What you will learn:

(1) What transfer pricing is and briefly how it is regulated
(2) How to minimize taxes using transfer pricing
(3) How to unblock funds using transfer pricing and the cost of doing so
(4) How to circumvent capital controls by altering credit terms and the cost of doing so

Identify Market Imperfections as Violations of the Parity Conditions

• Anything which results in a violation of the parity conditions will lead to a potential for excess profitability for the MNC
  • Violations of Purchasing Power Parity (PPP)
    – Relevant for product and input sourcing decisions
  • Violations of Uncovered Interest Parity (UIP)
    – Relevant for financing and investing decisions

Types of Intracorporate Transfers

• One of the mechanisms used to exploit market imperfections is intracorporate transfers. Examples include:
  (1) TRANSFER PRICING
  (2) LEADING AND LAGGING ACCOUNTS RECEIVABLE/PAYABLE

Types of Arbitrage and the MNC

(1) Tax arbitrage
  – Shift profits to low tax countries because profits are taxable
  – Shift costs to high tax countries because they are tax deductible
(2) Financial Market Arbitrage
  – Can circumvent capital market restrictions
(3) Regulatory System Arbitrage
  – Ability to disguise true profitability may give the MNC a bargaining advantage

A distinguishing feature of a Multinational corporation (MNC) is its ability to exploit market imperfections.

Market imperfection - any situation where the observed price is different from the price that would exist in a competitive, unregulated, full information market.

Government intervention is a primary source of market imperfections exploited by the MNC. Examples include:
  - Direct taxation of remittance
  - Differential Taxation according to country of origin
  - Restriction to local capital markets
  - Price ceilings and floors
  - Interest rate restrictions
TRANSFER PRICING

- A transfer price refers to the valuation of transactions between economic units of an MNC.
- Transactions include tangibles (intermediate and final goods) and intangibles (technology, expertise).

Transfer pricing objectives

(i) Profit Maximization
Most common objective is overall corporation profit maximization. This may conflict with divisional profit maximization. These goals must be met under a system of meaningful performance evaluations.

(ii) Cash-flow
Circumvent funds blockage
Reinvestment strategies (profit profile manipulation)

(iii) Sales and Marketing
Subsidize subsidiary to gain market share (may fall under “dumping”)

(iv) Tax Minimization
Shift profit to low tax zones and costs to high tax zones. This objective is often in conflict with host government objectives. Consequently, governments have developed complex tax laws designed to discourage discretionary transfer pricing.

Regulation of transfer pricing for tax purposes

- Discretionary transfer pricing refers to any price different from the arms length price.
- The arms length price is the price that would be charged for the same or similar benefits in independent transactions with unrelated parties under similar circumstances.

Transfer Pricing Methods in Practice

1. Comparable uncontrolled price method
   - Unrelated Party

2. Resale Price method
   - Discount Final Sale, \( P_f \)

3. Cost-Plus method
   - Inflate Input cost, \( C_P \)

4. Another appropriate method
   - Comparable profit and net yield

5. Advanced Pricing Agreements (APAs)

Transfer Pricing Examples

EXAMPLE 1 - Parent Corporation Sells to the Subsidiary - No Tariffs

1. Trade Pattern

(1) Parent buys an input in the US market at a per unit cost of \( P_I = $2.00 \)
(2) Parent processes the input at a per unit cost of \( C_P = $1.00 \)
(3) The parent ships the product to the subsidiary ignoring these transactions costs and charges a per unit transfer price of \( P_T \)
(4) Subsidiary processes the input at a per unit cost of \( C_s = $2.50 \)
(5) The subsidiary sells the finished product in the foreign country at a per unit price of \( P_f = $8.50 \)
(6) The US income tax rate is \( t_u = 28\% \)
(7) The Foreign income tax rate is \( t_f = 40\% \)

Let the quantity shipped be denoted \( Q \)
General Procedure

1. Write an expression for the firm’s overall net income, denoted \(\text{NI}\).

\[
\text{NI} = Q[(P_T - P_I - C_P)(1 - t_u) + (P_f - P_T - C_s)(1 - t_f)]
\]

2. Determine the Firm’s Objective

- Maximize overall corporate profit
- Take derivative to accomplish objective

\[
\frac{\partial \text{NI}}{\partial P_T} = (1 - t_u)(1 - t_f) = (t_f - t_u)
\]

3. Find Transfer Pricing Bounds

- Minimum price: \((P_T - P_I - C_P)(1 - t_u) \geq 0\)
  - (Seller of transfer good (parent) can’t lose money)
- Solving the above we get \(P_T \geq (P_I + C_P)\)
  - With the numbers in this example \(P_T \geq 3.00\)
- Maximum Price: \((P_T - P_T - C_s)(1 - t_f) \geq 0\)
  - (Buyer of transfer good (subsidiary) can’t lose money)
- Solving the above we get \(P_T \leq (P_f - C_s)\)
  - With the numbers in this example \(P_T \leq 6.00\)

4. Resulting Profit

\[
\text{NI} = [(P_T - P_I - C_P)(1 - t_u) + (P_f - P_T - C_s)(1 - t_f)]
\]

- \(\text{NI} = 2.16 + 0.00\)
- Maximum profit = $2.16

Source of the Arbitrage Profit

- The $0.12 our firm gains is ultimately at the expense of the foreign tax payers
- Given that transfer pricing can be used to manipulate taxes, governments closely scrutinize transfer pricing policies
- We will calculate the widest reasonable bounds for setting the transfer price
  - The transfer price must be set such that neither the buyer nor seller of the transfer good can deliberately lose money
Transfer Pricing Examples
EXAMPLE 2 - Parent Corporation Sells to the Subsidiary - With an Import Tariffs

• Side note on Tariffs
  – Ad-valorem : Tariff is a percentage of the price of the item
  – Per unit: Tariff is a fixed dollar amount
  – Income tax deductible
    • Some tariff expenses are considered an income tax deductible expense prior to applying income taxes

Example 2 Trade Pattern

1. Write an expression for the firm’s overall net income, denoted NI

\[ NI = Q(P_T - P_I - C_P)(1 - t_{us}) + (P_T - P_I - C_S - t_{P})(1 - t_{f}) \]

Additional Cost to the subsidiary

Note: Tariff is deducted as a cost prior to applying income tax

2. Determine the Firm’s Objective

• Maximize overall corporate profit
  – Take derivative to accomplish objective

\[ \frac{\partial NI}{\partial P_T} = (1 - t_{us}) - (1 - t_{f}) - t_t(1 - t_{f}) \]

Changes the derivative

0.72 - 0.6 - 0.3*0.6 = -0.06 < 0

Conclusion \( \Rightarrow \) Set \( P_T \) low

3. Find Transfer Pricing Bounds

• Minimum price : \( (P_T - P_I - C_P)(1 - t_{us}) \geq 0 \)
  – (Parent can’t lose money)

• Solving the above we get \( P_T \geq P_I - C_P \)

• With the numbers in this example \( P_T \geq 3.00 \)

• Maximum Price: \( (P_T - P_I - C_S - t_{P})(1 - t_{f}) \geq 0 \)
  – (Subsidiary can’t lose money)

• With the numbers in this example:
  \[ P_T \leq \frac{(P_f - C_s)}{1 + t_i} = \frac{8.50 - 2.50}{1.3} = 4.62 \]

4. Resulting Profit

\( (S.00 - 2.00 - 1.00)(1 - 0.28) + (8.50 - 3.00 - 0.3)(3.00 - 2.50)(1 - 0.4) \)

• Maximum profit = $1.26

• The addition of the tariff lowers our maximum profit.

• Setting the transfer price low makes the profit land (in this case) with the subsidiary
Alternative Goal

- From the previous example, we note that when the profit is maximized, all the profit is located with the subsidiary.
- Under normal circumstances, the subsidiary would send the profits back to the parent (US) as a dividend.
- If the funds are blocked, we can use transfer pricing to unblock the funds.

Unblocking the Funds

- Goal:
  - access funds blocked by the foreign government
  - To transfer funds from the subsidiary to the parent
  - maximize the parent corporation's net income

Unblocking the Funds

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  - access funds blocked by the foreign government
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  - maximize the parent corporation's net income

\[
\frac{\partial \text{NI Parent}}{\partial P_T} = (1 - t_{us}) > 0
\]

- Set \( P_T \) high

\[
(4.62 - 2.00 - 1.00)(1 - 0.28) + (8.50 - 4.62 - 0.3(4.62) - 2.50)(1 - 0.4) = 1.17
\]

- Compared to the $1.26 optimal price, the value of the firm drops ($1.26 - $1.17) = $0.09. It "costs" the stockholders $0.09 to unblock $1.17.

More on Tariffs

- Ad valorem
- Per Unit
- Income Tax
- Non-Income Tax Deductible

\[
n = (P_T - P_I - C_S - t_X P_T)(1 - t_f) + (P_f - P_T - C_P)(1 - t_{us}) - t_i P_T
\]

Example 3 Trade Pattern

1. Subsidiary buys an input in the foreign market at a per unit cost of \( P_I = 2.50 \)
2. Subsidiary processes the input at a per unit cost of \( C_S = 1.25 \)
3. The subsidiary ships the product to the subsidiary (ignore these transactions costs) and charges a per unit transfer price of \( P_T \)
4. The foreign government charges an income tax deductible ad-valorem export tariff \( t_X = 10\% \) (paid by the subsidiary)
5. The US government charges a non-income tax deductible ad-valorem import tariff \( t_i = 5\% \) (paid by the parent)
6. Parent processes the input at a per unit cost of \( C_P = 2.50 \)
7. The parent sells the finished product in the foreign country at a per unit price of \( P_f = 8.50 \)
8. The US income tax rate is \( t_{us} = 40\% \)
9. The Foreign income tax rate is \( t_f = 20\% \)

\[
\frac{\partial \text{NI Parent}}{\partial P_T} = (1 - t_{us}) > 0
\]

\[
\text{SubscriptNI Parent} = (P_T - P_I - C_S - t_X P_T)(1 - t_f) + (P_f - P_T - C_P)(1 - t_{us}) - t_i P_T
\]

\[
\text{SubscriptNI Parent} = (P_f - P_T - C_P)(1 - t_{us}) - t_i P_T
\]
\[ NI = (P_T - P_I - C_S - t_s P_T)(1 - t_f) + (P_f - P_T - C_P)(1 - t_{us} - t_s) \]
\[ \frac{\partial NI}{\partial P_T} = (1 - t_f) - t_s (1 - t_{us}) = 0.07 \]

Set \( P_T \rightarrow \) high to $5.54
\[ NI = (5.54 - 2.50 - 1.25 - 0.1 \times 5.54)(1 - 0.20) + (8.50 - 5.54 - 2.50)(1 - 0.4) - 0.05 \times 5.54 \]
\[ = 0.9888 + 0.0 = 0.9888 \]
Profits entirely with the subsidiary

Cost / Benefit of Unblocking Funds
- The maximal profit lands with the subsidiary
- Normally we would send these profits back to the parent as a dividend
- Sometimes governments restrict these dividend payments
- Compare the ultimate return of leaving the funds in place with alternative methods of getting them out
- Example – assume in Example 3 that the foreign government imposes a withholding tax on dividends of 20%. The withholding tax will be in effect for 3 years and then go to zero.
- The US interest rate is 5% (after tax), while the foreign interest rate is 2% (after tax)

How Big a Dividend Can We Pay?
- The Subsidiary has maximum net income of $0.9888
- If the Sub pays a dividend it will have to pay the withholding tax as well. Therefore, if we denote the dividend, \( D \), then
\[ D + 0.20D = 0.9888 \]

Dividend Paid
\[ \text{Total Funds Available} \]
\[ \text{Withholding Tax due} \]
The Maximum Dividend the Sub can pay today is
\[ D = 0.824 \]

Unblock the Funds with Transfer Pricing

<table>
<thead>
<tr>
<th></th>
<th>At ( P_T = $4.167 )</th>
<th>At ( P_T = $5.54 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
<td>$0.8915</td>
<td>$0.00</td>
</tr>
<tr>
<td>Subsidiary</td>
<td>$0.00</td>
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</tr>
<tr>
<td>Overall</td>
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Set \( P_T \) low and get the profits to the parent
Parent can pay dividend today of \$0.8915

Possible Dividend / Transfer Pricing Policies
- **Policy 1**
  - Set \( P_T \) High
  - Sub pays dividend today of \$0.824
  - US stockholders get in 3 years \( (1 + 0.05)^3 \times \$0.824 = \$0.954 \)
- **Policy 2**
  - Set \( P_T \) low
  - Parent pays dividend today of \$0.891
  - US stockholders get in 3 years \( (1 + 0.05)^3 \times \$0.891 = \$1.0314 \)
- **Policy 3**
  - Set \( P_T \) high
  - Sub pays dividend in 3 years \( (1 + 0.03)^3 \times \$0.9888 = \$1.0493 \)

Interactions
- In the Dividend/Transfer Pricing policy decision we are balancing several factors
  - The two income tax rates
  - The two tariffs
  - The withholding tax
  - The rate of return in each country
- The foreign government has set an incentive compatible set of taxes
  - Our incentive is to maximize stockholder wealth
  - Foreign gov’s incentive is for us to leave the profit there and reinvest it.
  - What’s best for us is also what’s best for them
Adjusting Credit Terms (Leading and Lagging)

- The payments between the parent and the subsidiary are normally done on trade credit terms
- Payment occurs 30, 60, 90, etc. days after the actual transaction
- Altering the credit terms can shift funds between the MNC’s units

Shorten or Lengthen?

- The seller of the good is extending credit (lending) to the buyer of the good
- To transfer
  - From seller to buyer: lengthen credit terms
  - From buyer to seller: shorten credit terms

Credit Terms Example 1

- The parent corp. sells $1 million to its overseas subsidiary on normal terms of 60 days credit
- If the corporation wants to transfer $1 million to the subsidiary the parent should...
  - The parent (seller) is lending to the subsidiary
  - Want to lend more
  - Lengthen the credit terms

Credit Terms Example 2

- The subsidiary sells $1 million to the parent on normal terms of 90 days credit
- If the corporation wants to transfer $1 million to the subsidiary the subsidiary should...
  - The subsidiary (seller) is lending to the parent
  - Want to lend less
  - Shorten the credit terms

Cost and Benefits of Transferring Funds

- Depends on
  - the interest rates in each country
    - Must have expected, after-tax, dollar rates
  - The credit status of each company unit
    - Whether the unit is a borrower or a lender
    - Which way we transfer the funds
Parent has surplus of funds  
Subsidiary has a shortage of funds

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<th>Expected After-Tax Dollar Borrowing rate</th>
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Transfer funds from subsidiary to parent
Cost subsidiary 3.00% in additional borrowing
Parent earns additional 4.25%
Company **Gains** 1.25% on amount transferred

---

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Subsidiary has a shortage of funds

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Transfer funds from subsidiary to parent
Cost subsidiary 3.00% in additional borrowing
Parent saves 5.00% by not having to borrow externally
Company **Gains** 2.00% on amount transferred

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Transfer funds from subsidiary to parent
Opportunity Cost to subsidiary 2.85% lost investment income
Parent earns additional 4.25%
Company **Gains** 1.40% on amount transferred

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Parent has shortage of funds  
Subsidiary has a surplus of funds

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Transfer funds from subsidiary to parent
Opportunity Cost to subsidiary 2.85% lost investment income
Parent saves 5.00% by not having to borrow externally
Company **Gains** 2.15% on amount transferred