

In-kind Gift Estimation Method

Written by Paul Lin

August 1, 2007

The in-kind gifts that we will likely receive are depreciable assets such as equipments, products or systems. If the asset is brand new, then the value is the same as the purchase price. If the asset has been used, we will estimate its depreciation.

In general, there are two depreciation reduction methods: **General Depreciation System** (GDS) and **Alternative Depreciation System** (ADS) [1]. The GDS is commonly used in industries from the tax exempt purpose. Its depreciation mimics an exponentially decaying function. The ADS, on the other hand, provides a longer recovery period and uses only a simple linear depreciation scale. Property that is placed in any tax-exempt use and property used predominantly outside the United States are examples of assets that must be depreciated under ADS.

Table I shows a list of class life (expected life span) and the recovery period using the two methods.

TABLE I

Asset Class	Depreciable Assets Used in Business	Life	GDS ^b	ADS
00.11	Office furniture and equipment	10	7	10
00.12	Information systems, including computers	6	5	5
00.22	Automobiles, taxis	3	5	5
00.23	Buses	9	5	9
00.241	Light general purpose trucks	4	5	5
00.242	Heavy general purpose trucks	6	5	6
00.26	Tractor units for use over the road	4	3	4
10.0	Mining	10	7	10
13.2	Production of petroleum and natural gas	14	7	14
13.3	Petroleum refining	16	10	16
15.0	Construction	6	5	6
22.3	Manufacture of carpets	9	5	9
24.4	Manufacture of wood products	10	7	10
28.0	Manufacture of chemicals and allied products	9.5	5	9.5
30.1	Manufacture of rubber products	14	7	14
32.2	Manufacture of cement	20	15	20
34.0	Manufacture of fabricated metal products	12	7	12
36.0	Manufacture of electronic components, products, and systems	6	5	6
37.11	Manufacture of motor vehicles	12	7	12
37.2	Manufacture of aerospace products	10	7	10
48.12	Telephone central office equipment	18	10	18
49.13	Electric utility steam production plant	28	20	28
49.21	Gas utility distribution facilities	35	20	35

^aPartial listing abstracted from *How to Depreciate Property*, IRS Publication 946, Tables B-1 and B-2, 1998.

^bAlso the GDS property class.

To calculate the depreciation year after year using the GDS, we can use Table II which shows the GDS recovery rates for six classes (i.e. 3, 5, 7, 10, 15 and 20 years).

TABLE II

Year	Recovery Period (and Property Class)					
	3-year ^a	5-year ^a	7-year ^a	10-year ^a	15-year ^b	20-year ^b
1	0.3333	0.2000	0.1429	0.1000	0.0500	0.0375
2	0.4445	0.3200	0.2449	0.1800	0.0950	0.0722
3	0.1481	0.1920	0.1749	0.1440	0.0855	0.0668
4	0.0741	0.1152	0.1249	0.1152	0.0770	0.0618
5		0.1152	0.0893	0.0922	0.0693	0.0571
6		0.0576	0.0892	0.0737	0.0623	0.0528
7			0.0893	0.0655	0.0590	0.0489
8			0.0446	0.0655	0.0590	0.0452
9				0.0656	0.0591	0.0447
10				0.0655	0.0590	0.0447
11				0.0328	0.0591	0.0446
12					0.0590	0.0446
13					0.0591	0.0446
14					0.0590	0.0446
15					0.0591	0.0446
16					0.0295	0.0446
17						0.0446
18						0.0446
19						0.0446
20						0.0446
21						0.0223

Source: *Depreciation*. IRS Publication 534. Washington, D.C.: U.S. Government Printing Office, for 1998 tax returns.

Example of Value Estimation

A typical computer has class life of six years as indicated in Table I, but, the recovery period of the GDS is only five years. This does create a problem in calculating the depreciation. As we take a close look at Table II, we will find that the number of recovery period is actually listed as six years because we count ½ year in the first year, and another ½ year in the last year. This is known as half-year convention. If an asset was placed in service during the year, ½ year of depreciation is allowed. Likewise, if the asset is disposed before the full recovery period, only half the normal depreciation can be taken for that year.

The remaining value of an asset is the depreciation deducted from its purchasing price. For instance, a PC was purchased in August 2005 for \$2000, and it is donated to our college in May 2007. Using Table I (Asset Class 00.12) and Table II (5-year recovery period), the depreciation is calculated and listed as follows:

Calendar Year	Depreciation	Note
2005	0.1000	= 0.2000*0.5
2006	0.3200	= 0.3200*1.0
2007	0.0960	= 0.1920*0.5
TOTAL	0.516	

As a result, the remaining value of the PC is estimated as $\$2000 \times (1-0.516) = \968 .

Recommendation

It is recommended that we use the aforementioned procedure based on the GDS system to estimate the depreciation which leads to the remaining value.

Reference

1. W. G. Sullivan, E. M. Wicks and J. T. Luxjoj, *Engineering Economy*, 13th Edition, Prentice-Hall, 2006. pp. 310-313.