FINPACK®

Center for Farm Financial Management
University of Minnesota

Entering Finance Leases in FINPACK

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When should a lease be recorded on the balance sheet? If a lease is included on the balance sheet, how do you determine the asset value and loan balance? These are frequent questions as the use of leases for machinery, buildings, and other assets becomes more common. Recent changes in accounting standards suggest that many leases are substitutes for purchasing assets and therefore should be listed on the balance sheet.

There are two types of leases: 1) **Operating leases**, which generally have a shorter life than the asset being leased, and 2) **Finance leases**, sometimes called capital leases, which often span a substantial part of the life of the asset. In agriculture, land rental arrangements are the most common type of operating lease. While accounting standards suggest that some operating leases should be listed on the balance sheet, the *Farm Financial Standards Council Guidelines* recommend that land leases be treated as operating expenses rather than balance sheet assets.

Our accounting friends give us no such break on finance leases. A finance lease is often used as a direct substitute for purchasing and financing the asset with borrowed money. Therefore, they should be included on the Balance Sheet according to current accounting guidelines. The major criteria for determining if a lease is a finance lease are:

1. The lease transfers ownership of the property to the lessee at the end of the lease term, or
2. The lessee has an option to purchase the asset that is reasonable certain to be executed, or
3. The lease term covers the major part of the remaining economic life of the asset.

Refer to Appendix G of the *Financial Guidelines for Agriculture* for more information on finance lease criteria.

Once it is decided to place a leased asset[1] on the balance sheet, the question becomes how to value the lease and how to determine the lease liability. The asset value should be the present value of the stream of

[1] The *Financial Guidelines for Agriculture* uses the term “Right of Use Asset” for leased assets entered on the balance sheet.

lease payments. The lease liability is determined by amortizing the lease at the stated interest rate. If an interest rate is not stated in the contract, it is suggested that the current rate for traditional loans for similar assets types be used. Sounds complicated? Fortunately, the FINPACK Loan Calculator can make it easy (or at least easier).

Example

This is the same example illustrated in the Farm Financial Standards Guidelines except we have converted it to January 1 payments for simplicity.

- 5 annual payments of $11,991 with the first payment paid in advance;
- Interest rate of 10%
- Lease commences on January 1, 2022

Asset Valuation

Use the loan calculator to find the present value of the 4 remaining payments:

- First payment date: December 31, 2022
- Payment frequency: Annual
- Loan Period: 4 years
- Scheduled Payment $11,991
- Solve for the present value by clicking = on Amount Borrowed. The present value of the future payments is $38,009.

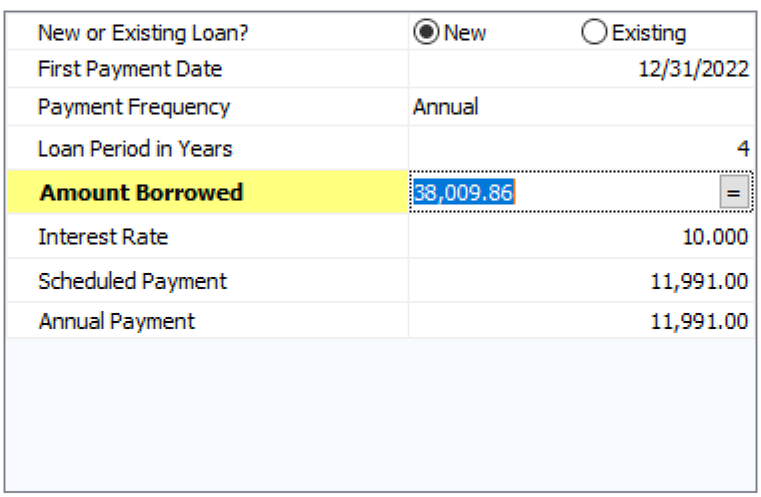

Figure 1: FINPACK Loan Calculator Amortization

The final step is to add the initial payment. The initial balance sheet value of the leased asset is $11,991 plus $38,009 = $50,000.

Description	Model Year	VIN / Serial No.	Year Purchased	Purchase Price	Percent Ownership	Cost Value	Market Value
Other machinery - 2015					100.00	22,439	29,099
Other machinery					100.00	25,243	31,001
Wagon (used at auction)			2014		100.00	5,049	6,548
Skid steer	2014	USE-326E	2016	38,900	100.00	24,246	31,443
Combine					100.00	119,814	132,849
Tractor	2012		2013		100.00	59,787	73,658
Old listing					100.00	154,513	224,283
Planter	2012	Kinze	2017	84,995	100.00	55,765	72,288
John Deere 569	16		2018	41,000	100.00	29,889	37,800
Tractor 4WD	2017		2020	252,500	100.00	252,500	252,500
Tractor Lease	2020		2021	50,000	100.00	50,000	50,000

Figure 2: FINPACK Balance Sheet Machinery Detail List

The recommendation is to amortize or depreciate this value using a straightline approach over the term of the lease. The important thing is that the asset value should be zero at the end of the lease.

Lease Liability

The initial lease liability is the present value of the remaining payments, $38,009 from the previous loan calculator example.

Lender	Description	Interest Rate	Principal Balance	Accrued Interest	Annual P & I Payment	Month Due	Final Year	Principal Due in 12 Months	Interm. Balance
Fifth National Bank	Machinery	4.50	39,340	**2,357**	16,348	**3**	2023	12,767	26,573
Ford Credit	Truck	4.25	6,683		6,841	**1**	2021	6,683	
Fifth National Bank	Oper Refi	6.00	38,411	**3,069**	20,688	**3**	2022	16,070	22,341
Fifth National Bank	Tractor 4WD	3.25	202,000	**8,202**	32,784	10	2027	19,035	182,965
Hometown Implement	Tractr Lease	10.00	38,009	...	11,991 ...	12 ...	2026	8,137	29,872

Figure 3: FINPACK Balance Sheet Intermediate Liabilities Data Entry

It may be helpful to print the Payment Schedule from the loan calculator to determine the principal, interest expense, and the principal balance after each lease payment. Alternatively, the loan calculator can be used each year to calculate the present value of the remaining payments.

Payment Schedule

Date	Payment	Principal Portion	Interest Portion	PrincipalBalance
12/31/2022	11,991.00	8,137.22	3,853.78	29,872.64
12/31/2023	11,991.00	8,962.25	3,028.75	20,910.39
12/31/2024	11,991.00	9,870.92	2,120.08	11,039.47
12/31/2025	12,158.75	11,039.47	1,119.28	0.00

Figure 4: FINPACK Loan Calculator Payment Schedule

Financial Analysis and Cash Flow

Once entered on the balance sheet, it is important not to double count the lease expense. For finance leases, depreciation and interest are the only expenses related to the lease. However, producers are very likely to erroneously include lease payments in operating expenses. Financial lease payments are not expenses and should not be entered as such when completing a financial analysis (Schedule F Cash to Accrual or FINAN) or a cash flow projection. Depreciation expense is calculated based on the change in the asset value. Interest expense needs to be manually added if the producer's records do not include this amount. Interest expense can be taken from the repayment schedule or, if not available, the interest portion of the payment can be calculated based on the principal reduction. For example, for year 1 of this example:

Total lease payment	–	Principal payment	=	Interest expense
$11,991	–	($38,009 - $29,872)	=	$3,854

The Financial Guidelines for Agriculture are published by the Farm Financial Standards Council and can be accessed at https://ffsc.org/.