Real-World Project: Complete LBO Case Study

Project: Retail Company Acquisition Analysis

Scenario

You are an analyst at a mid-market Private Equity firm evaluating the acquisition of **"FashionRetail Co."**, a specialty apparel retailer. Your task is to build a complete LBO model and recommend whether to proceed with the acquisition.

Company Overview

FashionRetail Co.

- **Industry**: Specialty Retail (Apparel)
- **Founded**: 2010
- **Stores**: 150 locations across the US
- **Employees**: 2,500

Current Financials (LTM - Last Twelve Months)

```
Revenue:         $500M
EBITDA:          $75M
EBITDA Margin:   15%
CapEx:           $15M (3% of revenue)
D&A:             $12M
```

Transaction Structure

Proposed Terms:

- **Purchase Price**: 8.0x LTM EBITDA = $600M
- **Transaction Date**: January 1, 2025
- **Holding Period**: 5 years
- **Exit Strategy**: Sale to strategic buyer or IPO

Financing:

- Senior Debt: 4.0x EBITDA @ 6.5% interest
- Subordinated Debt: 1.5x EBITDA @ 10.0% interest
- Equity: Balance (from PE fund)

Your Task

Build a complete LBO model that includes:

1. **Sources & Uses** of funds

2. **Operating Model** (5-year projections)
3. **Debt Schedule** with paydown
4. **Returns Analysis** (IRR and MOIC)
5. **Sensitivity Analysis** on key assumptions
6. **Investment Memo** with recommendation

Operating Assumptions

Base Case:

- Revenue Growth: 6%, 6%, 5%, 4%, 4%
- EBITDA Margin: Improves from 15% to 17% by Year 5
- CapEx: 3% of revenue
- NWC: 10% of revenue
- Tax Rate: 25%
- D&A: 2.5% of revenue

Exit:

- Exit Multiple: 9.0x EBITDA
- Target IRR: 20%+
- Target MOIC: 2.5x+

Building the Model

Step 1: Set Up Your Environment

```
import sys
sys.path.append('..')  # Add parent directory to path

from Module_05_LBO_Modeling.lbo_model import LBOModel
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

Step 2: Initialize the Model

```
# Create LBO model instance
model = LBOModel(
    company_name="FashionRetail Co.",
    transaction_date="2025-01-01"
)
```

Step 3: Set Transaction Assumptions

```
# Entry valuation
model.set_transaction_assumptions(
    entry_ebitda=75,  # $75M
    entry_multiple=8.0
)

print(f"Purchase Price: ${model.purchase_price}M")
```

Step 4: Set Financing Structure

```
# Debt financing
model.set_financing_structure(
    equity_pct=0.40,  # Will be calculated
    senior_debt_multiple=4.0,
    sub_debt_multiple=1.5,
    senior_rate=0.065,
    sub_rate=0.10
)

# Display sources and uses
su = model.build_sources_and_uses()
print("\nSources of Funds:")
print(su['Sources'])
print("\nUses of Funds:")
print(su['Uses'])
```

Step 5: Set Operating Assumptions

```
# Revenue growth and margins
model.set_operating_assumptions(
    revenue_growth_rates=[0.06, 0.06, 0.05, 0.04, 0.04],
    ebitda_margin=0.16,  # Average over period
    tax_rate=0.25,
    capex_pct=0.03,
    nwc_pct=0.10,
    da_pct=0.025
)
```

Step 6: Set Exit Assumptions

```
# Exit valuation
model.set_exit_assumptions(exit_multiple=9.0)
```

Step 7: Build the Model

```
# Generate projections
projections = model.build_operating_model()
debt_schedule = model.build_debt_schedule()

# Calculate returns
returns = model.calculate_returns()

print(f"\nReturns Summary:")
print(f"MOIC: {returns['MOIC']:.2f}x")
print(f"IRR: {returns['IRR']:.1%}")
```

Step 8: Display Full Results

```
# Complete summary
model.display_summary()
```

Analysis Questions

Answer these questions in your investment memo:

1. **Valuation**
    - Is 8.0x EBITDA a fair entry multiple?
    - Compare to industry benchmarks
    - What's the implied premium to revenue?
2. **Returns**
    - Does the deal meet target returns (20% IRR, 2.5x MOIC)?
    - What are the key return drivers?
    - Margin expansion vs revenue growth vs multiple expansion?
3. **Leverage**
    - Is 5.5x Debt/EBITDA reasonable?
    - Can the company service the debt?
    - When will debt be paid down to <3x?
4. **Risks**
    - What if revenue growth is slower?
    - What if margins don't improve?
    - What if exit multiple contracts?
5. **Value Creation**

- Where will value be created?
- What operational improvements are needed?
- What are the exit options?

Sensitivity Analysis

Test different scenarios:

```
# Revenue growth sensitivity
growth_scenarios = {
    'Base': [0.06, 0.06, 0.05, 0.04, 0.04],
    'Bull': [0.08, 0.08, 0.07, 0.06, 0.05],
    'Bear': [0.04, 0.04, 0.03, 0.02, 0.02]
}

results = []

for scenario, growth_rates in growth_scenarios.items():
    test_model = LBOModel("FashionRetail", "2025-01-01")
    test_model.set_transaction_assumptions(75, 8.0)
    test_model.set_financing_structure(0.40, 4.0, 1.5, 0.065, 0.10)
    test_model.set_operating_assumptions(
        growth_rates, 0.16, 0.25, 0.03, 0.10, 0.025
    )
    test_model.set_exit_assumptions(9.0)

    test_model.build_operating_model()
    test_model.build_debt_schedule()
    rets = test_model.calculate_returns()

    results.append({
        'Scenario': scenario,
        'MOIC': rets['MOIC'],
        'IRR': rets['IRR']
    })

sensitivity_df = pd.DataFrame(results)
print("\nScenario Analysis:")
print(sensitivity_df)
```

Deliverables

Create these outputs:

1. **Executive Summary** (1 page)
   - Investment thesis
   - Key metrics
   - Recommendation

2. **Financial Model** (Python notebook)

    - All calculations
    - Clearly commented
    - Reproducible

3. **Sensitivity Analysis**

    - Multiple scenarios
    - Key driver charts
    - Risk assessment

4. **Investment Memo** (3-5 pages)

    - Company overview
    - Transaction structure
    - Financial projections
    - Returns analysis
    - Risks and mitigants
    - Recommendation

Grading Criteria

- **Model Accuracy** (40%): Correct calculations, logical structure
- **Analysis Depth** (30%): Thoughtful insights, comprehensive scenarios
- **Presentation** (20%): Clear charts, professional memo
- **Judgment** (10%): Sound recommendation with good rationale

Bonus Challenges

Advanced:

1. Build a custom debt schedule with cash sweeps
2. Add management rollover equity
3. Model dividend recaps
4. Create a fund-level IRR analysis
5. Build a Monte Carlo simulation

Excel Integration:

- Export model to Excel with formatting
- Create dashboard with charts
- Build sensitivity tables

Sample Solution

A complete solution is available in: `Module_09_Projects/lbo_case_study_solution.py`

But try to build it yourself first!

Real-World Application

This type of analysis is exactly what you'd do in:

- Private Equity firms (deal execution)
- Investment Banking (sell-side / buy-side)
- Corporate Development (M&A evaluation)
- Consulting (transaction advisory)

Time Estimate

- **Model Building**: 3-4 hours
- **Analysis**: 2-3 hours
- **Memo Writing**: 2-3 hours
- **Total**: 7-10 hours

Resources

- Historical retail comps data: `data/retail_comps.csv`
- Industry reports: `resources/retail_industry.pdf`
- Template slides: `templates/investment_memo_template.pptx`

Good luck! Remember: this is a real-world skill that will set you apart in finance.

Questions?

Review these modules if you need help:

- Module 5: LBO Modeling
- Module 3: Data Analysis
- Module 8: Visualization

This project simulates actual work done by PE associates and IB analysts daily.