

1. CHAPTER ONE

INTRODUCTION TO MACROECONOMICS

Economics in general is the study of how societies use scarce resources to produce valuable commodities and distribute them among different people. Behind this definition are two key ideas: scarcity and efficiency. That is, resources are *scarce* and that society must use its resources *efficiently*. Put differently, economics is the study of *choice* under conditions of scarcity or economics is the study of choice with *constraints*.

Broadly speaking, economics has two components: microeconomics and macroeconomics. *Microeconomics* (from the Greek word *mikros*, meaning “small”) fundamentally focuses in the analyses of the behavior of individual economic actors (markets, households and business firms). That is, it deals with how firms optimize profit and how households optimize their utility given the respective constraints (such as income, technology, markets) they face. *Macroeconomics* (from the Greek word *makros*, meaning “big”) on the other hand deals with issues relating to the structure, performance and behavior of the economy as a whole.

The prime concern of macroeconomists is to analyze and attempt to understand the *underlying determinants* of the main aggregate trends in the economy with respect to the *total output* of goods and services (GDP), *unemployment*, *inflation* and *international transactions*. In particular, the core of macroeconomic analysis seeks to explain the cause and impact of short-run fluctuations in GDP (the business cycle), and the major determinants of the long-run path of GDP (economic growth).

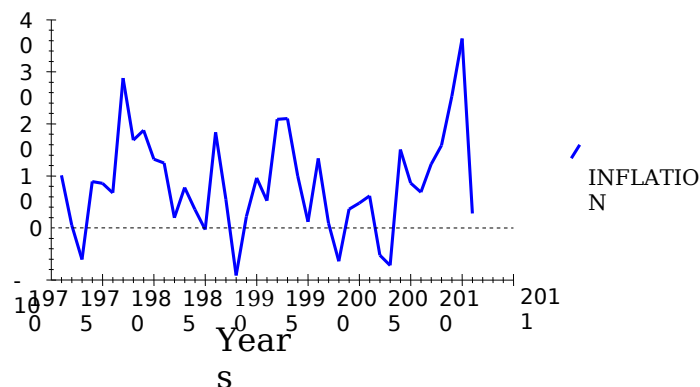
Macroeconomic Concerns

It is not uncommon to hear, in our everyday walk, people or the media mention and talk about many macroeconomic issues. Such concerns include:

- ✓ Why are there recessions? Can the government do anything to combat recessions? Should it?
- ✓ Why are so many countries, including Ethiopia, poor? What policies might help them grow out of poverty?

- ✓ Why does the cost of living keep rising in Ethiopia in recent years or why inflation has soared?
- ✓ why are millions of people unemployed even when the economy is registering successive growth or why some new graduates from universities couldn't find a job?
- ✓ Why do Ethiopia and other LDCs have such a huge trade deficit?
- ✓ What is the government budget deficit? How does it affect the economy?

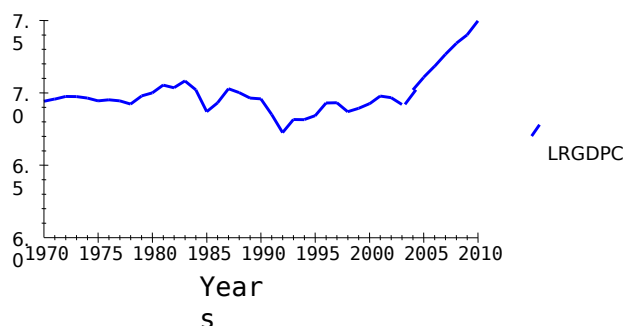
Fig 1.1 Annual headline inflation rates of Ethiopia (1970-2011), measured as percentage change in *consumer price index*



Source: data was taken from IMF's World Economic Outlook online

As can be seen from the figure the Ethiopian economy has been regarded as one of the lowest inflation economy. However, as of the year 2005, average annual inflation has risen consistently; this has turned the major concern of the general public to this problem.

Figure 1.2 logarithm of real GDP per capita of Ethiopia from the year 1970- 2010 (In 2000's constant Ethiopian Birr)



Source: Data was taken from World Bank's African Development Indicators

Why should we care about Macroeconomics?

Macroeconomic performance of a country is directly related to the lives and welfare of its citizen. An economy that has successful macroeconomic management should experience low *unemployment* and *inflation*, and steady and sustained *economic growth*. In contrast, in a country where there is macroeconomic mismanagement, we will observe an adverse impact on the living standards and employment opportunities of the citizens of that country.

Because macroeconomic performance and policies are closely connected, the major macroeconomic issues are also the subject of constant media attention and inevitably play a central role in political debate.

1.1 Macroeconomic Tools: Theories and Models

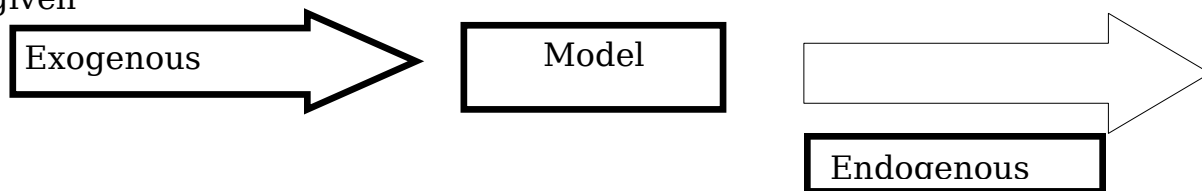
Modern economics, systematically studies different agents' economic behavior and economic phenomena by a scientific studying method-*observation*→*theory*→*observation*- and through the use of various analytical approaches. An economic theory consists of a set of assumptions and conditions, an analytical framework, and conclusions (explanations and/or predications) that are derived from the assumptions and the analytical framework.

Like any science, economics is concerned with the explanation of observed phenomena and also makes economic predictions and assessments based on economic theories. Economic theories are developed to explain the observed phenomena in terms of a set of basic assumptions and rules.

Macroeconomics makes heavy use of models. Economic models are simplified versions of a more complex reality- in which irrelevant details are stripped away. Put differently, models are simplified theories that show the key relationships among economic variables. A model relies on both simplifying and critical assumptions. When analyzing a model, it is crucial to spell out the assumptions underlying the model and realism may not a property of a good assumption. All models have three aspects viz. the story, the mathematical expression and graphical representation

Why we need economic models?

Economic models are used to show relationships between variables. Moreover, models are useful to explain the economy's behavior and devise policies to improve economic performance. Economic models illustrate, often in mathematical terms, the relationships among economic variables. Models have two kinds of variables: *endogenous* variables and *exogenous* variables. Endogenous variables are those variables that a model tries to explain and exogenous variables are those variables that a model takes as given



The most celebrated model in economics is the model of supply and demand

E.g. The demand and supply of houses in Yirgalem

$$Q_d = D(P, Y)$$

Demand equation

- +

$$Q_s = S(P, P_m)$$

Supply equation

+ -

$$Q_s = Q_d$$

for houses

Equilibrium market

In the demand equation price and income are exogenous variables while quantity demanded is endogenous variable. And the supply function tells us that, the quantity supplied (which is endogenous) for houses is positively affected by the price of houses and inversely affected by the price of inputs.

For each new model, you should keep track of, its assumptions, which variables are endogenous, which are exogenous, the questions it can help us understand, and those it cannot

Flexible Versus Sticky Prices:

A key feature of a macroeconomic model is whether it assumes that prices are flexible or sticky. Economists normally presume that the price of a good or a service moves quickly to bring quantity supplied and quantity demanded into balance. This assumption is called *market clearing*: an assumption that prices are *flexible*, adjust to equate supply and demand. However, many wages and prices adjust slowly. For instance labor contracts often set wages for up to three years. Many firms leave their product prices the same for long periods of time. Hence in the real world some wages and prices are *sticky*- adjust sluggishly in response to changes in supply or demand.

The economy's behavior depends partly on whether prices are sticky or flexible. The assumption of price flexibility is a good assumption for studying *long-run issues*, such as the growth in real GDP that we observe from decade to decade. For studying short-run issues, such as year-to-year fluctuations in real GDP and unemployment, the assumption of price flexibility is less plausible. Therefore, most macroeconomists believe that price stickiness is a better assumption for studying the short-run behavior of the economy.

1.2 The State of Macroeconomics: Its Evolution and Developments

The birth of modern macroeconomics as coherent and systematic approach to aggregate issues of an economy is attributed to **John Maynard Keynes** and his *General Theory of Employment, Interest and Money* published in

1936. Even if those issues that we consider them as macroeconomic issues, such as unemployment and business cycles, were discussed by the then economists, the idea of a separate subject that distinguishes macroeconomics from microeconomics did not take shape until Keynes (before Keynes macroeconomics was called as *business cycle theory*). Ever since its birth in modern form in the 1930s, macroeconomics has witnessed considerable progress.

There are a wide variety of schools of thought in economics in general, and macroeconomics in particular. These varied thoughts sometimes arise because our knowledge of the economy is imperfect or because certain facts are in dispute.

Friedman- the founder of Monetarism- once emphasized that there are issues at which macroeconomists consensually agreed but still there remains hotly contested and unresolved ones. Accordingly, there is wide agreement among macroeconomists about the major goals of economic policy: *high employment, stable price* and *rapid growth*. However there is least agreement about the role that various instruments of policy can and should play in achieving the several goals (Friedman, 1968 cited in Snowdon & Vane, 2005).

Mishkin (2012) outlined that there are six basic areas of disagreement among economists, viz. 1) how flexible wages and prices are, 2) how long it takes to get to the long run, 3) the sources of business cycle fluctuations, 4) whether stabilization policy is worthwhile, 5) how costly it is to reduce inflation, and 6) how dangerous budget deficits are.

The fundamental question that underlies disagreements between economists however, rests on matters of policy and practice, i.e. '*what is the proper role of government in the economy?*' Put succinctly, the real dividing issues between macroeconomists can be broadly stated as:

- ✓ **Can** the government influence the outcome of the economic process?
and
- ✓ **Should** the government influence the economic process?

Different intellectual wisdoms answer these questions in varied manner. In mainstream (or orthodox) economics, as contrasted to heterodox economics, we briefly distinguish:

- ✓ The Classical economists
- ✓ The Keynesians
- ✓ Neo-classical synthesis (a.k.a Neo-Keynesian synthesis)
- ✓ The Monetarists
- ✓ The New classical economists and Real Business Cycle
- ✓ The Supply Siders
- ✓ The New Keynesians

These macroeconomic intellectual traditions are often broadly defined as the *classical* and *Keynesian* approaches.

To preview the broad answers:

- “Keynesian economists” (broadly defined) generally answer “**yes**” to both questions
- “Classical economists” (broadly defined) generally answer “**yes**” to the first and “**no**” to the second question

1. Classical Economists:

Names: *Adam Smith, David Hume, David Ricardo, John Stuart Mill, Knut Wicksell and Irving Fisher*

For the classicals, there is no sharp distinction between microeconomics and macroeconomics. The classical tradition asserted that:

- ✓ The economy is *self regulating* mechanism
- ✓ Wages, prices, and interest rates are *flexible*. *That is* markets always “clear”, or returns to equilibrium, very quickly.
- ✓ Say’s law- the dictum, “supply creates its own demand”- holds true, so that insufficient demand in the economy is unlikely.
- ✓ For the classical economists long run, full employment (vertical aggregate supply), was the normal state of affairs.

Classical dichotomy: classicals distinguish between real (physical output) and nominal output, which is expressed in the quantity theory of money. Money for classicals is neutral- i.e. for the Classicals money is a veil which determines nominal price but does not affect real quantities and relative prices. This theoretical separation of real & nominal variables is called *Classical dichotomy*.

The policy implications of classical view is that of *Laissez-faire*-“leave it alone”- as the right and sensible economic policy. Government intervention, in the form of activist stabilization policies, would be neither *necessary* nor *desirable*.

2. The Keynesians

Keynes’s legacy: “Great depression/Great crash”-a massive decline in aggregate demand.

Many people argue that Keynesian economics sprout up as a result of the Great crash of the 1929 to 1933- where major economies of the world experience massive unemployment and decline in output- which until then the neoclassical belief was dominant.

Keynesian approach insisted on price and wage *inflexibility* and upward sloping supply curve with the implication that, output can deviate from its potential for indefinitely long periods. Keynes and his followers emphasised that, because wages and price are sticky (Keynesian economics is usually regarded as short run economics, as Keynes himself stated “*in the long run we are all dead*”¹), there is no economic mechanism that will quickly restore full employment and ensure that the economy produces at full capacity.

Policy implications: “Fine-tune the economy”

Active government intervention through fiscal policy can stimulate the economy and help maintain high levels of output and employment. For Keynes, monetary policy, however, is ineffective because the additional

¹ A fuller version of the quote: “This long run is a misleading guide to current affairs. In the long run we are all dead. Economists set themselves too easy, too useless a task if in tempestuous seasons they can only tell us that when the storm is long past the sea is flat again” (taken from Krugman & Wells, macroeconomics, pp. 262)

money will simply be absorbed by investors with no noticeable effect on the interest rate.

3. Neo Classical Synthesis

Names: Intellectual titans in economics science that include Paul Samuelson, James Tobin, Franco Modigliani, Robert Solow plus virtually all economists in 1950s and 1960s except Milton Friedman

It was Samuelson who introduced the label '*neoclassical synthesis*' into the literature and the 1960s was the heyday of neoclassical synthesizers. The neo classical synthesizers state that the economy is "*Keynesian*" in the short run but "*classical*" in the long run, hence the name neo-classical/neo-Keynesian synthesis. Neoclassical synthesizers believe that the long-run Aggregate Supply curve is vertical, however, in the short run, nominal wages are rigid downwards and expected price level is sticky. This opens up the possibility of unemployment and an upward sloping short-run Aggregate Supply (AS-*) curve.

Policy view:

Both monetary and fiscal policy can affect the economy in the short run and presume the government should pursue a *counter-cyclical* policy.

4. Monetarists

Names: Milton Friedman and his "Chicago boys"

The roots of monetarism emanated from the "quantity theory of money"

$$M = kPY$$

Where, M= is money supply, P= price level, Y = real output and $1/k = V$ is velocity of circulation of money, which is assumed as stable

Monetarism holds that the money supply is the major determinant of short run movements in nominal GDP and of long run movements in prices.²

² . Friedman and Schwartz took historical data of the United States in their "monetary history of the United States, 1867-1960," published in 1963 and conclude that economic fluctuations including the Great Depression as purely caused by changes to the stock of money supply.

Moreover, Prices and wages are relatively flexible and Philips curve (the inflation-unemployment tradeoffs) does not hold in the long run.

From these beliefs Friedman concluded in one of his famous dictum about inflation as: *"inflation is always and everywhere a monetary phenomenon."*

Policy Implications

For monetarists, fiscal policy is "irrelevant" because if V is stable, the only force that can affect PY (nominal GDP) is M . Hence there is no fiscal policy variable that the policy maker can influence. Monetary policy, however, is potent but policy makers make timing errors ("long and variable lags") and may exacerbate the cycle. Thus, there should be rather constant money *growth rule*- set the growth of the money supply at a fixed rate and holds to that rate through all economic conditions.

5. New Classical Economists

Names: Robert Lucas, Robert Barro, Thomas Sargent, Neil Wallace, Edward Prescott

They are also called "fresh water economists"- spearheaded by Robert Lucas- and distinctively emerged during the 1970s. These economists are natural successors to the classical economists and firmly back classical ideas. Central working assumptions of new classicals include: *first* economic agents make *optimal* decisions, *second* expectations are *rational*- i.e. people use all available information in their decision, hence the government cannot fool the people-, and third, *markets clear continuously*. New Classicals claim that all the fluctuations that we observe in the economy are due not to nominal rigidities as Keynesians claim but are due to rational agents responding to the incentives as they observe them.

Policy Implications:

Policy ineffectiveness proposition (PIP) - *"direct critique to monetarism"*

The new classical school in particular supports the view that the authorities *cannot*, and therefore *should not*; attempt to stabilize fluctuations in output and employment through the use of activist demand management policies. This is because their analysis suggests that (i) an anticipated increase in the money supply will raise the price level and have no effect on real output

and employment, and (ii) only unanticipated monetary surprises can temporarily affect real variables

Another breed of new classicals is Real Business Cycle theory—usually abbreviated as RBC (with leading figures: Finn Kydland and Edward Prescott). They rely on rational expectations and competitive markets but emphasizing on *supply side shocks* as causes to business cycle. They assume that output is always at its natural level. That means all fluctuations in output are movements of the natural level of output, as opposed to movements of output away from the natural level of output. Accordingly business cycles are purely caused by real shocks—equivalently *supply side shocks*—i.e. productivity shocks caused by due to improvement in technology, the introduction of new management techniques, changes in the quality of capital or labor, changes in the availability of raw materials or energy, unusually good or unusually bad weather, changes in government regulations affecting production, and any other factor affecting productivity. According to RBC economists, most economic booms result from beneficial productivity shocks, and most recessions are caused by adverse productivity shocks.

6. Supply Siders (Ultra-classicism, due to Samuelson)

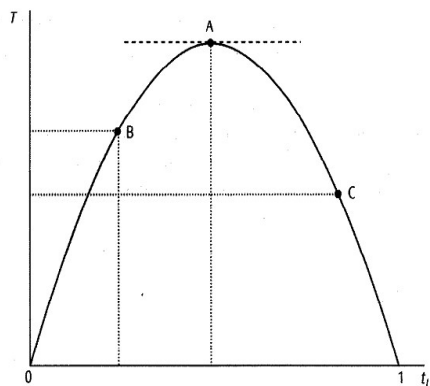
Names: Arthur Laffer, Robert Mundell

They were radical conservatives with strong distrust of “the government” and emphasize on distorting aspects of taxation. Major contribution of the supply siders was the so called Laffer curve, which shows that high tax rates shrink the tax base because they reduce economic activity

President Reagan and Prime Minister Margaret Thatcher loved the views of the supply siders and even apply their policy advice but the result was huge budget deficit

Fig 1.3 the Laffer curve

The horizontal axis depicts the tax rate levied on labor (t_l) and the vertical axis shows tax revenue (τ). If the tax rate was lower, increasing the rate will increase revenue. However, the increase in tax rate beyond, say, point “A” would actually decrease revenues. Beyond point A. sav. at



Policy Advice:

Cut tax rates and then stimulate the economy. They argued that there was no need to cut government spending, tax cut would pay for itself.

7. New Keynesian Economists

Names: Edmund Phelps, Stanley Fischer, John Taylor, Olivier-Jean Blanchard, Greg Mankiw, Lawrence Summers, George Akerlof, David Romer, Janet Yellen, Ben Bernanke, Joseph Stiglitz...

They are also called 'Saltwater' economists. These economists derive their inspiration from John Maynard Keynes. They assume that markets are *prone to fail* or to be incomplete hence stressed in the existence of nominal rigidities, arising from, for example, multi-period nominal wage contracts.

The most recent wave of new Keynesian economics is more micro based but they accept more or less, the rational expectations hypothesis. The predominance of imperfect competition, incomplete markets, coordination failures, and credit market imperfections- for example "credit rationing model" of Stiglitz and Weiss- are stressed. Their policy advocacy is, the government *can* and *should* intervene in the macro economy. But because new Keynesians believe in rational expectations so that expectations can change rapidly, they recognize that designing activist policies to stabilize the economy is far from easy. The effects of anticipated and unanticipated policy will not be the same.

To recapitulate the developments in modern macroeconomics (Blanchard, macroeconomics 3rd Ed, 2003):

- The history of modern macroeconomics starts in 1936, with the publication of Keynes's general theory of employment, money and interest. Keynes's theory was formalized in the IS-LM model of John Hicks and Alvin Hansen in the 1930s and early 1940s.
- The period from the early 1940s to early 1970s is called the golden age of macroeconomics. Among the developments were the theory of consumption (by Modigliani and Friedman independently), investment, money demand and portfolio choice (James Tobin), the development of growth theory (Robert Solow), and the development of large macro econometric models (Lawrence Klein).
- The main debate during the 1960s was between Keynesians and Monetarists. Keynesians believed developments in macroeconomic theory allowed for better control of the economy. Monetarists, led by Milton Friedman, were more skeptical of the ability of governments to help stabilize the economy.
- In the 1970s, macroeconomics experienced a crisis for two reasons: one was the appearance of **stagflation**- high unemployment coupled with high inflation- which came as a surprise to most economists. The other was a theoretical attack led by Rob Lucas. When rational expectations were introduced, 1) Keynesian models could not be used to determine policy, 2) Keynesian models could not explain long lasting deviations of output from its natural level, and 3) the theory of policy needed to be redesign using the tools of game theory.
- Much of the 1970s and 1980s were spent integrating rational expectations in to macroeconomics. Macroeconomists are now much more aware of the role of expectations in determining the effects of shocks and policy, and the complexity of policy, than they were two decades ago.
- Current research in macroeconomics is proceeding along three lines: new classical economists are exploring the extent to which fluctuations can be explained in the natural level of output, as opposed to movements away from the natural level of output. New Keynesian economists are exploring more formally the role of market imperfections in fluctuations. New growth theorists are exploring the role of R&D and the increasing returns to scale in growth.
- Despite the controversies, there exist a set of propositions on which most macroeconomists agree. Two of these propositions are 1) in the short run, shifts in aggregate demand affect output; and 2) in the medium run, output returns to its natural level

