

# Macroeconomics

## *for Emerging East Asia*

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# 1. Fitting Macroeconomics to Emerging East Asia

*East Asia has given rise to some of the most spectacular economic performances of the post-World War II era. It has also borne some of the most serious setbacks. The world over, bust follows boom and boom in turn follows bust in unrelenting cycles. Notably for East Asia, as the region has become more integrated internally and with the outside world, the cycles have become more synchronized.*

Many East Asian economies have managed to sustain double-digit growth rates for a few years at a stretch – Japan, Hong Kong, Singapore, Korea, Taiwan, China, Thailand, and as of the 2000s even Myanmar and Cambodia, are all members of this club. But such high rates of growth rarely last more than a few years. Singapore stands out for having achieved growth in excess of 10 percent for nine consecutive years from its independence in 1965 to 1973. Recently, Myanmar appears to have beaten this record with an 11-year run of double-digit growth beginning in 1999, if official statistics are to be believed (see end of chapter Data Note).

More typically though, boom times are brief, and what's more, are often followed by bust. Spurts of growth intermix with periods of sluggishness or even contraction. Singapore's storied success was punctuated by repeated setbacks, with growth going negative in 1985, 1998, 2001, and 2009. The Asian Financial Crisis of 1997-98 plunged much of East Asia into negative growth territory. At the epicenter of the crisis, Thailand experienced a particularly virulent turn, coming through a decade of expansion at near double-digit levels only to see output growth drop to -1.4 percent in 1997 and then -10.5 percent the following year.

Fluctuations in economic growth, and the policy measures aimed at containing them, are the central concern of this book. This chapter introduces the subject matter and explains why the treatment presented in standard U.S. texts is a poor fit for Emerging East Asia. The 13 economies within our purview are: Cambodia; China; Hong Kong; Indonesia; Korea<sup>1</sup>; Laos; Malaysia; Myanmar; the Philippines; Singapore; Taiwan; Thailand; and Vietnam.

Our focus in this text is on short-run deviations from long-run potential growth. For our purposes, the conceptual basis for long-run potential growth can be characterized succinctly, and we accomplish this in this first chapter. Long-run potential provides a reference against which to mark output gaps wherein the economy temporarily overshoots or undershoots a sustainable path. A high degree of volatility around the norm rate of growth is undesirable. Shortfalls involve loss of employment and income, as well as missed investment opportunities. But overshooting, too, imposes losses as resources are misallocated into projects that are not ultimately viable sowing the seeds of dislocations to come. More generally, volatility complicates planning for the future and inhibits entrepreneurial risk taking. Government policy thus seeks to stabilize growth and keep output gaps to a minimum.

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<sup>1</sup> Korea refers to South Korea (Republic of Korea) in this text.

The first section of this chapter defines macroeconomics, drawing the contrast with microeconomics, and then presents graphically the main phenomenon to be understood: growth fluctuations for our 13 economies as viewed over the last half century plus. The second section explains the concept of long-run potential growth, against which output gaps are registered, and examines the controversy surrounding how the early break-out economies of Emerging East Asia sustained their extraordinary growth rates. Theories of output gaps are introduced in the third section, with attention to why the economies of Emerging East Asia are particularly prone to volatility. The fourth section discusses stabilization policy, again with attention to the particulars of Emerging East Asia. The final section summarizes the book and provides an outline chapter by chapter.

Many complex topics are introduced superficially in this chapter. The rest of the book is dedicated to fuller exposition.

## Macroeconomics Defined

An economy is made up of multitudes of diverse individuals making choices in pursuit of their own interests. Households make choices about how much of their incomes to spend or save, what products to buy or assets to hold, how to make the most of their time and talents in the marketplace. Business managers make choices about designing and producing products, employing workers, investing in plant and equipment, adopting and developing technologies, borrowing money or taking on equity investors, and distributing profits. No omniscient planner coordinates this vast array of activity, yet somehow it takes on a coherence. And in the aggregate, the activity coalesces to move as an integrated whole, cycling through boom and bust.

In this section, we flesh out the concept of macroeconomics by contrasting it with microeconomics. We then offer a first glimpse of the phenomenon to be explained by charting growth fluctuations over the last six decades for the economies of Emerging East Asia.

### *Macro vs. micro*

Macroeconomics looks at the big picture of aggregate output and the general price level, and seeks to understand movement in these indicators over time. Microeconomics focuses on the behavior of individual households and firms and how this behavior is expressed in markets to determine relative prices and patterns of resource allocation among alternative uses. Systematic parallels between macro and micro are drawn in Box 1.1.

Microeconomics takes households and firms, of a stylized sort, as its basic building blocks. Households are assumed to maximize utility (i.e., well-being) by selling the factor inputs to production – labor, capital, land, and entrepreneurship – and buying goods and services. Firms are assumed to maximize profits by operating on the opposite side of these exchanges, buying factor inputs and selling goods and services. Market participants bid against one another to arrive at prices that equate demands and supplies. Under competitive market conditions, microeconomic theory holds that scarce resources will be allocated to the uses in which they are most highly valued. The “Invisible Hand” of the market, in the metaphor of Adam Smith (1776), thus achieves an efficient outcome in a way that no planning authority could hope to match.

Yet, while micro theory adheres to a story of markets reaching equilibrium, macro theory is concerned with instability in an aggregate that is ostensibly the sum of its micro parts. There is

a seeming disconnect in this. For macro must contend with resources at times being less than fully utilized and the price level being broadly unstable even as micro presents a vision of markets clearing through price equilibration. At the macro level, the unemployment rate and the inflation rate are standard indicators of how an economy is performing relative to its potential. An economy in a downturn experiences rising unemployment and weakening inflation or even a falling price level. Conversely, in an expansion, labor markets tighten and inflation heats up. Equilibrium seems elusive in the macro realm.

### Box 1.1: Macro vs. micro

**Macroeconomics** deals with an economy as a whole. Attention is on aggregate production of output and utilization of resources. The key performance indicator is the total value of final goods and services produced during a period of time. In contrast, **microeconomics** focuses on the allocation of resources to produce a mix of goods and services. Attention is on how the forces of supply and demand determine activity in particular markets

Prices are of interest in **macroeconomics** for how they move overall. A key indicator of macroeconomic stability is the inflation rate. In **microeconomics** relative prices are what matters. Some products are relatively cheap, others relatively expensive, and microeconomics seeks to explain why.

The degree of resource utilization relative to potential is of concern in **macroeconomics**, the unemployment rate being the standard measure of this and, along with inflation, a key indicator of stability. **Microeconomics** looks at the allocation of resources among competing uses.

Finally, the external sector comes into play in **macroeconomics** with respect to an economy's overall payments position with the rest of the world. Whether an economy is running a surplus or deficit in its international trade and financial accounts has implications for macroeconomic performance and policy. In **microeconomics**, the composition of imports and exports is of interest.

	MACRO	MICRO
<b>General Purview</b>	size of an economy in the aggregate; long-term growth and short-term fluctuations	activity in particular markets as determined by forces of supply and demand
<b>Prices</b>	movement in the general level of prices, the inflation rate being the key indicator	relative prices, or why some things are cheap and others expensive
<b>Resources</b>	utilization of resources relative to capacity, the unemployment rate being a prime indicator	allocation of resources among alternative uses
<b>External Sector</b>	overall balance in international trade and financial flows	composition of exports and imports, and impact of trade and foreign investment by sector

How can the disconnect between micro and macro be reconciled? The failure of the labor market to clear (i.e., the existence of unemployment) may be explained by lags in adjustment to shocks or by rigidities in wage bargains that limit downward adjustment and thus compel firms to layoff workers when they must cut costs. And movements in the macro price level can occur irrespective of the structure of relative prices that pertain to micro. In any case, some disconnect

between micro and macro should not be too disconcerting. Each body of thought is concerned with explaining different phenomena: micro with the way markets coordinate the allocation of resources and the distribution of products to achieve an outcome in the moment; macro with the way the aggregate of this activity moves over time. Each theoretical system should be taken on its own terms with a view to its particular purpose.

For a large economy with a relatively small foreign sector, the study of macroeconomics can proceed with respect to the domestic realm, leaving an international dimension to be grafted on ex post. This is the typical approach of textbooks focused on the U.S. economy. However, for the outward oriented economies of Emerging East Asia, external influences must be treated as integral. External shocks – for example, swings in global commodity prices, movements in exchange rates, or changing perceptions of risk that drive foreign capital flows – are a major source of volatility for these economies. External imbalances in trade or financial flows can be sustained to a point, and that point can be stretched with concerted macro policy action. But ultimately, vulnerabilities may develop or tipping points may be reached with disruptive consequences when corrections finally occur. External balance is thus central to the study of macroeconomics for Emerging East Asia.

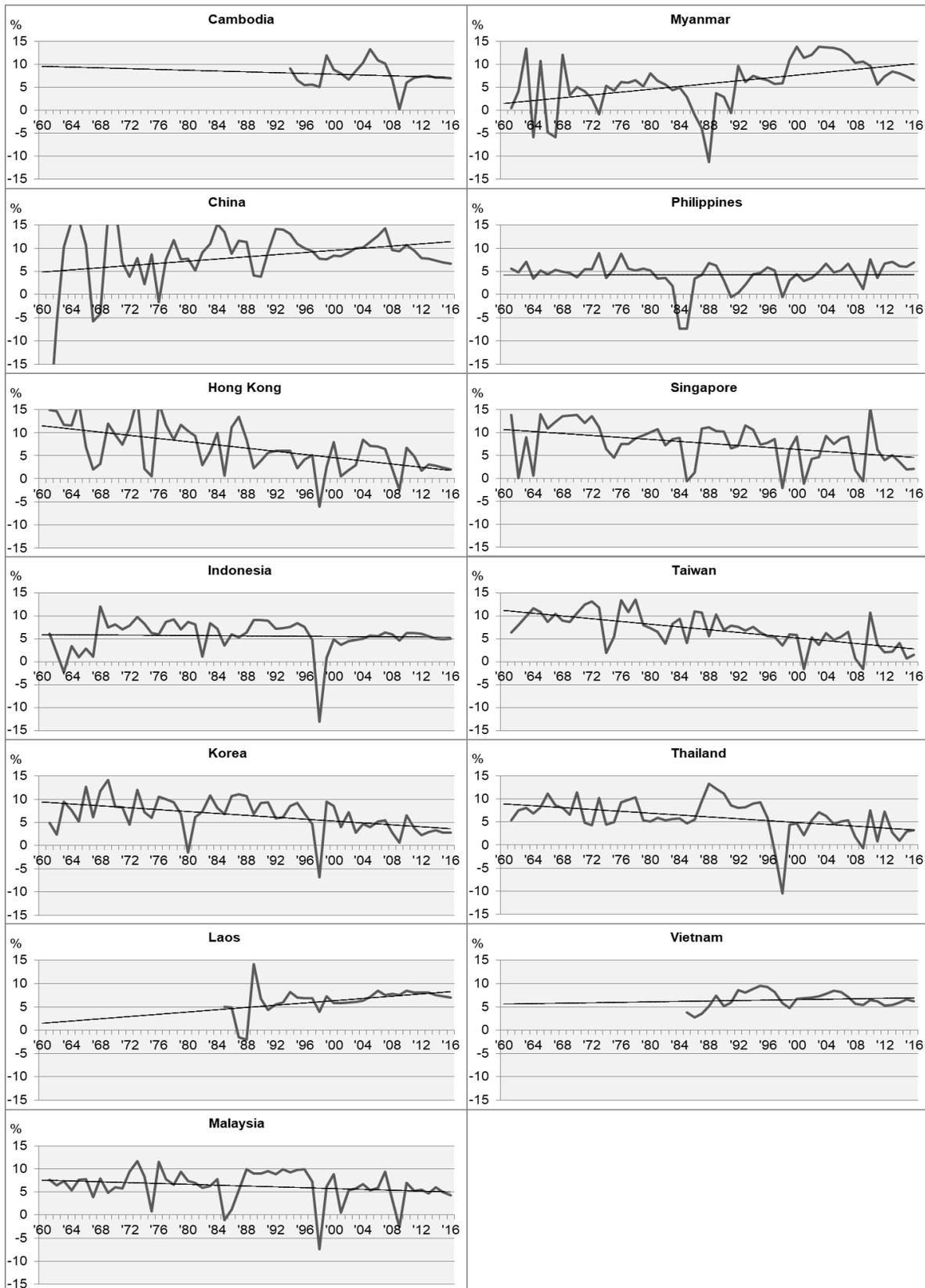
### *Fluctuations around potential growth*

The principal measure of macroeconomic performance is gross domestic product (GDP) which captures the value of all final goods and services produced in a given period of time. This includes both consumption and investment products. Nominal GDP growth rates are calculated based on current year prices. Subtracting the rate of inflation yields real GDP growth at constant prices.

Real GDP growth rates for our 13 economies for the period 1960-2016 are presented in Chart 1.1. The scaling of the axes allows for growth as high as 15 percent and as low as -15 percent, with the numbers sometimes going off the chart in early years although not since the 1970s. The most extreme negative value was for China in 1961 at -27 percent, and indeed this is the only instance of a growth rate dropping below the negative bound of the scale. Known in China as the “difficult period”, the early 1960s saw tens of millions of people lose their lives to famine as food production collapsed under Mao Zedong’s ill-conceived Great Leap Forward. Later in the 1960s and 1970s, both China and Hong Kong saw growth rates spike above 15 percent within a context of extreme volatility.

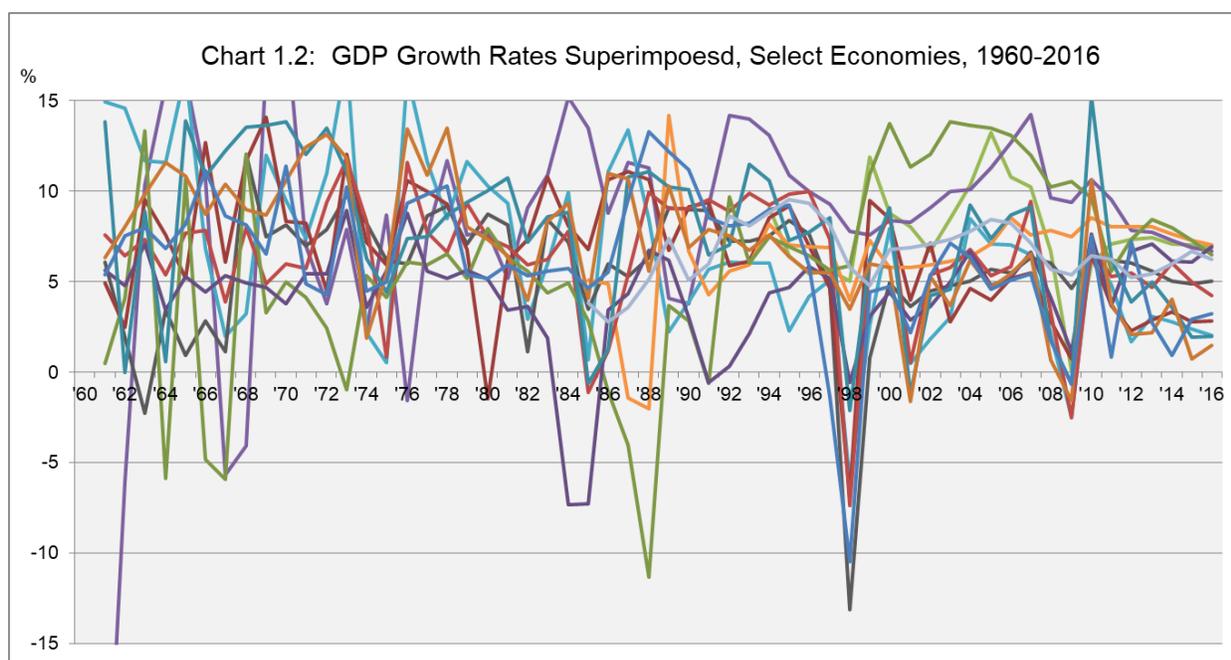
Growth has at some point reached more than ten percent for all economies in the region except the Philippines and Vietnam (the latter on the basis of data only since 1985). And it has plunged into negative territory without exception for all those economies for which full time series are available. Volatility is a reality no economy has escaped. Even from one year to the next, wide variation in growth rates is common. Of a total 634 year-to-year points of comparison yielded by our sample, 107, or nearly one in five, involve a more than five percentage point change.

Chart 1.1: Real GDP Growth Rates, Select Economies, 1960-2016



For each economy, Chart 1.1 shows a trend line representing a linear approximation of the growth rate over time. The linear form of the approximation means that values can go to extremes toward the ends of the time period. Subject to this caveat, the slope of the line provides a clue as to movement in the growth rate up or down over time. Economies that reached middle income status earlier (such as Hong Kong, Korea, Singapore, and Taiwan) have generally experienced slowing growth rates during the period under examination whereas those emerging later (such as China, Laos, Myanmar, and Vietnam) have shown rising growth rates.

Patterns over time in the regional coincidence of fluctuations can be discerned by superimposing the growth rates of our 13 economies, shown in Chart 1.2. The Asian Financial Crisis stands out for its severe impact on nearly the entire region at once in 1998. Prior to this, deep recessions were usually confined to a single economy, although milder growth slowdowns of a more shared nature are visible in some years (1964, 1967, 1982, and 1985). From the Asian Financial Crisis onward, synchronization is more pronounced. Sharp dips in growth rates were again broadly registered in both 2001 and 2009. In recent years, the economies of Emerging East Asia have become more integrated both with one another and with the outside world. Individual economies have thus tended to get more caught up in forces emanating from beyond their borders.



## Potential Growth

With all the variation in growth rates on display – not only from year to year within economies but in long term trends across economies – how are we to discern long-term potential? In this section we examine the underpinnings of potential growth using a formal growth accounting framework. We then review empirical applications of the framework to Emerging East Asia.

Even a formal accounting framework leaves much ambiguity about what *can* be achieved as opposed to what *has* been achieved. For purposes of macroeconomic stabilization policy, the reality is in any case more pragmatic discovery process than modeling exercise. An economy's potential growth is marked most tellingly by that threshold beyond which inflation accelerates. The goal of policy is to bring the economy as close to potential as possible without crossing the line. As a practical matter, potential is discerned by pushing the limits. Growth accounting acts as an aid in envisioning those limits.

### *Growth accounting*

The conceptual foundation for growth accounting, as laid out by Robert Solow (1957), rests on a distinction between increases in the factor inputs to production and increases in the productivity of factor inputs. For growth accounting purposes, the key factor inputs are capital and labor (land not varying appreciably over time and entrepreneurship, varying or not, not readily measurable). Formally, the contribution of capital to output growth is given by the rate of increase in capital, represented by  $\dot{K}$ , times the rate of return to capital, i.e., the profit rate, represented by  $\pi$  (pi). Similarly, the contribution of labor is given by the rate of increase in labor,  $\dot{L}$ , times the rate of return to labor, i.e., the wage rate,  $w$ . Output growth is given by  $\dot{Y}$ , and that part of output growth explained by an increase in total factor productivity by TFP. Putting the pieces together, we have:

$$\dot{Y} = TFP + \pi \cdot \dot{K} + w \cdot \dot{L}.$$

More detailed formulations of the contributions of labor and capital are possible. Labor may increase not only quantitatively, but qualitatively through human capital formation, with years of schooling typically taken as the measure of this. Quantitative increases in labor may trace to: (1) increases in the labor force due to (1a) increases in working age population or (1b) increases in labor force participation among those of working ages; or (2) changes in hours worked per labor force participant. Increases in capital result from new investment, which is partially offset by depreciation of existing capital. Breakdowns by form of investment (plant, equipment, residences, infrastructure) and vintage are possible. This finer parsing of labor and capital inputs allows for more closely calibrated measurement of their impact on growth affording a clearer delineation of the residual element, TFP.

The TFP residual captures a wide variety of influences. Foremost among these is technological innovation. The advance of knowledge allows more to be achieved with given resources. Another influence, important in developing economies, is the transfer of labor out of subsistence agriculture into formal industrial and service sector employment. Migration from farm to factory involves a leap across a productivity chasm when poor dirt farmers take up work in the city. Finally, institutional development can contribute monumentally to productivity growth. The strengthening of market functioning and the fostering of private enterprise are great boosters of effort, entrepreneurial energy, and efficiency in resource use.

### *Empirical application to Emerging East Asia*

Growth accounting exercises for Emerging East Asia have ignited a firestorm of controversy. A study by Young (1995) of Hong Kong, Korea, Singapore, and Taiwan for the period 1966-1990 traced most of the extraordinary growth recorded to increases in factor inputs

leaving little, or in the case of Singapore less than nothing, to be explained by improvements in TFP. The four tigers, as they are known, invested heavily in both physical and human capital, and put more of the population to work as females increasingly entered paid labor and falling birth rates concentrated more of the population in working ages. Hard work and sacrifice, then, rather than technological advance and economic progress, were alleged to have been the basis for growth.

The finding that East Asia's success derived mainly from "perspiration" rather than "inspiration" in the words of Krugman (1994) did not sit well within the societies being studied. The findings suggested that growth had come at a very high cost in terms of foregone consumption and leisure, and that in the extreme case of Singapore investment had been pushed to a point of negative returns. With saving rates and labor force participation reaching the limits of feasibility, the implication was that the East Asian development model was close to exhaustion, and that absent improvements in productivity, growth was about to hit a wall.

Results of growth accounting studies are sensitive to tweaks in methodology, and other researchers have come to less extreme conclusions. A report by the International Monetary Fund (2006) offered mixed findings on TFP for a broad selection of Emerging East Asian economies. The period under review started from an economy-specific year of growth take-off and extended to 2005. The report showed TFP growth having contributed more importantly among the four tigers than Young estimated, and very importantly to China's much higher growth, although negligibly to the more modest growth of the ASEAN-4 comprising Indonesia, Malaysia, the Philippines, and Thailand. Heavy reliance on investment in physical and human capital to achieve growth remains characteristic of the region. Once that is recognized, the wedge left for attribution to TFP increases takes on moment only with very high GDP growth.

The formal growth accounting framework is useful for benchmarking potential. Projections of labor and capital increases combined with expectations about productivity growth can suggest a feasible trajectory for an economy. A modeling exercise such as this presents a loose reference point for macro stabilization policy. But more immediate, tangible indicators of output gaps take on greater influence in the practical affairs of policymaking. We now turn attention to these indicators.

## Output Gaps

Growth above potential is indicated by accelerating inflation, growth below potential by resource under-utilization. We elaborate on the manifestations of output gaps in this section with attention to the particularities of emerging market economies. We then approach the controversial subject of how to interpret fluctuations in growth. Much disagreement revolves around what causes fluctuations and whether or not an economy will tend to self-correct and return to its potential path automatically. Differences in views on these theoretical issues lead to differences in positions on how to conduct stabilization policy.

### *Measuring output gaps*

Over-performance relative to long-run potential results in a positive output gap, under-performance a negative output gap. A positive output gap is also known as an inflationary gap. As growth outstrips potential, bottlenecks develop in markets for labor and other resources. This puts upward pressure on wages and prices. Low levels of inflation on the order of two percent or

so are generally conducive to healthy economic development. A little inflation allows for easy adjustment in relative prices to reflect changes in costs or other market conditions. Higher and accelerating inflation becomes problematic, however, especially as uncertainty mounts and this clouds decision-making. Lenders worry about lost purchasing power of funds being repaid them and call for higher interest rates, which borrowers may be reluctant to take on. Investment consequently tends to shift to riskier endeavors. Keeping inflation low and stable is therefore an important macro policy objective.

A negative output gap is also known as a deflationary or recessionary gap. In mature market economies, the unemployment rate is the most closely watched indicator of a negative output gap. In emerging market economies, however, reported unemployment rates are generally not very meaningful. Much of the labor force is absorbed in agriculture or informal urban activities such as street vending or day labor. For the stratum of society eking out an existence in such pursuits, work is often erratic and insecure. People nevertheless find a way to survive, and unemployment strictly speaking is not much of an option. Official unemployment rates typically pertain to the formal segment of the labor force, members of which are entitled to benefits and officially register their unemployment status. In the emerging market context, the more telling way to gauge lagging economic performance relative to potential is by comparing the number of jobs created in the urban formal sector with some measure of potential based on demography and urbanization. If the economy is not creating enough jobs to absorb school leavers and a steady stream of those transitioning from agricultural and informal urban activities, this signals a negative output gap. The employment focus is thus on the rate of formal job creation rather than a not readily measured, or even conceptualized, unemployment rate. Job creation is in turn closely tied to GDP growth with a shortfall relative to trend the practical indicator of a negative output gap.

### *Interpreting output gaps*

Historically, the thinking on output gaps has swung between the Classically rooted view that such gaps will be quickly and spontaneously eliminated – if indeed they ever exist at all – and its opposite that negative gaps in particular can take hold with no hope of reprieve other than through government intervention. For Classical economists, the wage rate adjusts to clear the labor market such that unemployment does not persist and prices adjust to clear product markets such that unwanted inventories do not accumulate. This paradigm largely held sway until the Great Depression of the 1930s. But with unemployment in the U.S. reaching 25 percent in 1933 and remaining at 19 percent five years later, Classical theory proved seriously unconvincing.

John Maynard Keynes (1936) stepped into the ideological breach offering a whole new way to think about economic malaise. “Animal spirits”, in Keynes’s view, were the driving force behind booms and busts. For risky investments to be taken on and consumer spending to thrive, people have to be optimistic about the future. If investors lack confidence that new projects will generate returns or workers are concerned about losing their jobs, spending will contract all around. Negative expectations held on a broad scale will be self-fulfilling. When business managers detect sales weakening, they cut production. Interest rates can bottom out near zero, yet still leave entrepreneurs fearful of taking the risk to borrow for new projects. Workers resist wage cuts pushing employers to reduce staff in order to pare expenses. The future seems bleak, so spending is inhibited; but with spending inhibited, the economy indeed fails to regain momentum.

On the boom end of the cycle, labor markets tighten and upward pressure on wages and prices builds. The combination of high inflation and high unemployment was regarded by Keynesians as a logical impossibility, the former being associated with economic expansion, the latter with its opposite, recession. Perplexingly, however, this phenomenon of “stagflation” materialized in the U.S. in the early 1970s. This turn of events put theory once again at odds with reality, prompting the next revolution in economic thinking.

Rational expectations theory, formulated by Robert Lucas (1972), resolved the conflict by positing that price increases are the foreseeable consequence of rapid money supply growth. With price increases predictable, wages are bid up in nominal terms even as in real terms they do not purchase anything more or may even purchase less. Rising nominal wages can thus coexist with weak labor markets when real wages are stagnant. Rational expectations theory brought with it a return to Classical views of markets equilibrating in a smooth and timely fashion to keep economies operating at their potential. Fluctuations in employment were attributed to the rational choice of economic agents in response to shocks affecting productivity. Productivity shocks were cast as the driving force in business cycles. Such shocks could emanate from a whole host of sources: new technologies; government policies; changes in global market conditions; financial market gyrations; mass shifts in confidence. Rather than accept lower pay in the wake of negative shocks to productivity, workers would rebalance their time allocation to activities other than formal employment (going back to school, bonding with family, tackling home improvement projects, traveling, keeping fit), until labor market conditions improved. Ups and downs in economic performance were woven into the fabric of a life lived in stages.

Because money plays no part in this shock-based theory of fluctuations, it is known as real business cycle theory. Money is deemed to be neutral; that is, changes in the money supply are seen as uniformly shifting wages and prices with no consequences for the real magnitudes of employment and output. Under this view, fluctuations in real activity are caused entirely by non-monetary shocks; movements in prices are driven independently by the money supply.

Real business cycle theory met its reality check with the global financial crisis of 2008. Credit growth was an obvious precursor to the crisis, fueling a boom that then turned to bust. The neglect of the financial aspect of business cycles suddenly seemed a major oversight. To fill this omission, attention turned to the work of a follower of Keynes, Hyman Minsky, with the crisis branded a “Minsky moment”. Minsky (1986) argued that boom times were driven by credit. In an expanding economy, borrowing to support risky endeavors is widely rewarded. This encourages speculative undertakings to proliferate. Asset prices are bid up on sheer momentum, with valuations becoming divorced from the revenue streams that the assets generate. At some point, though, the debt load becomes unsustainable. Financing cannot be rolled over; payments are missed; and finally the bubble bursts. Credit then contracts, and the economy goes into retrenchment. How it becomes stuck in this under-performing state is the Keynesian story. Minsky’s contribution was to embed Keynes’s ideas into an endogenous dynamic that explains the rise and fall of the business cycle.

These ideas will be developed in depth in later chapters. For now, the purpose is to provide a basis for drawing out the particulars of a macroeconomics for Emerging East Asia.

### *Emerging East Asia particulars*

The economies of Emerging East Asia differ in important respects from the economy that is the focus of most macroeconomic textbooks used in the region. The U.S., in all its uniqueness, is possessed of: a low trade ratio to GDP; the world's dominant reserve currency; and deep and diversified financial markets that move global interest rates. In contrast, the economies of Emerging East Asia are: heavily trade oriented; home to currencies for which maintaining confidence is a concern; and dependent on financial systems that operate under constraints unknown to the U.S. These differences have critical implications for vulnerability to macroeconomic instability and the policy mechanisms used to counter it.

Their heavy involvement in international trade and finance exposes the economies of Emerging East Asia to external shocks from shifts in global demand and supply conditions. As emphasized by real business cycle theory, such shocks can drive volatility in domestic employment and income, in Emerging East Asia to a powerful degree. An initial real shock can take on major macroeconomic proportions if the confidence of outsiders is shaken. Access to international credit may be jeopardized and faith in the economy's currency undermined. Currency depreciation can then make foreign debt servicing even more difficult, hence access to credit becomes even more restricted, and the economy goes into a tailspin. This is how crises unfold.

To guard against such threats, central banks in the region have accumulated sizeable foreign exchange reserves as a bulwark against loss of confidence. They accomplish this reserve accumulation by intervening in currency markets, buying foreign exchange with domestic currency newly minted for the purpose. Such reserve accumulation allows for stabilization of the exchange rate when a currency comes under threat. More generally, exchange rate stabilization can serve broader economic ends as well. A stable currency, provided the value is maintained at a credible level, can facilitate business planning and investment by reducing uncertainty.

Financial systems within the Emerging East Asia region differ greatly in depth and sophistication. At one extreme Hong Kong and Singapore are modern, globally integrated financial centers while at the opposite extreme market forces in some economies play a very circumscribed role in setting interest rates and allocating credit. The process of financial liberalization and development is invariably protracted, and prone to fits and starts. In the course of the transition, credit growth can be erratic. Volatility is aggravated by weak regulatory frameworks and implicit government bailout guarantees. In the spirit of Minsky, such credit cycles tend to generate booms and busts in the economy at large.

Due to both external and domestic factors, then, fluctuations in Emerging East Asian economies have been given to extremes. Exchange rate management can help to contain volatility, but this holds critical implications for the conduct of macroeconomic stabilization policy. So, too, does the state of development of the financial system. The next section elaborates.

### **Stabilization Policy**

Two types of policy exist for stabilizing economic growth: monetary policy and fiscal policy. Stabilization policies work through their effect on aggregate demand, where aggregate demand refers to total desired spending on final goods and services. Monetary policy operates through central bank influence over credit creation by commercial banks. Fiscal policy involves

government spending and taxation. We explain each type of policy in turn in this section, highlighting the features that distinguish the Emerging East Asia policy milieu.

### *Monetary policy*

Classical economics, along with the real business cycle theory built on Classical foundations, treats money as affecting the price level only and not real economic activity. The evidence, however, is compelling that certainly in the short run, changes in money supply growth affect real activity even if in the long run the effect is channeled into prices. In practice, all governments rely on monetary policy to manipulate aggregate demand. Such policy efforts seek to balance the competing goals of low inflation and output growth at potential.

Monetary policy works through central banks influencing the capacity of commercial banks to create loans. In developed market economies, short-term interest rates serve as a gauge of lending conditions. Low interest rates are associated with a policy of easy money aimed at stimulating the economy. Conversely, high interest rates indicate a policy of tight money designed to restrain the economy. In the U.S., the overnight interest rate charged by banks lending to each other is the direct target of conventional monetary policy. The central bank achieves a given interest rate target through its power over the supply of funds on the inter-bank credit market. By injecting funds more generously, the central bank puts downward pressure on interest rates; by withdrawing funds or tightening issuance it pushes interest rates up. Through such intervention in inter-bank credit markets, the U.S. central bank exercises influence over the domestic money supply.

Among the economies of Emerging East Asia, monetary policy operates through diverse institutional arrangements. Hong Kong and Singapore possess globally integrated financial markets and tightly managed exchange rates. With investment funds freely mobile across the border, domestic interest rates must align with international rates leaving central banks little scope for activism. In Hong Kong where the exchange rate is fixed to the U.S. dollar, domestic interest rates are dictated by U.S. rates. In Singapore where the exchange rate is manipulated relative to a basket of currencies, interest rates diverge from global norms to absorb market expectations about future exchange rate movements. For example, if the Singapore dollar is expected to appreciate relative to the U.S. dollar, interest rates in Singapore will move commensurately lower than in the U.S. because investors will anticipate making up the difference through gains in the value of the Singapore currency. In both Singapore and Hong Kong, control over the exchange rate in the presence of open capital markets determines monetary policy because central bank buying and selling of domestic currency in the foreign exchange market feeds directly into changes in the domestic money supply.

Many economies in the region with less mature financial systems impose controls on international capital flows creating a buffer between domestic and international interest rates. Typically in such situations, administrative intervention extends to some degree of state control over interest rates and the allocation of credit. The interest rate thus loses its function as an instrumental target for central bank intervention. Under such circumstances, the exchange rate can serve as an effective instrument of macro stabilization. As the value of an economy's currency rises relative to other currencies, its exports become more expensive and its imports cheaper creating tougher competition for domestic producers. This puts a damper on domestic economic activity. Conversely, as the value of the currency falls, exports become cheaper and imports more expensive, which stimulates the domestic economy. Government buying and

selling of currency in foreign exchange markets involves the issue or withdrawal of domestic money. Under managed exchange rates, monetary policy thus operates through foreign exchange market intervention.

The economies of Emerging East Asia differ in their use of exchange rate management as an instrument of monetary policy. The International Monetary Fund classifies economies by the degree of official intervention in foreign exchange markets using three broad categories (plus a residual “other”) and a number of sub-categories. As of 2016, Hong Kong was classified as maintaining a hard peg to the U.S. dollar; Cambodia, China, Laos, Malaysia, Myanmar, Singapore, Taiwan, and Vietnam as maintaining soft pegs, tied either to the U.S. dollar or to a basket of currencies; and Indonesia, Korea, the Philippines, and Thailand as implementing “floating” exchange rates, though not “free floating”, meaning their exchange rates were for the most part market determined but with intervention an option at the discretion of authorities.

The space in which authorities exercise monetary policy is defined by a number of variables, most importantly: the exchange rate regime; the degree of openness to international capital flows; and the institutional development of the domestic financial system. Macroeconomic textbooks focused on the U.S. take for granted: a freely floating exchange rate; capital markets that are globally integrated, and yet not subordinated to external forces; and a mature financial system. In this environment, the U.S. conducts monetary policy with a focus on domestic interest rates and without regard for exchange rates. This model has limited relevance for Emerging East Asia. In this text, our approach to macroeconomic policy takes exchange rate management as a given and accords due attention to the degree of openness to international capital flows and the limitations of domestic financial systems.

### *Fiscal policy*

The Keynesian view that recovery from a downturn is by no means automatic or assured looks to the fiscal arm of macroeconomic stabilization policy for deliverance. For Keynesians, increases in government spending or decreases in taxation have the power to boost aggregate demand and get an economy moving again. The initial fiscal impetus works through the economy with a multiplier effect as new spending generates additional income which in turn leads to more spending and more income in successive rounds. Though over the years, activist fiscal policy has had its detractors, the global financial crisis of 2008 saw a rallying to Keynesian remedies worldwide.

The big concern with fiscal policy is that it inclines toward budget deficits, due to stimulatory spending increases and tax cuts, that must be financed. Government borrowing saddles the citizenry with debt that must be repaid with interest in the future. If debt-fueled spending leads to growth that expands the tax base sufficiently to cover the cost of debt service, the debt load will remain manageable. Putting unemployed resources to work productively during a recession may arguably achieve this. However, skepticism arises for a number of reasons: government spending works with lags in execution and impact; political factors influence spending choices, to the possible detriment of efficiency; and to the extent that resources are diverted from private sector activities, net gains are diminished.

Emerging market economies present a special sensitivity to rising public debt loads. Concerns about fiscal sustainability can lead creditors to demand higher interest rates. To pay back creditors, a government must rely on tax revenues. To pay back foreign creditors in

particular, that government must further acquire foreign exchange generated through exports or new capital inflows and do so in competition with potential private users of foreign exchange wishing to purchase imports, invest in foreign assets, or pay down their own debts. Fiscal deficits are easy enough to incur, but not so easy politically to rein in again. Governments, especially in emerging markets, must therefore be cautious in exercising fiscal policy as a means of stimulating growth.

A key indicator of fiscal policy latitude is the ratio of the stock of public debt to GDP. The safe zone for this ratio depends on such factors as the rate of GDP growth, the responsiveness of tax revenues to GDP growth, and the interest cost of public sector borrowing. Governments with heavy debt to GDP ratios accumulated through past borrowing will find little scope for activist fiscal policy. The issue of fiscal sustainability, so pertinent in many of the economies under our purview, is not touched on in U.S. textbooks.

## **Overview of Macroeconomics for Emerging East Asia**

We conclude this chapter with a few general words of overview followed by a chapter by chapter outline of the remainder of the text.

### *General overview*

This text focuses on short-run growth fluctuations and stabilization policy in Emerging East Asia. Key features of the setting are: a high degree of openness to trade and with it vulnerability to external shocks; macroeconomic stabilization policies involving exchange rate management; and financial sectors that, whether sophisticated and globally integrated or ringed by capital controls and subject to administrative intervention, impose limits on the scope for an interest rate focused monetary policy.

The book is rich in empirical documentation of the Emerging East Asian experience. Only two chapters (3 and 9) of 16 are confined to pure theory. The remaining chapters illustrate concepts with comparative data for the 13 economies of the region, and most chapters feature one economy in particular for in-depth analysis.

Each chapter is followed by a data note and a bibliographic note. The data note describes the sources for the empirical content of the chapter and offers any comments or caveats. The bibliographic note discusses the origins of the ideas contained in the chapter and suggests supplementary readings.

### *Chapter outline*

Chapter 2 takes the broad economic measure of Emerging East Asia. The economies of the region differ greatly with respect to size, level of development, engagement in international trade and finance, and roles of state versus market. These factors are worth examining for their bearing on macroeconomic volatility and the policy environment.

Chapter 3 lays out the fundamentals of microeconomics. The focus is on the mechanics of demand and supply and development of the argument that competitive markets achieve efficiency in the allocation of resources. The lessons of microeconomics find useful application in macroeconomics for interpreting markets that pertain to the economy broadly. These include: the market for labor in which the wage rate is determined; the market for loanable funds in which

the interest rate is determined; and the market for foreign exchange in which the exchange rate is determined. This is the first of two chapters in the book that are purely theoretical.

The next two chapters deal with measuring and categorizing economic activity. Chapter 4 covers the national income and product accounts which yield the key aggregate indicator, GDP (gross domestic product). This aggregate is arrived at through three different approaches that involve summing activity along three different dimensions: the product approach based on sector, the broad divisions being agriculture, industry, and services; the expenditure approach defined over consumption, investment, government, and exports net of imports; and the income approach encompassing wages, interest, rents, and profits. The diversity of Emerging East Asia comes across vividly in comparisons of the region's economies along these lines. Historic data for Taiwan capture systematic changes associated with the economic development process.

Chapter 5 lays out the balance of payments accounts. These accounts capture cross-border trade and financial flows including the accumulation of official reserves. Comparison across economies shows most of Emerging East Asia running substantial balance of payments surpluses resulting in the amassing of vast official reserves. Because China's reserve accumulation has been so extraordinarily large and politically charged, and its recent reversals so sharp, we examine this country's balance of payments history in detail.

Chapter 6 deals with money. We begin by defining money as debt and explaining that it derives from the banking system issuing liabilities against itself. We then consider the age old debate in economics as to the effect of money supply increases on the price level versus real output. Data across our set of economies show a clear correlation between money and prices, that is nevertheless not without aberrations. Myanmar makes for a particularly interesting case study because money supply growth there has been so erratic over time.

Finance merits a full chapter in the study of macroeconomics in the wake of the global financial crisis, despite not having garnered such attention in most textbooks in the past. Chapter 7 considers the role of the financial system in creating debt beyond that narrowly defined as money, and in the process generating potentially destabilizing impulses. In our cross-section analysis, we compare bank security indicators and stock price volatility among our economies, both before and after the global financial crisis. Hong Kong, as one of the world's leading financial centers, serves as our case study.

Exchange rates are the subject of Chapter 8. We begin by studying how market forces act to determine exchange rates and achieve equilibrium in the balance of payments. This foundation laid, we proceed to consider the implications of government intervention in foreign exchange markets and come to understand how external balance can be achieved even under a peg. The purpose of intervention is to stabilize an economy's terms of trade with the outside world. Yet if a managed exchange rate becomes misaligned with market fundamentals, the ultimate break can be very destabilizing indeed. We examine long-run tendencies in fundamentals by tracking real effective exchange rates (exchange rates measured against a basket of currencies, adjusted for inflation) for our set of economies. Theory holds that currency appreciation will follow from economic development, and we seek to ascertain whether history bears this out. Our focus economy, Indonesia, has transitioned from a fixed exchange rate to a floating rate, and we examine the challenges involved in that process.

Chapter 9 is the second of two purely theoretical chapters. In it we review macroeconomic models of equilibrium and disequilibrium. The model of aggregate demand and

supply is a model of equilibrium in the Classical spirit in which prices adjust to clear markets and the economy rebounds automatically from shocks to recover its potential growth path. In contrast, the income-expenditure model based on Keynes's work depicts an economy that is prone to sustained sub-optimal performance. In this model, wages and prices fail to adjust to achieve full employment, and aggregate demand falls short of inducing production at full potential. Finally, the IS-LM (interest/saving-liquidity/money) model synthesizes Classical and Keynesian approaches. We introduce this model, but do not run through the gamut of applications because as a model centered on domestically determined market rates of interest, it has limited relevance for Emerging East Asia.

The models of Chapter 9 are comparative static models. They capture an initial situation, introduce an exogenous shock, and reveal an outcome with no sense of time. By contrast, the models of business cycles presented in Chapter 10 are dynamic. They describe a process of movement with an explicit time dimension. The dominant paradigm for business cycle modeling extends comparative static equilibrium analysis in a straightforward manner, taking an equilibrium path as the norm and ascribing deviations from it to exogenous shocks. Classical vs Keynesian variations on this theme are distinguished by the speed with which equilibrium is restored post-shock. A radically different way of thinking about business cycles lies buried in the historical literature, however. The story involves an endogenous process with laws of motion that push an economy to overshoot its potential to the point that finally a correction must occur, and when it does a downward spiral of job loss and business failure leads again to overshooting such that the economy becomes mired below its potential, until, eventually, a recovery takes hold and the cycle begins anew. The U.S. crisis of 2008 sparked a renewal of interest in this approach to understanding business cycles with attention in particular to the work of Hyman Minsky which puts credit at the heart of the process. We develop both the standard exogenous shock based paradigm and the alternative endogenous cycle paradigm, then bring the two together in a synthesis. The synthesis involves a cyclical process that affects an economy's vulnerability with shocks then playing out differently depending on the state of that vulnerability. We apply these theories to interpreting the Philippine experience.

The next three chapters cover stabilization policy. Chapter 11 deals with monetary policy taking exchange rates as an important policy instrument. A principle known as the Trilemma holds that it is impossible to adopt all three of: a fixed exchange rate; free mobility of international capital; and an independent monetary policy. The trade-offs are managed differently by the economies of Emerging East Asia. At one extreme, Hong Kong, with its globally integrated financial system, pegs its currency firmly to the U.S. dollar and forfeits an independent monetary policy. Many economies in the region take an alternate tack by imposing controls on capital flows which increases the space for discretionary monetary policy under managed exchange rates. Singapore's finely honed relationship between exchange rate management and monetary policy under an open capital account provides the case study for this chapter.

Chapter 12 takes up fiscal policy. Government spending and taxation can be useful tools for aggregate demand management. To some extent, automatic stabilizers are built into government welfare programs and a progressive tax system. More activist policy must be conducted with attention to the sustainability of debt loads. We examine debt to GDP ratios for the economies of Emerging East Asia, and assess the latitude for fiscal policy reach. Vietnam has pushed the boundaries of debt sustainability, and we consider the implications of that.

Monetary and fiscal policy work in concert to affect output and prices. In Chapter 13 we introduce the Swan diagram to examine the interaction between an exchange rate based monetary policy and government fiscal action. Malaysia serves as our case study.

Movements of global capital in and out of emerging market economies can be highly destabilizing. In Chapter 14 we analyze the effects of international capital flows and consider the measures governments have adopted to deal with them. Empirical data show great diversity of engagement with foreign capital among the economies within our scope. Korea has relied heavily on foreign borrowing to fund its development program, to good effect by and large. Yet a heavy foreign debt load has at times left the country vulnerable to disruptive stops or reversals in the flow of funds. We analyze the Korean experience for lessons.

Chapter 15 is devoted to crises, as defined by deep contractions in output and a need for measures beyond standard monetary and fiscal policies to stem the damage and bring about recovery. Emerging East Asia suffered a regional crisis in the late 1990s and was buffeted by the global financial crisis of the late 2000s. Crises in earlier times tended to be limited to individual economies but have become more shared across the region in recent years. In this chapter we explore causes and resolutions of crises. As the epicenter of the Asian Financial Crisis, Thailand offers a window into crisis incubation, eruption, and recovery.

Chapter 16 is the epilogue. The tremendous diversity of the economies of Emerging East Asia is manifest throughout this text. Yet the increasing synchronization of growth fluctuations demonstrated in Chart 1.2 and the commonalities of an approach to macroeconomic management that has set the theme of this book suggest ties that bind. We take the opportunity in this final chapter to consider the macroeconomic ramifications of closer regional integration. Increasingly complex regional supply chains and evolving financial linkages create incentives for harmonization of rules and coordination of policies. We look at steps that have been taken in this direction and consider where the effort might be headed.

## Data Note

The matter of data reliability must be addressed at the outset. We rely on official government statistics throughout this text. Compiling accurate macroeconomic statistics is a difficult undertaking even in developed economies, and more difficult by far in cash-based economies with large informal sectors. That said, local statistical authorities have access to a great deal more information than their detractors on the outside. These authorities provide the best numbers available, so we use them, albeit questioningly at times. In Myanmar's case, however, the absence of data on the level of GDP raises special concerns about the reliability of reported growth rates.

GDP growth rates in Charts 1.1 and 1.2 are from the World Bank *World Development Indicators* database. Taiwan data are from the Statistical Information Network of the Republic of China.

U.S. unemployment rates during the Great Depression are from the U.S. Bureau of the Census (1975).

Classification of economies by their exchange rate arrangements and monetary policy frameworks is done by the International Monetary Fund and published in its *Annual Report on Exchange Arrangements and Exchange Restrictions*. An analysis of the exchange rate policies of Taiwan (not included in IMF reporting) may be found in Chen and Wu (2010).

## Bibliographic Note

An accessible overview of macroeconomic thought as it has evolved from the Classics to Keynes to real business cycle theory and finally to attempts to explain the global financial crisis of 2008 is offered by Farmer (2010) in *How the Economy Works*. The book concludes with Farmer's own novel proposal for government to intervene in the stock market to stabilize the U.S. economy.

Landmark works referenced in this chapter by Keynes, Lucas, and Minsky will be discussed in later chapters.

## Bibliographic Citations

Chen, Shiu-Sheng and Tsong-min Wu, 2010. "Taiwan's Exchange Rate and Macroeconomic Policies over the Business Cycle, *Singapore Economic Review*, Vol. 55, No. 3, pp. 435-457.

Farmer, Roger, 2010. *How the Economy Works* (Oxford, UK: Oxford University Press).

International Monetary Fund, 2006. *World Economic Outlook: Financial Systems and Economic Cycles* (Washington, DC: IMF), Chapter 3.

International Monetary Fund, 2012. *Annual Report on Exchange Arrangements and Exchange Restrictions, 2016* (Washington, DC: IMF), pp.6-8.

- Keynes, John Maynard, [1936] 1964. *The General Theory of Employment, Interest, and Money* (New York: Harcourt, Brace & World).
- Krugman, Paul, 1994. "The Myth of Asia's Miracle", *Foreign Affairs*, Vol. 73, No. 6 (November/December), pp. 62-78.
- Lucas, Robert E., 1972. "Expectations and the Neutrality of Money", *Journal of Economic Theory*, Vol. 4, pp. 103-124.
- Minsky, Hyman, [1986] 2008. *Stabilizing an Unstable Economy* (New York, NY: McGraw Hill).
- Smith, Adam, 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations* (London, UK: W. Strahan and T. Cadell).
- Solow, Robert, 1957. "Technical Change and the Aggregate Production Function", *Review of Economics and Statistics*, Vol. 39, No. 3 (August), pp. 312-320.
- Statistical Information Network of the Republic of China, 2017. National Statistics. <https://eng.stat.gov.tw/np.asp?ctNode=1539> (accessed 27 October 2017).
- Taiwan Council for Economic Planning and Development, 2011. *Taiwan Statistical Data Book 2011* (Taipei, Taiwan: Executive Yuan, R.O.C.). <http://www.cepd.gov.tw/encontent/m1.aspx?sNo=0001453>
- U.S. Bureau of the Census, 1975. *Historical Statistics of the United States: Colonial Times to 1970* (Washington, DC: U.S. Department of Commerce), p. 135.
- World Bank, 2013. *World Development Indicators* database. <http://databank.worldbank.org/data/views/variableSelection/selectvariables.aspx?source=world-development-indicators>
- Young, Alwyn, 1995. "The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience", *Quarterly Journal of Economics*, Vol. 110, No. 3 (August), pp. 641-680.