four criteria for an asset to be recognized as an intangible asset:

- Identifiability-
- Control-
- Future economic benefits-
- Reliable measurement of cost
- recorded at cost initially and then carried at cost less any accumulated amortization and any accumulated impairment losses.
- cost of an intangible asset includes the purchase price, custom duties less discounts and any directly attributable expenditure that is necessary to bring the asset into use

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Intangible Assets

Amortized over their useful life using straight line method:

- Patents
- Copyrights
- Franchises
- Trademarks and Trade names
- Licenses
- Development Costs

Date	Account Title and Description	Debit	Credit
31-Dec-08	Amortization Expense-Patent	3.000	
	Accumulated Amortization -Patents		3.000
	Adjusting entry for amortization of an intangible asset- patent.		

Goodwill - not amortized but tested for impairment annually

Natural Resources

Assets that will be physically consumed and converted into inventory for sale or for use in production

- mines
- oil and gas reserves
- timber

cost of natural resources is determined like the cost of plant assets, and depleted over the useful life of the resource mostly using units of production

Natural Resources-example

Mobak A.Ş. acquires the rights to Mungur Copper Mine for TL 50.000 in 2008.

The mine is believed to contain 10 million tons of copper. The residual value of the mine after all of the copper is removed is estimated to be TL 5.000.

Depletion Rate = Depletion Base / expected amount of reserve
 Depletion Rate = (TL 50.000 – TL 5.000) / 10 million tons
 Depletion Rate= TL 45.000 / 10 million tons= TL 4.500 /million ton

Natural Resources-example

2 million tons are mined in 2008.

Date	Account Title and Description	Debit	Credit
31-Dec-08	Inventory of Copper Deposits	9,000	
	Accumulated Depletion-Mungur Cop.		9,000
	Adjusting entry to record depletion in Mungur Copper for the year 2004		

31 December 2008 balance sheet presentation:
Natural Resources
Mining Properties-Mungur Copper Mine TL 50,000
Less: Accumulated Depletion 9,000
Net TL 41,000

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