Worksheet 23.3

Elasticity, Exchange rates and the Balance of Payments - understanding the Marshall Lerner Condition

Topic: The Marshall Lerner Condition and the J-Curve

Learning Goals/Objectives:

1. For students to understand that the levels of price elasticity of demand for a country's imports and exports determines whether a depreciation or devaluation of the country's currency will move the nation's balance of payments towards a surplus or a deficit.
2. For students to understand the impact of time on the effect of a depreciation or devaluation of a nation's currency on its balance of payments in the current account.
3. For students to evaluate the argument that a country will always benefit from a weaker currency.

Success Indicators:

1. Students will present their PowerPoint presentations of their exchange rate research, explaining how elasticity, exchange rates, and the balance of payments are related.
2. Students will be able to outline their answers to three IB Economics examination questions relating to the Marshall Lerner Condition

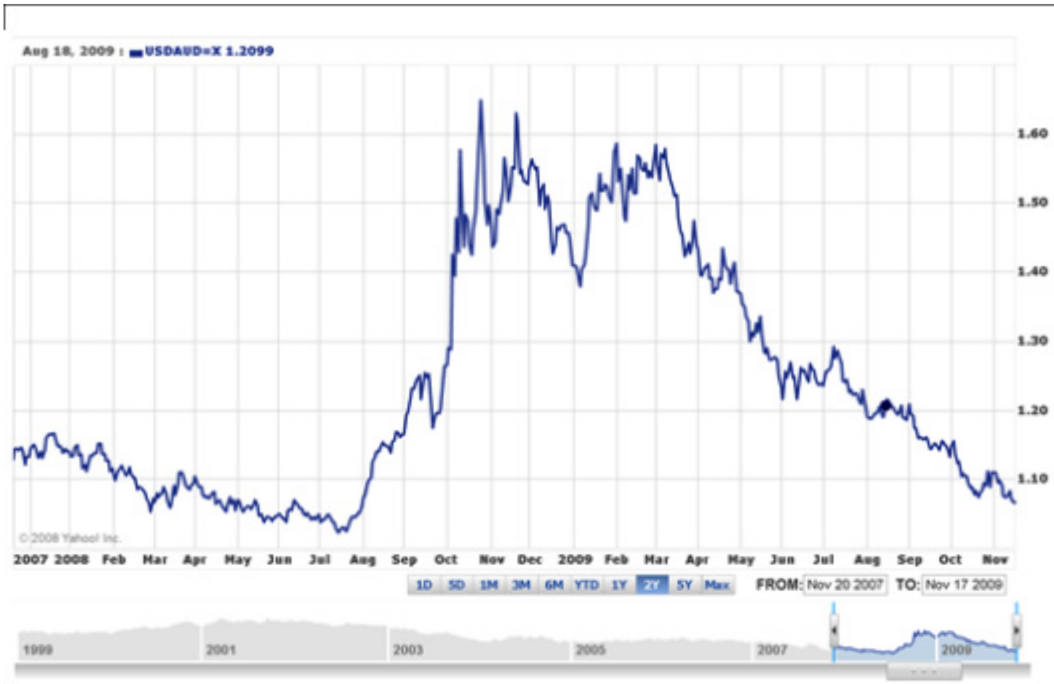
Test of prior knowledge:

- Define 'price elasticity of demand' and explain how it is measured.
- With the use of examples, explain why some products have low price elasticity while others have a high elasticity. With the use of examples, explain why the price elasticity of demand for some goods changes over time
- Explain how the depreciation of a country's exchange rate might affect its current account balance. **IS THIS ALWAYS THE CASE?**
- How might the PED for exports and imports influence the balance on the current account following a change in the value of a nation's currency?

Process:

- Research one pair from the following list of countries:
  - US dollars in Canada
  - Switzerland francs in Great Britain
  - Euros in Japan
  - Brazilian real in the United States
- Complete three pre-readings:
  - **From BizEd:**
  - The Marshall Lerner Condition and The Economic Effects of a Devaluation
  - **From Welker's blog:** The Marshall Lerner Condition and the J-Curve
- Using Yahoo Finance, research exchange rate data from the two countries two years ago up to today.
- Use Yahoo's software to create two a line graph plotting the value of Country A's currency against Country B's. For your initial graph, show the exchange rates over a two year period. For example:

The exchange rate of US dollars in Australia



Next create a Google Doc (shared with your teacher) of your answers to the following questions. Include in the presentation the graph of the exchange rates created in the step above.

Three parts to complete in your Google Doc:

Part 1: Determinants of Exchange Rates and the BoP (22 marks)

- Create a graph of your currency's exchange rate relative to the other country's currency over the last two years. Save it to your computer as an image and upload it into your Doc. Write a one paragraph analysis of the trends in the exchange rate over the last two years. **(total 4 marks)**
- Focus on two specific shorter periods of time in the graph: one in which your currency appreciated noticeably and one in which it depreciated noticeably. **(total 6 marks)**
  - In Yahoo Finance, narrow the range of dates shown on your chart to a distinct period in which your currency strengthened and another period during which it weakened. Save these graphs as an image file and upload them into your Google Doc for analysis. (3 marks)
  - Under each new chart, describe what is happening to the value of currency shown. (3 marks)
- Using your knowledge of economics, explain TWO factors that may have caused the currency to appreciate and two factors that may have caused it to depreciate. **(total 4 marks)**
- Given the changes identified, what would you predict would happen to your country's current account balance over the two periods identified? Explain. **(total 4 marks)**
  - Following appreciation (2 marks)
  - Following depreciation (2 marks)

Part 2: The Marshall Lerner Condition (28 marks)

- What is the Marshall Lerner Condition? Why is it important to consider the price elasticities of demand for exports and imports when examining the impact of a change in exchange rates on the current account balance? – **(total 4 marks)**
- For both the period of appreciation and the period of depreciation you identified above, explain the impact of the change in exchange rates on the following: **(total 8 marks)**
  - a firm that imports its raw materials from the other country (2 marks)
  - a firm that exports its finished products to the other country (2 marks)
  - consumers who buy imports from the other country (2 marks)
  - a firm that produces good for the domestic market and competes with firms from the other country (2 marks)
- Consider the impact of the currency's ***depreciation*** on expenditures on imports and income from the sale of exports based on the following information. **(total 16 marks)**
  - *In the short-run following the currency's depreciation,* **PED for imports = 0.35** and the **PED for exports = 0.55**.
    - What will happen to expenditures on imports? Explain. (2 marks)
    - What will happen to income from the sale of exports? Explain. (2 marks)
    - What will happen to the country's current account balance? Explain (2 marks)

- Based on the elasticity information above, is the Marshall Lerner Condition met? Yes or no? Explain (2 marks)

- *In the long-run following the currency's depreciation,* **the PED for imports = 1.5** and the **PED for exports is 2.0.**
  - What will happen to expenditures on imports? Explain. (2 marks)
  - What will happen to income from the sale of exports? Explain. (2 marks)
  - What will happen to the country's current account balance? Explain (2 marks)
  - Based on the elasticity information above, is the Marshall Lerner Condition met? Yes or no? Explain (2 marks)

Part 3: the J-Curve (16 marks)

- Why does the price elasticity of demand for imports and exports increase over time following a change in a country's exchange rate? In what way does PED change the more time passes? **(total 2 marks)**
- Why will a depreciating currency worsen a country's current account balance in the short-run? Assuming the currency remains weak, how would the current account balance change over time. **(total 2 marks)**
- Draw a J-Curve and explain its shape, referring to your country's currency. **(total 2 marks)**
- Read the following article: 'How far will the dollar fall?' by Richard W. Rahn. Based on the paragraphs of the article indicated below, answer the questions that follow. Firstly read paragraph three.
- Why might the weaker dollar worsen the US trade deficit? Under what conditions would the weaker dollar improve America's trade deficit? **(total 4 marks)**
  Read paragraph four.
- How does a large financial (capital) account surplus allow the United States to maintain a large current account deficit? **(total 2 marks)**
  Read paragraph five.
- How do exchange rate controls by China and Japan reduce the likelihood that a weaker dollar will improve the United States' current account balance?
  Read paragraph six.
- If investments in the United States began earning lower returns relative to investments in other countries' financial and capital markets, what would ultimately happen to the US balance of payments in its current and financial accounts? Explain **(total 4 marks)**

Total 66 marks