Vertically integrated companies

- Grow in either direction of its suppliers or its customers.
- Frequently transfer goods to other divisions as well as outside customers.

How do you price goods “sold” within the company?

Illustration J-17
Transfer price - price used to record the transfer between two divisions of a company.

- **Ways to determine** a transfer price:
  1. Negotiated transfer prices.
  2. Cost-based transfer prices.

- **Conceptually** - a negotiated transfer price is best.

- Due to practical considerations, companies often use the other two methods.
Negotiated Transfer Prices

Illustration: Alberta Company makes rubber soles for work & hiking boots.

- Two Divisions:
  - Sole Division - sells soles externally.
  - Boot Division - makes leather uppers for hiking boots which are attached to purchased soles.

- Division managers compensated on division profitability.
- Management now wants Sole Division to provide at least some soles to the Boot Division.

LO 4 Determine a transfer price using the negotiated, cost-based, and market-based approaches.
**Negotiated Transfer Prices**

Computation of the contribution margin per unit for each division when the Boot Division purchases soles from an outside supplier.

<table>
<thead>
<tr>
<th>Boot Division</th>
<th>Sole Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling price of hiking boots</td>
<td>Selling price of sole</td>
</tr>
<tr>
<td>Variable cost of manufacturing boot</td>
<td>Variable cost per sole</td>
</tr>
<tr>
<td>(not including sole)</td>
<td></td>
</tr>
<tr>
<td>Cost of sole purchased from outside suppliers</td>
<td>Contribution margin per unit</td>
</tr>
<tr>
<td>Contribution margin per unit</td>
<td></td>
</tr>
<tr>
<td>Total contribution margin per unit</td>
<td>$45 ($38 + $7)</td>
</tr>
</tbody>
</table>

“What would be a fair transfer price if the Sole Division sold 10,000 soles to the Boot Division?”

**LO 4** Determine a transfer price using the negotiated, cost-based, and market-based approaches.
No Excess Capacity

- If Sole sells to Boot,
  - payment must at least cover variable cost per unit plus
  - its lost contribution margin per sole (opportunity cost).

- The minimum transfer price acceptable to Sole is:

<table>
<thead>
<tr>
<th>Variable Cost</th>
<th>+</th>
<th>Opportunity Cost</th>
<th>=</th>
<th>Minimum Transfer Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>$11</td>
<td>+</td>
<td>$7</td>
<td>=</td>
<td>$18</td>
</tr>
</tbody>
</table>

LO 4 Determine a transfer price using the negotiated, cost-based, and market-based approaches.
Maximum Boot Division will pay is what the sole would cost from an outside buyer: $17

Illustration J-20

LO 4 Determine a transfer price using the negotiated, cost-based, and market-based approaches.
Excess Capacity

- Can produce 80,000 soles, but can sell only 70,000.
- Available capacity of 10,000 soles.
- Contribution margin of $7 per unit is not lost.
- Minimum transfer price acceptable to Sole:

<table>
<thead>
<tr>
<th>Variable Cost</th>
<th>+</th>
<th>Opportunity Cost</th>
<th>=</th>
<th>Minimum Transfer Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>$11</td>
<td></td>
<td>$0</td>
<td>=</td>
<td>$11</td>
</tr>
</tbody>
</table>

LO 4 Determine a transfer price using the negotiated, cost-based, and market-based approaches.
Negotiate a transfer price between $11 (minimum acceptable to Sole) and $17 (maximum acceptable to Boot)

Illustration J-22

Boot Division

Sole Division

I will pay no more than $17 (cost from outside supplier)

Let's make a deal!

I want at least $11.
Variable Costs

- In the minimum transfer price formula, **variable cost is the variable cost of units sold internally.**
- May differ - higher or lower - for units sold internally versus those sold externally.
- The minimum transfer pricing formula can still be used – just use the internal variable costs.

LO 4 Determine a transfer price using the negotiated, cost-based, and market-based approaches.
Summary of Negotiated Transfer Pricing

- Transfer prices established:
  - Minimum by selling division.
  - Maximum by the purchasing division.

- Often not used because:
  - Market price information sometimes not easily obtainable.
  - Lack of trust between the two divisions.
  - Different pricing strategies between divisions.
Cost-Based Transfer Prices

- Uses costs incurred by the division producing the goods as its foundation.
- May be based on variable costs alone or on variable costs plus fixed costs.
- Selling division may also add markup.
- Can result in improper transfer prices causing:
  - Loss of profitability for company.
  - Unfair evaluation of division performance.
Illustration: Alberta Company requires the division to use a transfer price based on the variable cost of the sole. With no excess capacity, the contribution margins per unit for the two divisions are:

Cost-based transfer price—10,000 units

<table>
<thead>
<tr>
<th>Boot Division</th>
<th>Sole Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling price of hiking boots</td>
<td>Selling price of sole</td>
</tr>
<tr>
<td>Variable cost of manufacturing boot (not including sole)</td>
<td>Variable cost per sole</td>
</tr>
<tr>
<td>Cost of sole purchased from sole division</td>
<td>Contribution margin per unit</td>
</tr>
<tr>
<td>Contribution margin per unit</td>
<td>$44 ($44 + $0)</td>
</tr>
<tr>
<td>Total contribution margin per unit</td>
<td></td>
</tr>
</tbody>
</table>
Cost-based pricing is bad deal for Sole Division – no profit on transfer of 10,000 soles to Boot Division and loses profit of $70,000 on external sales.

Boot Division is very happy; increases contribution margin by $6 per sole.

If Sole Division has excess capacity, the division reports a zero profit on these 10,000 units and the Boot Division gains $6 per unit.
Cost-Based Transfer Prices

- Overall, the Company is worse off by $60,000.

Illustration J-25

Does not reflect the division’s true profitability nor provide adequate incentive for the division to control costs.

LO 4 Determine a transfer price using the negotiated, cost-based, and market-based approaches.
Market-Based Transfer Prices

- Based on existing market prices of competing goods.
- Often considered best approach because it is objective and generally provides the proper economic incentives.
- It is indifferent between selling internally and externally if can charge/pay market price.
- Can lead to bad decisions if have excess capacity.
- Why? No opportunity cost.
- Where there is not a well-defined market price, companies use cost-based systems.
The Plastics Division of Weston Company manufactures plastic molds and then sells them for $70 per unit. Its variable cost is $30 per unit, and its fixed cost per unit is $10. Management would like the Plastics Division to transfer 10,000 of these molds to another division within the company at a price of $40. The Plastics Division is operating at full capacity. What is the minimum transfer price that the Plastics Division should accept?

a. $10  
b. $30  
c. $40  
d. $70
Effect of Outsourcing on Transfer Pricing

Outsourcing - Contracting with an external party to provide a good or service, rather than doing the work internally.

- Virtual companies outsource all of their production.
- Use incremental analysis to determine if outsourcing is profitable.
- As companies increasingly rely on outsourcing, fewer components are transferred internally thereby reducing the need for transfer pricing.
Companies “globalize” their operations

- Going global increases transfers between divisions located in different countries.
- 60% of trade between countries is estimated to be transfers between divisions.
- Different tax rates make determining appropriate transfer price more difficult.
Illustration: Alberta’s Boot Division is located in a country with a corporate tax rate of 10%, and the Sole Division is located in a country with a tax rate of 30%. The following illustrates the after-tax contribution margin per unit under transfer prices of $18 and $11.

<table>
<thead>
<tr>
<th></th>
<th>Boot Division</th>
<th>Sole Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling price of hiking boots</td>
<td>$90.00</td>
<td>Selling price of sole</td>
</tr>
<tr>
<td>Variable cost of manufacturing boot (not including sole)</td>
<td>35.00</td>
<td>Variable cost per sole</td>
</tr>
<tr>
<td>Cost of sole purchased internally</td>
<td>18.00</td>
<td>Before-tax contribution margin</td>
</tr>
<tr>
<td>Before-tax contribution margin</td>
<td>37.00</td>
<td>Tax at 30%</td>
</tr>
<tr>
<td>Tax at 10%</td>
<td>3.70</td>
<td>After-tax contribution margin</td>
</tr>
<tr>
<td>After-tax contribution margin</td>
<td>$33.30</td>
<td></td>
</tr>
</tbody>
</table>

Before-tax total contribution margin per unit to company = $37 + $7 = $44
After-tax total contribution margin per unit to company = $33.30 + $4.90 = $38.20
## Transfer Between Divisions in Different Countries

The after-tax contribution margins differ because more of the contribution margin is attributed to the division in the country with the lower tax rate.

<table>
<thead>
<tr>
<th></th>
<th>Boot Division</th>
<th>At $11 Transfer Price</th>
<th>Sole Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling price of hiking boots</td>
<td>$90.00</td>
<td></td>
<td>Selling price of sole</td>
</tr>
<tr>
<td>Variable cost of manufacturing boot (not including sole)</td>
<td>35.00</td>
<td></td>
<td>Variable cost per sole</td>
</tr>
<tr>
<td>Cost of sole purchased internally</td>
<td>11.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before-tax contribution margin</td>
<td>44.00</td>
<td></td>
<td>Before-tax contribution margin</td>
</tr>
<tr>
<td>Tax at 10%</td>
<td>4.40</td>
<td></td>
<td>Tax at 30%</td>
</tr>
<tr>
<td>After-tax contribution margin</td>
<td>$39.60</td>
<td></td>
<td>After-tax contribution margin</td>
</tr>
</tbody>
</table>

Before-tax total contribution margin per unit to company = $44 + $0 = $44
After-tax total contribution margin per unit to company = $39.60 + $0 = $39.60