Monetary and Fiscal Policy

Abstract

Keywords
Keyword1 — Keyword2 — Keyword3

12a	Calculate and interpret price, income and cross-price elasticities of demand and describe factors that affect each measure
12b	Compare substitution and income effects
12c	Distinguish between normal goods and inferior goods
12d	Describe the phenomenon of diminishing marginal returns
12e	Determine and interpret breakeven and shutdown points of production
12f	Describe how economies of scale and diseconomies of scale affect costs

Contents

1. International Trade

1.1 Basic Terminology

- **Imports**: goods and services that the domestic economy purchases from other countries
- **Exports**: goods and services that a domestic economy sells to other countries
- **Terms of trade**: ratio between the price level of exports to the price of imports, representing those prices by export/import indexes. The terms of trade capture the relative cost of imports relative to the price of exports. If the prices of exports increase relative to the price of imports, terms of trade are improved because the country is now able to buy more imports with the same amount of exports (increases relative wealth)
- **Net exports**: difference between the value of a country's exports and imports (value of exports less imports)
- **Trade surplus (deficit)**: when the balance of net exports is positive the country is said to have a trade surplus (more exports than imports), otherwise its said to have a trade deficit
- **Closed economy (autarky)**: is a country that does not trade with other countries. All goods produced are consumed domestically. The price equilibrium in closed economies is called **autarkic price**.
- **Open economy**: is an economy that trades with other countries. Such economies trade in the world market and are subject to the **world price**.
- **Free trade**: occurs when there are no government restrictions on the country's ability to trade internationally. Policies that impose restrictions on trade such as tariffs or quotas are known as **trade protection**.
- **Globalization**: is the increasing worldwide integration of markets for goods, services and capital.
- **Foreign Direct Investment**: is the direct investment by a firm in one country (the source country) in productive assets in a foreign country (the host country). Firms

engaging in FDI are **multinational corportations**. An example of FDI is the dellocation of manufacture to countries where human labor is cheaper.

- **Foreign Portfolio Investment (FPI)**: it refers to shorter-term investments by the private sector often through pensions funds or capital funds in foreign financial instruments such as foreign stocks or government bonds.

- **Intra-firm trade**: the results of globalization is that trade between subsidiaries of a related party in different parts of the world composes an important part of world trade (46% of imports in US are due to related parties trading)

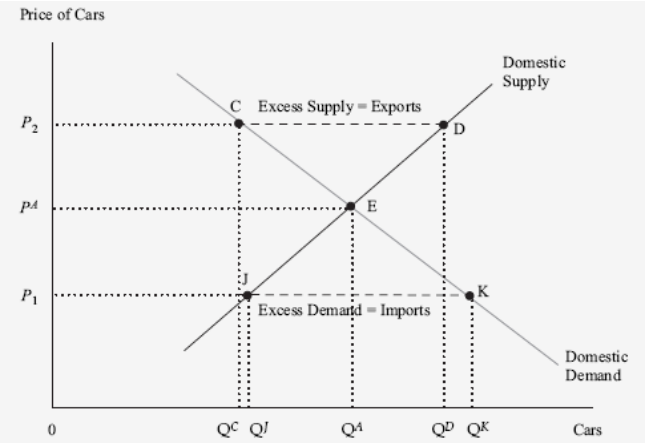

Figure 1. Excess demand, excess supply, imports and exports and autarkic price in domestic economies

Considering the automobile industry in the UK in the scenario of closed economy. Demand met supply in (Q_A, P_A) which corresponds to the autarkic price and equilibrium between domestic demand and supply. If the country opens its economy to the world market, if the price in the worlds market is lower (P_1), the new equilibrium implies an excess demand (Q_A to Q_J). This excess demand will be met through imports. On the other hand, if the price in the worlds market is higher (P_2) there will be an excess supply in the internal market which will increase exports (Q_A to Q_D).

1.2 Benefits and costs of trading

Has trade been beneficial?
The most compelling arguments supporting international trade are:

- Countries gain from exchange and specialization: industries experience greater economies of scale and households have access to a greater product variety

- Trade leads to a greater efficiency and allocation of resources due to the increased specialization fostered by comparative advantage. This generally imply that each country will focus in the industries or production activities it is "good at", while other industries which are not so efficient tend to be extinguished from increased international competition. Hence, each country will only allocate resources to activities it can efficiently produce.

- The increased competition and **knowledge spillovers**. Accessing a wider market and thus more and better competitors forces firms to be more efficient. An example of such competition is the knowledge spillovers between technological companies, forcing innovation and creating consumer welfare. Knowledge spillovers occur when investments in R%D and knowledge creation generate benefits that extend beyond the invested entity and facilitate learning and innovation by other entities.

1.3 Comparative and absolute advantage: Gains from Trade

A country has **absolute vantage** in producing a good or service if it is able to produce that good at lower cost or use fewer resources in its production than its trading partners.
For example, supposed a worker in Brazil can produce either 20 pens or 40 pencils. A worker in Vietnam can produce either 10 pens or 60 pencils. Vietnamese workers produce pens at a lower labor cost than Brazil because it can produce 60 pencils against Brazil's 40 with the same amount of labor. Vietnam has absolute advantage in the production of pencils.
A country has comparative advantage in producing a good if its opportunity cost of producing that good is less than its trading partner. In this scenario, the opportunity cost for Vietnam to produce an extra pen is incurring in a "loss" of 6 pencils. When it comes to Brazil, its opportunity cost to produce an extra pen is 2 pencils and is lower. Brazil has a comparative advantage in the production of pens while Vietnam has a comparative advantage in the production of pencils.
The more further away the world price is from the autarkic price of a good, the more a country benefits from trade. If the autarkic price is higher than the world price that means the production of that specific good is inefficient - there is a higher marginal cost and thus economies are incurring in opportunity costs by having an inefficient allocation of capital. By importing from countries with comparative advantage, that is, countries which can produce the good at a lower cost than it would be possible by domestic production, employing domestic labor and capital, both countries can have welfare gains.
In sum, a country isn't required to have an absolute advantage in producing any of the goods because it can still profit from trade by exporting goods to countries in which it has comparative advantage.

1.4 Ricardian and Heckscher-Ohlin Models of Comparative Advantage

The **Ricardian Model** considers labor the only factor of production. It extends Adam Smith's notion that only countries with an absolute advantage in the production of goods could gain from trade by arguing that countries with comparative advantage can also benefit from trading.

In this model, each and every good is produce with labor. Differences in labor productivity and wages reflecting underlying differences in technology - the main source of comparative advantage between countries.

The **Heckscher-Ohlin Model** (factor-proportions theory) considers both capital and labor as factors of production. According this model, the source of comparative advantage is the difference in relative endowment of these factors. This model assumes that technology across countries is the same and provides no comparative advantage. So, what really matters is the proportion between capital and labor: countries with a lot of labor but low capital will tend to focus on labor intensive industries as they have comparative advantage whereas countries with a lot of capital should focus capital intensive activities.

In this model, there is **income redistribution** through trade. As countries open up to trade, the output prices of export goods rise (because the autarkic price of exports goods are lower than worlds price) while the prices of import goods lower (because the autarkic price of imports is higher than the worlds price). As a result, there is a shift in wealth as income streams favor exporter industries while import industries decline. In the absence of frictions, the price of all goods and inputs should converge in the long-run.

2. Trade and Capital Flows: Restrictions and Agreements

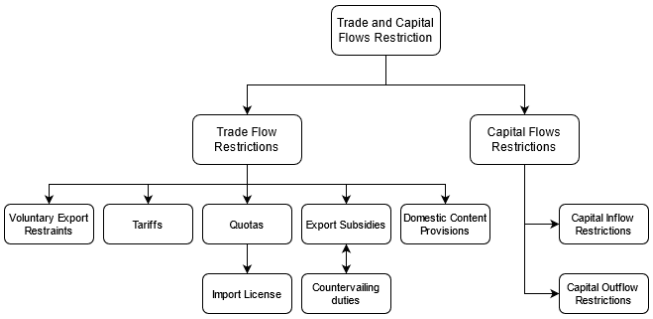

Figure 2. Overview

Tariffs are taxes that government levies on imported goods. The primary objective of tariffs is to protect domestic industries that produce the same or similar goods. When **large countries** - countries that are large importers of a good and thus have some bargaining power - impose tariffs, the exporters are forced to reduce the price of the good to retain some of the market share it could lose if it didn't ajust its price.

In theory, large countries can increase domestic welfare by imposing tariffs if (i) its trading partner does not retaliate (ii) the deadweight loss as result of the tariff is inferior to the surplus to domestic producers plus government surplus. When successfully applied, tariffs increase **terms of trade**.

Tariffs have a net reduction in global welfare - the large country imposes an even larger loss on its trading partner.

The global welfare effect can be summarized as follows:

- Consumers suffer a loss in consumer surplus because of the increase in price in the value of the tariffs
- Local producers gain a producer surplus because the price increases (world price + tariffs)
- Government gains tariff revenue on imports

Tariffs create supply inefficiency as inefficient firms whose cost of production is greater than the world price are able to enter the market. Tariffs reduce welfare by preventing market access to customers who would buy the product at world price - because now that the product is world price + tariffs they can't afford it.

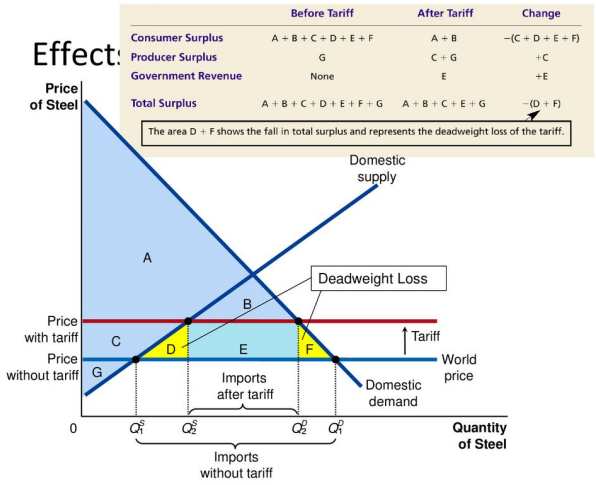

Figure 3. Welfare Effects of Tariff and Import Quotas

Quotas are restrictions to the quantity of a good that can be imported into a country. An **import license** specifies the quantity that can be imported from each country. With quotas, foreign producers can raise the price of their goods and earn greater profits than they would without quotas - these profits are **quota rents**. While with tariffs the profits are likely to be captured by domestic agents (governments), with quotas profits are captured by foreign suppliers.

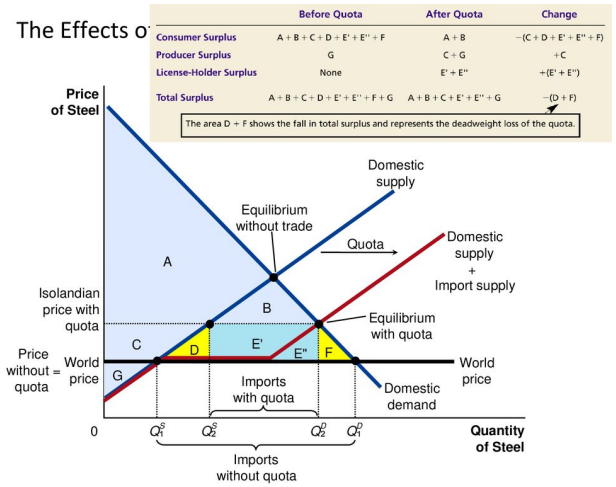

Figure 4. Welfare Effects of Tariff and Import Quotas

Voluntary Export Restraint (VER) is a trade barrier under which the exporting country agrees to limit its exports to its trading partners to a specified number of units. The main difference between quotas em VER is that the latter is imposed by exporting countries while

Export Subsidies **Export subsidies** are payments from the government to firms for each unit of a good that is exported. In response, **countervailing duties** are levied by the importing country against subsidized exports entering the country. Countervailing duties are used to negate/offset the impact of foreign export incentives.

In the case of export subsidies, exporters have incentive to shift sales from the domestic market to the export market, restricting access to domestic households. In the scenario of small country where it has no impact on market price, it raises prices in the domestic market by the value of the export subsidy. That is, the firm will maximize its profit when marginal cost equals ($Price = P_{world} + P_{subsidy}$). In domestic markets, however, because firms do not receive the extra subsidy incentive, they sell at world price + subsidy.

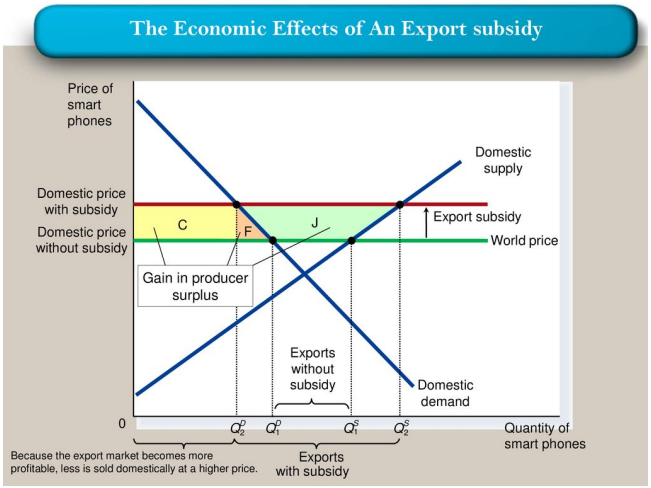

Figure 5. Economic effects of an export subsidy

Summary

Panel A. Effects of Alternative Trade Policies

	Tariff	Import Quota	Export Subsidy	VER
Impact on	Importing country	Importing country	Exporting country	Importing country
Producer surplus	Increases	Increases	Increases	Increases
Consumer surplus	Decreases	Decreases	Decreases	Decreases
Government revenue	Increases	Mixed (depends on whether the quota rents are captured by the importing country through sale of licenses or by the exporters)	Falls (government spending rises)	No change (rent to foreigners)
National welfare	Decreases in small country Could increase in large country	Decreases in small country Could increase in large country	Decreases	Decreases

Panel B. Effects of Alternative Trade Policies on Price, Production, Consumption, and Trade

	Tariff	Import Quota	Export Subsidy	VER
Impact on	Importing country	Importing country	Exporting country	Importing country
Price	Increases	Increases	Increases	Increases
Domestic consumption	Decreases	Decreases	Decreases	Decreases
Domestic production	Increases	Increases	Increases	Increases
Trade	Imports decrease	Imports decrease	Exports increase	Imports decrease

Figure 6. Summary

2.1 Regional Trading Agreements (RTA)

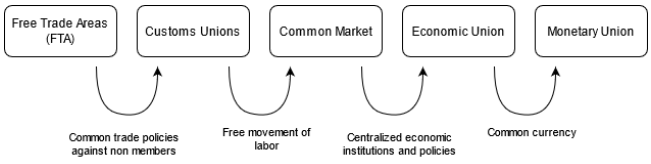

Figure 7. Regional Trading Agreements

Free Trade Areas (FTA) are one of the most prevalent forms of regional integration in which all barriers to the flow of goods and services among members is eliminated. However, all countries maintain their own policies against non members.

Customs Union extends the FTA by creating a common trade policy against non-members.

Common Market extends Customs Unions by allowing free movement of factors of production among members, including labor.

Economic Union it incorporates common economic institutions and involves coordination of economic policies among members

Monetary Union extends Economic Union by adopting a common currency.

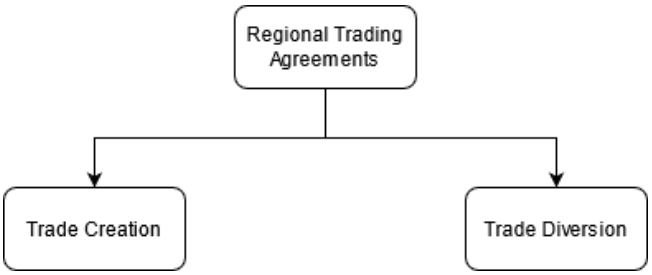

Figure 8. Summary

Trading creation occurs when regional integration results in the replacement of higher-cost domestic production by lower-cost imports from other countries (its based on comparative advantage).

Trade diversion occurs when lower-cost imports from nonmember countries are replaced with higher-cost imports from members. It happens because the tariffs to nonmembers make the good more expensive than higher-cost imports from members.

Both trade creation and trade diversion are possible with RTA's. If the value of trade creation is larger than the trade diversion, the net welfare effect for the domestic economy is positive. However, if the net welfare is negative this can cause more harm than good.
Other than that, there are a few benefits ascribed to free trade:

- Greater specialization according to comparative advantage - firms have free access to regional markets
- Reduction in monopoly power of domestic firms from foreign competitors
- Economies of scale from larger market size
- Learning by doing, technology transfer and knowledge spillovers
- Greater foreign investment
- Increases regional stability because of interdependent economies
- Greater bargaining power in the global economy

Costs of RTA:

3. Balance of Payments

The **balance of payments** (BOP) is a double-entry bookkeeping system that summarizes a country's economic transactions with the rest of the world for a specific period of time (typically a quarter).
A transaction is defined as *an economic flow that reflects the creation, transformation, exchange or extinction of economic value and involves changes in ownership of goods or financial assets, services or the provision of labour and capital*.
In other words, the balance of payments reflects the payments for imports and exports as well as financial transfers.

3.1 The Balance of Payments Entries

The principle of the double-entry bookkeeping system is that for every transaction there is an equal credit and debit entries. The sum of every debit account should be equal to the sum of the debit account, except for inconsistencies in the data (multiple sources with lack of harmonization).

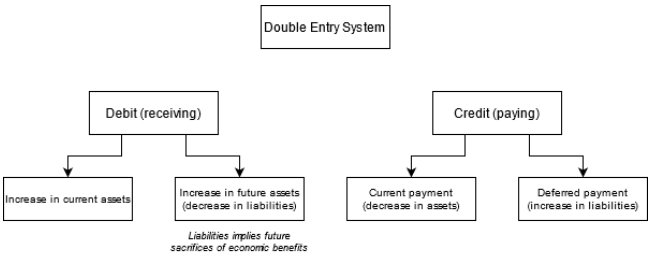

Figure 9. Double-entry system overview

Debit entries reflects purchases of imported goods, services and financial assets and payments received for exports. It also includes payments received from debtors (interest and principal). Debits represent an increase in assets or claims and decrease in liabilities (receipt of cash from foreigners).

Credit entries reflects the nominal payments for the imported goods, services, financial assets and payments to creditors. Credit represents a decrease in assets or an increase in liabili

Panel A

DEBITS Increase in Assets, Decrease in Liabilities	CREDITS Decrease in Assets, Increase in Liabilities
▪ Value of imported goods and services	▪ Payments for imports of goods and services
▪ Purchases of foreign financial assets	▪ Payments for foreign financial assets
▪ Receipt of payments from foreigners	▪ Value of exported goods and services
▪ Increase in debt owed by foreigners	▪ Payment of debt by foreigners
▪ Payment of debt owed to foreigners	▪ Increase in debt owed to foreigners

Figure 10. Summary of debit and credit entries

3.2 The Balance of Payment Components

The Balance of Payment is composed of the **current account**, **capital account** and **financial account**.

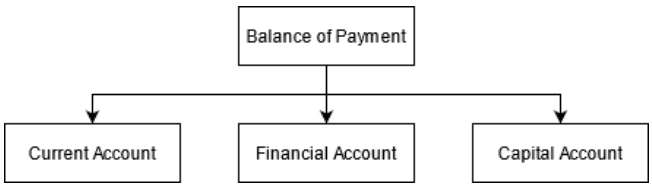

Figure 11. Balance of Payment components

Current Account

The current account measures the flow of goods and services. It is composed of 4 sub-accounts:

- **Merchandise trade** consists of all commodities and manufactured goods
- **Services** includes tourism, transportation, engineering, business services (such as legal services, consulting, accounting, etc), fees from patents and intellectual property.
- **Trade balance** represents the net result from services and merchandise trade. It does not account for the income receipts and unilateral transfers.
- **Income receipts** includes income from ownership of assets abroad (dividends, interest), income on foreign direct investment (when a German entrepreneur builds a factory in China, the fraction of the profits corresponding to the german ownership are regarded as a service export from Germany to China)
- **Unilateral transfers** one way transfers such as workers abroad sending money or gifts to their home country or vice versa.

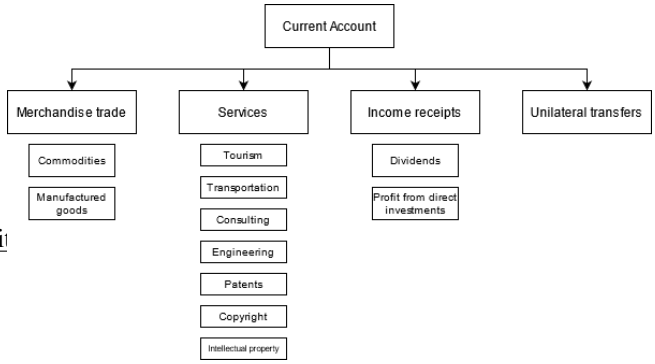

Figure 12. Current Account Overview

Capital Account

- **Capital transfers** includes debt forgiveness and migrant transfers (transfers of goods and financial assets as they enter/leave the country)
- **Sales and purchases of intangible assets** such as natural resources, intangible assets such as patents, copyrights, trademarks, leases, etc.

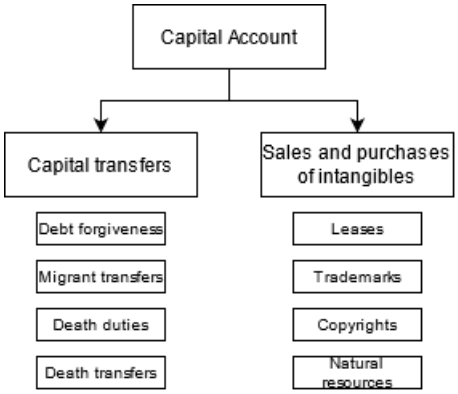

Figure 13. Capital Account Overview

Financial Account

- **International claims on government and private equity**. This includes gold, foreign currency, foreign securities, the government reserve position in IMF, foreign direct investment (FDI)
- **Foreign owned assets in the reporting country**. This includes government securities and private sector securities (corporate bonds, MBS, etc)

(Credits+, Debits–)	1970	1980	1990	2000	2009	2017
Capital Account						
Capital account transactions, net	....	....	–7,220	–1	–140	–24,746
Financial Account						
US-owned assets abroad, ex derivatives (increase/financial outflow (–))	–9,337	–86,967	–81,234	–560,523	–140,465	–1,182,749
Foreign-owned assets in the United States, ex derivatives (increase/financial inflow (+))	7,226	62,037	139,357	1,038,224	305,736	1,537,682
Financial derivatives, net	NA	NA	NA	NA	50,804	23,074
Statistical discrepancy (sum of above items with sign reversed)	–219	22,613	28,066	–61,329	162,497	–95,880

Figure 14. Financial Account Overview

3.3 National Economic Accounts and the Balance of Payments

In a closed economy, we consider the output Y is spent either as private consumption (C), private investment (I) or government spending (G).

$$Y = C + I + G \tag{1}$$

Now considering an open economy where foreign trade exists, the new national income identity is:

$$Y = C + I + G + X - M \tag{2}$$

where X denotes exports and M imports. The net exports $(X - M)$ equates the current account balance. Strictly speaking, net exports denotes the trade balance rather than the current account, but the trade balance represents most of the current account. The difference is that the trade balance excludes income receipts and unilateral transfers.

That being said, the current account balance can broadly be defined as:

$$C_{account} = Y - (C + I + G) = X - M \tag{3}$$

Countries with trade deficit (current account deficit) finance their consumption with the accumulation of foreign liabilities. International capital flows essentially reflect an **inter-temporal trade** as the current account deficit is effectively importing present consumption by exporting future consumption. That is, in order to consume more in the present, the citizens are abiding of future economic benefits as they defer payment.

3.3.1 Disposable Income in Open Economies

The disposable income is equal to the aggregate income Y less net taxes (T) in closed economies. Considering the capital flows, the new aggregate domestic income also incorporates the net capital flow (R) to foreign countries. This includes the income and expenses from abroad (like foreign direct investment, dividends and fixed income, ownership of profits, foreign indirect investment, etc).

$$Y_d = Y + R - T \tag{4}$$

Consumption equates the portion of disposable income spent and not saved.

$$C = Y_d - S_p \tag{5}$$

Conversely, the I-S in closed economies can be restated as an open economy can use its savings to finance not only domestic investment and government spending but foreign investment and foreign government deficit (FDI and FII). Therefore, one can increase investment by increasing foreign borrowing (S_f) or decrease current account deficit

3.3.2 Current Account Imbalances

4. Trade Organizations

The world organizations framework was developed in the sequence of the WWII during the United Nations Monetary and Financial Conference in Bretton Woods, New Hampshire.
The framework resulted in the conception of the **World Bank**, which was founded during the conference and the **International Monetary Fund** which came to existence in 1945. The World Bank was created to facilitate post war reconstruction and redevelopment and IMF was founded to stabilize exchange rates and build a common international payment system.
The World Trade Organization was only officially established in 1995 rebranded from the International Trade Organization and General Agreement on Tariffs and Trade.

4.1 International Monetary Fund

The IMF stands ready to lend foreign currencies to member countries to assist them during periods of significant external deficits. The member countries contribute a pool of gold and country specific currencies and the institution is then responsible to lend under strict conditions and monitor the borrowing countries financial performance and macroeconomic policies.
The IMF mandate is to ensure (1) stability of the international monetary system, (2) stability of the exchange rates and (3) stability of the international payments system.

- provides a forum for cooperation over international monetary issues
- promotes growth of international trade
- supports exchange rate stability
- supports an open system of international payments
- lends foreign exchange to members in need on a temporary basis and under adequate safeguards
- improves the monitoring and control of global economies
- helps resolve and prevent economic imbalances
- helps target and improve financial sector vulnerabilities

From an investment point of view, the IMF helps to keep country-specific market risks and global systemic risks low (or under control).

4.2 World Bank Group

The World Bank has two close affiliate entities - the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA).
The IBRD is a market-based organization which uses its high credit rating to pass the low financing costs it pays for funds on to its borrowers - developing countries. The IBRD lending is primarily finance by selling AAA rate bonds in the developed countries financial markets. The IBRD gains a small margins on its lending to assure its own operating costs and has capital reserves built up over the years. It also pays for the World Bank operating expenses and IDA.
The IDA is the largest source of interest-free loans and grants assistance to the poorest developing countries. IDA funds are replenished every 3 years from 40 donating countries. Additionally, funds are regenerated through repayments of loan principal on long term basis, interest free loans.
The World Bank also provides funds for a wide range of projects in developing countries, but besides acting as a financier, it also enables long lasting economic and social improvements through knowledge sharing networks and by teaching technical expertise.

- strengthen governments and educate government officials
- implement legal and judicial systems that encourage business and lending
- protect individual contracts and property rights
- develop financial markets from micro credit to large corporate ventures
- combat corruption

From an investment perspective, the World Bank helps create the basic economic infrastructure that is essential for the creation of domestic financial markets and a well-functioning financial industry in developing countries.

4.3 World Trade Organization

The WTO provides the legal and institutional foundation of the multinational trading system. The most notable functions of WTO are (1) implementation, administration and operation of individual agreements, (2) acting as a platform for negotiations (3) settling disputes.
From an investment point of view, the WTO's framework of global trade rules provides the major regulatory base for multinational trade, without which it wouldn't exist or it would be more expensive (more frictions). It also provides means of international disputes over trading irregularities.

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