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# Introduction

*Armaments, universal debt and planned obsolescence—  
those are the three pillars of Western prosperity.*

—Aldous Huxley, *Island*

Times have changed. This crisis is different. It is impossible to exaggerate the deep funk into which the world economy sank with the financial crisis of 2008. Or to exaggerate how different things have become in its wake. The transformation started with the financial crisis of 2008, metamorphosed into a currency war during 2010, and shape-shifted into a European identity crisis during 2011. These crises have taken a toll on all the world's economies, developed and developing, and have brought the world to a crossroads. The future is more uncertain than at any time since the Great Depression and World War II.

As during the Great Depression, Western nations have lost the most ground economically, and there is palpable fear that they may lose much more. In contrast, emerging-market and developing economies, led by China, contain large pockets of prosperity, although there is uncertainty about the future in these quarters too, particularly among members of their large new middle classes. It seems that globalization, which increased growth for all economies during the past two decades, especially for emerging-market economies, may have carried a hidden cost for the developed world. To determine whether this is true, and how best to advance balanced global growth in the future, it is imperative that policymakers correctly understand the determinants of the ongoing crises.

The story is relatively simple. It begins with growth, although it also involves inequality and the pain endured by people whose incomes have stagnated and whose jobs have been lost or are in jeopardy, as underscored by the Occupy protests on Wall Street and elsewhere during 2011. But growth is at the heart of the story. Without growth, there is equality only for poverty, not income.

Before the Great Recession of 2008, the world enjoyed a several decades–

long period of unparalleled prosperity. The number one economy, the United States, grew at more than 2 percent per capita per year for more than 60 years. Developing economies in Africa and Latin America experienced a long period of stagnation from 1980 until just after 2000 but had begun to improve and were growing at high rates leading into the crisis. Eastern Europe boomed after the fall of the Soviet Union in 1989. The emerging-market economies of Asia performed consistently well during the past 30 years, despite some domestic and international crises. Among these, China performed superbly since the start of economic reform in 1978.

There were signs of danger during the years before the crisis. For example, China strictly followed, and nearly perfected, the strategy of devaluing its currency in order to improve its competitiveness and achieve previously unimagined prosperity. In retrospect, the sheer size of China's economy, its outsized growth, and the growing global imbalances that resulted should have predicted the world crisis, particularly because the Asian financial crisis a decade earlier had its roots in similar circumstances. More attention should have been paid to these early warning signs, but boom times rarely engender wise insights.

The precipitating event for the global crisis was the subprime mortgage crisis in the United States. There are two competing perspectives on the causes of the US mortgage crisis. One contends that overly energetic US consumers took on excessive debt to pay for cars, homes, and other trappings of an illusory prosperity. The other contends that an oversupply of goods and capital from the developing and emerging-market economies, primarily China, artificially lowered prices in the United States and eventually caused consumers to make irrational economic decisions. Almost the same explanation is offered for the euro area sovereign debt crisis. One anecdotal story is about a Greek businessman who always drove a Volkswagen and changed his car every three years. In 2001, he went to his dealer to get the latest model, and was told that, with the same monthly payments, he could now afford a Mercedes. With the introduction of the euro, interest rates were the same for a saver living in the fast-growing German economy and a spender in the slower-growing Greek economy. The Greek businessman drove away with a Mercedes because he could borrow at 3 percent instead of the 7 percent rate he faced before the euro. As this book explores, the German-Greek story is not really different from the Chinese-American story. At the root of both stories lie disparate rates of economic growth.

## **What Determines Growth: Geography? Technology? Policy?**

Countries' economic growth experiences vary widely, as do interpretations of the reasons behind them. Attempting to understand the fundamental determinants of economic growth has preoccupied the minds of economists and policymakers for close to a millennium. The Industrial Revolution from the 1790s to the 1860s brought the first significant departure from the static economic

dullness of the previous several hundred years, launching the first period of strong and persistent economic growth. It was fueled by technological progress—faster and cheaper methods of extracting the same from less. It is easy today to take for granted the recent breadth and speed of technological progress, but technological discoveries were hard to come by just a few hundred years ago. The technological progress during the Industrial Revolution and the resulting productivity increases provided the first firm basis for studying economic growth.

Many contend that generating growth is more a matter of art than science, but a rich and abundant literature examines the many determinants of growth, some exogenous and some a matter of policy. The pioneering work of Angus Maddison (2001, 2003) allows us to probe the determinants of growth across space, time, and technology. His extensive collation of data has allowed researchers to examine the role of geography, institutions, and policy. Is there a magic formula? Of course not. In fact, it is risky and inaccurate to attach too much weight to any single determinant. But Maddison's data do suggest some broad generalizations that are especially relevant today. For example, institutions are vastly overrated as an explanation for differences in income levels. The role of institutions in promoting growth has been a recent focus of economists, who tell us that countries are rich and poor depending on whether they have institutions that protect property rights or institutions that promote democracy. But it could be the case that institutions are a luxury service—that is, wealth and good institutions go together because a rich country demands good institutions—and so whether a country is rich or poor today may have relatively little to do with whether it had good institutions yesterday.

Geography is the oldest known factor in economic growth and therefore the oldest explanation of why some countries are rich and others poor. Before the Industrial Revolution, we were all equal—first as hunters and gatherers, then as farmers and pastoralists, crop yields or herd sizes depended exclusively on soil quality, rainfall, and agricultural fertility. One country may have been richer than another, but the gap between the two remained the same over time.

According to Maddison's data (2003), in 1500 the rich countries in the world (those with incomes in the 95th percentile and above) had only three times the income level of the poor countries (those in the 5th percentile and below). This remained true as late as 1820. But by 2011 the gap had widened significantly: Rich countries had more than 30 times the income level of poor countries. In short, the world was a lot more equal in 1500, but it was a lot poorer as well.

After the Industrial Revolution, technological change played a greater role in economic growth. Then came two World Wars, with the Great Depression in between, and the focus turned to the role of government in economic growth. The market had not quite worked—business cycles were tolerable, but cycles that led to deep economywide failures were not. There had to be another way, and John Maynard Keynes provided an alternative in the form of “government intervention,” also generally referred to as “policy.” John Williamson (1990)

outlined the standard set of ten policies that were judged to enhance long-term economic outcomes and were generally prescribed for countries facing economic crisis, particularly in the developing world, which he memorably dubbed the Washington Consensus. For several years, most economists and policymakers swore by that consensus, though questions were later raised about the efficacy of these policies. Indeed, some argue that the Washington Consensus never worked in the first place (Rodrik 2006). However, this book argues that the Washington Consensus remains alive and well and a very effective—if not politically correct—guide to fostering economic growth.

## **The Primacy of Exchange Rate Policy**

Since the Keynesian argument for government involvement in economic affairs was broadly accepted 60 years ago, several broad policies and many more specific policy inventions have been pursued. There has been enough variety in policy to suit every intervention palate, including Keynesianism and monetarism, import substitution and export promotion, nationalization and openness, and infrastructure investment and enhanced social spending. Overall, however, regardless of the policies pursued at a given time or place, most if not all economists agreed that there were good and bad policies and that economic growth was a function of the policy mix in place.

Trade policy has been a favorite. How open should an economy be to trade? Should exports be subsidized? How should importers be taxed? Most every imaginable policy has been followed, often to satisfy the priorities of a particular interest group including both exporters and importers. Quite often in the past policies were tailored to the needs of import substituters, who did not want foreign competition. This book makes a case for the reexamination of the opposite policy, export-led growth, a politically correct version of exchange rate “management.” It does so by exploring the critical role in economic growth of currency undervaluation, the real variable behind policies ostensibly directed at export-led growth. This book outlines how this key variable affects exports, trade, and economic growth by giving authorities the ability to improve their economy’s competitiveness by reducing the production costs of their exports and making them cheaper in foreign markets.

This book is based on an analysis of more than 180 countries over some 500 years, but especially the last 150 years. The analysis shows that real exchange rates play a critical role in economic growth and that the strongest asset for growth is a weak currency—a currency weaker than the “unified and competitive exchange rate” prescribed by the Washington Consensus. In short, real currency devaluations can help a country grow toward prosperity.

It is widely accepted that currency overvaluation hurts growth, but there is very little theoretical or empirical acceptance of the mirror-image effect, namely, that currency undervaluation helps growth. This book examines the reasons behind this anomaly. One reason is that, while the effects of currency overvaluation are well known and easily observed, the same is not true for the

effects of undervaluation. For example, the East Asian success story during the 1980s and early 1990s was largely attributed (including by the World Bank) to either intelligent state intervention or effective export promotion, but little attention was paid to what may have been the dominant cause: real currency depreciation.

Verifying the potential growth role of currency depreciation is made difficult by both theoretical and empirical considerations. Theoretically, it is not possible for changes in a nominal variable like the exchange rate to affect a real variable like growth. Empirically, there are two major difficulties. First, there are large methodological errors in measuring currency under- or overvaluation, and these result in only weak, if any, noticeable effects on growth. Second, as shown recently by Michael Woodford (2009), errors (“construction bias”) in models used to study the relationship between currency valuations and growth may preclude the type of analysis that would show clear evidence of a significant relationship between the two.

## **A Guide to the Book**

Chapter 2 examines the evolution of theories on economic growth over time. In particular, it reviews the seminal contributions of a pioneer in the field, Sir Arthur Lewis (1955), who established four key principles of growth that continue to underpin the literature in the field, including the importance of a key factor in determining growth during the early stages of development—the reallocation of labor from low-productivity agriculture to high-productivity industry.

Chapter 3 explores the role of savings and the current account balance. The Asian crisis of 1997–98 was precipitated by a current account deficit in Thailand that exceeded 8 percent of GDP. In 2006, two years before the Great Recession that started with the failure of Lehman Brothers, US policymakers started to worry about a deficit that was approaching 6 percent of GDP—and the mirror image of this deficit, a household saving rate near zero. In early 2012, there were large debts and current account deficits in several euro area economies, including Greece, Ireland, Italy, Portugal, and Spain. The real exchange rate measures the relative price of traded goods, and therefore should be an important element of such current account imbalances. In fact, if currency valuations affect growth, they should exert an even greater effect on the current account and saving rates. Chapter 3 tests and confirms this hypothesis.

The chapter also discusses the link between current account surpluses and growth. It shows that current account surpluses do not necessarily lead to higher growth, as some argue. Instead, the causal link is from currency undervaluation to higher growth: If policy interventions are used to maintain the currency at an undervalued level, then current account surpluses are a necessary consequence. The contention that current account surpluses “cause” high growth is proven false.

Chapter 4 reexamines the question of how best to measure currency valuation. Given the widespread rejection of the hypothesis that undervaluation affects growth, and the fact that this study finds not only positive effects but also large and significant effects, it is important to compare and contrast the empirical foundation of both the old and new approaches to measuring currency valuation. A primary reason the analysis in this book shows strong effects is the correction of the “measurement errors” that plague many existing currency valuation measures. The chapter documents how existing methods for measuring equilibrium exchange rates (EERs) produce very large errors—in fact, the explanatory power of the traditional method is less than 50 percent. And the chapter introduces a new, nonlinear functional relationship between income and real exchange rates (RERs) that suggests an S-shaped relationship between the two and explains more than 86 percent of the variation in RERs between 1996 and 2011—a near perfect fit.<sup>1</sup> Greater precision in measuring equilibrium exchange rates means greater precision in measuring any deviation from such equilibrium (currency undervaluation or overvaluation), which in turn leads to a better understanding of the role of currency undervaluation in generating growth.

Chapter 5 explains the mechanisms by which currency valuation affects economic growth. The primary channel is investment: Currency undervaluation raises investment profits by helping to reduce labor costs. The analysis here follows the so-called reduced-form link between undervaluation and growth, but the emphasis is that the link occurs because currency undervaluation affects production costs and thereby profits and investment. In addition, currency undervaluation can be expected to affect the efficiency of investment, because currency undervaluation often spurs foreign investment, a process that is theoretically modeled and empirically verified in the chapter.

Chapter 6 examines the arguments of the critics. Use of the RER in models of growth has been criticized on theoretical and empirical grounds. The contention is that the RER is endogenous or set within a broader economic system characterized by the mutual interdependence of growth, inflation, exchange rate change, fiscal deficits, and more. This argument derives support from the Impossible Trinity argument, which holds that a country cannot simultaneously have a free flow of capital, an independent monetary policy, and a freely floating exchange rate. Why? Because one affects and neutralizes the other. For example, large capital flows emanating from an open capital account will appreciate the RER and prevent any real devaluation. Hence, one cannot really devalue the currency and benefit from higher growth.

The Impossible Trinity argument holds in theory but not in reality, certainly not in emerging-market and developing economies, which are the main focus of those who argue that the RER can be affected by changing the nominal exchange rate. Chapter 5 presents data for both developed and developing and emerging-market economies showing that the Impossible Trinity

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1. I first offered this relationship in Bhalla (2007a).

rarely occurs. The occasions when it holds in practice can be considered “black swan” events (Taleb 2010), that is, they are highly improbable, unexpected, but have a major impact.

Chapter 7 is devoted to “smell tests,” which are meant to differentiate between those measures and models that yield “sensible” results about currency valuation for different countries and those that do not. The first and most important smell test is an evaluation of how each measure explains the value of the US dollar—the numeraire for all calculations of purchasing power parity and hence currency valuation. A particular measure passes the smell test if it explains the performance of the US current account, one of the most important and controversial components of current global imbalances. My currency valuation measurement for the United States (Bhalla 2007a) explains the movements in the US current account over the last 30 years much more closely than the official trade-weighted value of the dollar (the Federal Reserve’s Broad Index of currencies of the 37 major US trading partners). No other popular measure of the interplay between currency valuation, RERs, and growth uses this type of dollar valuation exercise as a test. If such a measure cannot adequately explain movements in the US current account, can it be trusted to explain growth in the developing world?

The chapter also looks at the likely future direction of the dollar exchange rate, which is central to the world financial system, and predicts depreciation against Asia (especially China) and steadiness and appreciation versus the euro and yen. In fact, this forecast will need to become reality for global imbalances to be corrected.

Chapter 8 examines the hypothesis that policies that promote cheap and cheaper currency can lead to high and higher growth. It finds that this single policy can change a country’s destiny, more so than the 10 policies constituting the Washington Consensus or the 20 policies in its augmented version. This single policy worked more than 200 years ago and appears to work as reliably today: produce a product cheaply and conquer world markets. Some consider this trade-oriented use of currency undervaluation to be a pure expression of market economics; others see it, when pushed to its extremes, to be synonymous with mercantilism. The chapter explores several popular determinants of growth (including demography, institutions, and openness) using conventional models for several time periods, most exhaustively for the period 1950–2011. The individual effect of each popular determinant is examined in isolation and in combination with two currency valuation variables: the initial level currency valuation, at the beginning of any growth period, and the average percentage change in valuation during the period in question—two variables that recur throughout this book. Conventional methods use only one currency valuation variable—the mean level over the time period under analysis—and the chapter also examines these results.

Chapters 9 and 10 present additional evidence to substantiate the simple conclusion that currency valuation can explain a large proportion of growth accelerations (and decelerations) discussed in the literature, as well as a large

proportion of unexplained “miracle” or black swan growth. Even though there are relatively few such growth miracles, one surprising example may well be the United States during the long post-World War II period.

When practiced in the extreme, currency undervaluation *is* mercantilism, roughly defined as a system of political economy based on policies to maintain a favorable trade balance.<sup>2</sup> Chapter 10 presents an index of mercantilism that attempts to differentiate between current account surpluses resulting from high savings generated by cultural and historical factors and those resulting more from currency undervaluation. If a country scores high on both factors, then it can be considered mercantilist as defined by this index, and cross-country tests confirm the importance and significance of this new variable.

Chapter 11 conducts several tests of the hypothesis that good institutions equal good growth. Some tests in the chapter are identical to those already presented in the literature, while others are new. Since the ascendancy of institutional explanations of growth, there has been little emphasis not only on geography, culture, and religion as growth determinants but also on traditional policy explanations. The Great Recession may have caused a resurgent belief in the efficacy of policy, but it is not clear how long this will last. Anticipating the results, when a horse race is run between institutions and a policy of currency undervaluation, there is no contest. Policy wins overwhelmingly.

Chapter 12 examines whether development patterns since the mid-19th century reveal any common threads. They do. It may well have been a weak currency during the 19th century that set the stage for rapid growth in the United States and Europe during the Industrial Revolution and through the end of World War II. In other words, a weak currency can lead to faster growth. The chapter also provides an explanation for MacArthur’s choice of 360 yen/dollar as Japan’s fixed exchange rate after the War.

Chapter 13 addresses the evolution of thought on the question of whether the Chinese renminbi is, or has been, substantially undervalued. The last section of the chapter draws an analogy to Paul Samuelson’s (1964) seminal article on the RER and the presumed overvaluation of the dollar in the early 1960s.

If currency undervaluation is so beneficial, why isn’t everybody practicing it? Chapter 14 addresses this important question. The answer is that virtually every country has done so. The global net currency valuation level moved from an average overvaluation of about 10 percent for 1970–2000 to an average undervaluation level of 11 percent for 2010–11. This chapter also examines the rising global imbalances, especially whether currency changes in the dollar, euro, and renminbi affect the growth of other countries—that is, is currency undervaluation a zero-sum game? The chapter also examines, at a micro level, wages of Chinese and Indian workers. Somewhat surprisingly, for most of the last three decades, Chinese wages have been below Indian wages although theory predicts they should have been substantially higher, which

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2. One possible title for this book was *The Discreet Charm of Mercantilism*.

offers further evidence for the fact that the Chinese exchange rate has been substantially undervalued for most of the last 30 years. Hence, the popular puzzle about why China has grown so much faster than India has an answer: a significantly more undervalued exchange rate. The chapter also assesses the effects of recent global crises on the evolving world financial order, notably the increase of global cooperation toward the goal of greater growth for all. And why the future is likely to have considerably less imbalances in currency values and therefore less imbalances in global trade.

Chapter 15 summarizes the major conclusions of the book. Institutions are overrated for their effect on economic prosperity. The real exchange rate is not endogenous but can be influenced by changes in the nominal exchange rate. Currency undervaluation can and does affect growth. Taken to an extreme, currency undervaluation is mercantilism. When a large set of countries, or large countries practice mercantilism, a financial and/or a currency crisis is the inevitable outcome. Optimistically, however, having faced three major crises over the last 15 years—the East Asian crisis, the Great Recession, and the euro area crisis—the world is poised for more collaborative currency arrangements and a better globalized future.

