



# **19<sup>th</sup> Sir Arthur Lewis Memorial Lecture**

**Sir Cecil Jacobs Auditorium  
ECCB Headquarters  
St Kitts and Nevis  
*5 November 2014***



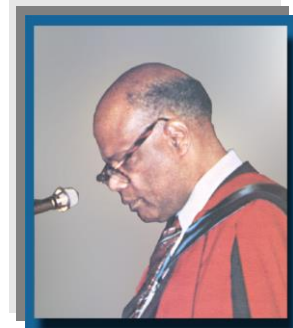
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***Sir William Arthur Lewis***  
***(1915 - 1991)***

**Sir William Arthur Lewis** was born in Saint Lucia of Antiguan parents who had migrated there 12 years earlier. At the age of 17 he won the St Lucia Island Scholarship. He attended the London School of Economics (LSE) where he studied Business Administration.



He graduated with first class honours in 1937, and continued his studies obtaining a PhD Degree in Industrial Economics. He subsequently taught at the London School of Economics (LSE) and at the University of Manchester, where he was made full Professor in 1948, at the age of 33. Sir Arthur also taught at Princeton University and was made an emeritus professor of political economy.

He was Principal of the University College of the West Indies and in 1962 became the first Vice-Chancellor of the University of the West Indies. He was knighted in 1963. In 1970 Sir Arthur became the first President of the Caribbean Development Bank. He was awarded the Nobel Prize for Economics in 1979.

Among his major works are: “The Industrialisation of the British West Indies”; “Labour in the West Indies”; “Economic Development with Unlimited Supplies of Labour”; “The Theory of Economic Growth” and “The Agony of the Eight”.

Today his image is on the hundred dollar note of the EC currency as a deserving symbol of his remarkable contribution to regional integration and sovereignty.

## *About the Lecturer*



Peter Blair Henry is Dean of New York University's Leonard N Stern School of Business. He is the youngest person to hold the position, having assumed the Deanship in January 2010.

Prior to that, Henry worked at Stanford University as the Konosuke Matsushita Professor of International Economics, the John and Cynthia Fry Gunn Faculty Scholar, and Associate Director of the Center for Global Business and the Economy at the Stanford University Graduate School of Business.

Henry received his PhD in economics from the Massachusetts Institute of Technology (MIT) in 1997. While in graduate school, he served as a consultant to the Governors of the Bank of Jamaica and the Eastern Caribbean Central Bank (ECCB). His research at the ECCB contributed to the intellectual foundation for establishing the first securities exchange in the Eastern Caribbean Currency Area.

As an expert on the global economy, Henry led the external economic advisory group for then Senator Barack Obama's presidential campaign in 2008. Following the historic victory on November 4, 2008, Henry was chosen to lead the Presidential Transition Team's review of international lending agencies such as the International Monetary Fund (IMF) and the World Bank. In June 2009, President Obama appointed him to the President's Commission on White House Fellowships.

Henry's expertise in the areas of emerging markets and international finance has made him a regular speaker at the IMF and has led him to testify before the United States Senate Committee on Foreign Relations and before various ambassadors to the United Nations. Additionally, he has served as a macroeconomic advisor to the Governments of Ghana and Jamaica.

Henry's research and teaching have received support from the National Science Foundation's Early CAREER Development Program (2001-2006). From 2000 to 2001, Henry was a National Fellow at the Hoover Institution.

Henry currently serves on the board of a number of organisations including the National Bureau of Economic Research (NBER), the USA's leading non-profit, non-partisan economic research organisation institution.

Born in Kingston, Jamaica, in 1969, Peter Blair Henry became a US citizen in 1986. He lives with his wife of 17 years, child psychiatrist Lisa J Nelson and their four sons.

Transcript of the  
19<sup>th</sup> Sir Arthur Lewis Memorial Lecture

**“Capital and Labor in the 21<sup>st</sup> Century:  
A Cautionary Tale”**

By

Peter Blair Henry, PhD

Dean of New York University's  
Leonard N Stern School of Business

## **Capital and Labor in the Twenty-First Century: A Cautionary Tale<sup>†</sup>**

Thank you, Governor Venner. I am deeply honored to give the Lewis lecture. Although I never had the opportunity to meet the great Sir Arthur Lewis, I did write to him once when I was in college. He graciously returned my letter and I never forgot it.

Speaking of letters, it gives me special pleasure to return to the Eastern Caribbean Central Bank (ECCB), because a note I mailed to Governor Venner back in 1994 landed me my first job as a professional economist. It was spring of my first year of graduate school, and I was considering writing a thesis about the Third World Debt Crisis under the supervision of my late advisor, Rudi Dornbusch. Rudi suggested that instead of spending the summer wandering around the library at MIT, I should enquire whether the ECCB had a project that might teach me a bit more about the world beyond academic journals.

The letter I received in reply explained that the islands of the Eastern Caribbean had not been heavily affected by the Debt Crisis, but then went on to say that the ECCB was interested in establishing a capital market to facilitate long-term development and was eager to avoid the problems that plagued the Southern Cone countries in Latin America in the aftermath of financial liberalization. Governor Venner invited me to spend the summer in the ECCB research department, where I wrote a paper on the role of capital markets in economic development that launched my research career.

Things have come full circle. Indeed, capital plays a central role in my lecture today. But instead of examining the impact of capital market liberalization on capital accumulation as I did that summer, I want to focus on the ongoing relevance of

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<sup>†</sup> *Peter Blair Henry, William R. Berkley Professor of Economics and Finance, Richard R. West Dean, New York University Leonard N. Stern School of Business. Remarks prepared for the Distinguished Sir Arthur Lewis Lecture, Eastern Caribbean Central Bank, 5 November 2014.*



Lewis's work as it illuminates an important connection for labor in the 21<sup>st</sup> century, between two simultaneous but otherwise seemingly unrelated trends: the coming boom in the working age population of developing countries and creeping anti-capitalist sentiment.

## **ASSUMPTIONS OF LABOR AND CAPITAL**

In Lewis's celebrated dual-sector model, unlimited supplies of labor drive profits; profitability drives capital accumulation; and capital accumulation in turn drives employment. This causal flow of action hangs on two critical assumptions. The first is that owners of capital in the manufacturing sector of the economy face a perfectly elastic labor supply curve. For long periods of time, they are able to hire as many workers as they want at a 30 percent premium over the traditional sector subsistence wage.

Because wages are flat, investment is extremely lucrative, which brings me to the second assumption in the Lewis model: that profits generated in the manufacturing sector get reinvested there continually. The plowing of profits into the installation of new capital—the building of new factories or the expansion of existing ones—causes an outward shift in the marginal product of labor schedule. With a perfectly elastic supply of labor, we get higher levels of employment and increased production at the same level of wages. Hence, profits increase as a fraction of total output, leading to yet more investment, employment, output, and profits. In the words of Lewis, “If unlimited supplies of labor are available at a constant real wage rate, and if any part of the profits is reinvested in productive capacity, profits will grow continuously relative to the national income and capital formation will also grow relatively to the national income.”

This mutually reinforcing cycle of rising profits, capital accumulation, growth, and job creation continues until the excess supply of labor is absorbed and wages begin to rise. As the economy reaches this so-called Lewis Turning Point, profitability

begins to decline, and therefore so does investment and the growth rate of output and employment.

The transformation of China's economy since 1978 provides a classic illustration of the Lewis model at work. With wages in the provinces of Guangdong, Jiangsu, and Zhejiang all forecasted to rise by double digits in 2014 and with evidence of a decreasing labor supply—in 2012 the mainland working age population began declining for the first time on record—it would be natural to ask in this lecture whether China has reached the critical point where there are no longer unlimited supplies of labor in the traditional sector of its economy.

Yet that is not what I intend to do this evening. The Lewis model articulates the implications for growth when you take as given *both* unlimited supplies of labor *and* government policies under which capitalists have an incentive to reinvest their profits. Today I relax the second of these two assumptions and ask the following question: what are the implications for an economy's ability to employ very large (if not unlimited) supplies of labor when the public sector adopts policies that are inimical to the profitability of capital? The combination of two trends—one demographic, the other socio-political—makes it imperative to address this question now.

First, the world is at the onset of a massive labor force transformation. The working age population is contracting in advanced economies and expanding in developing countries. According to data from the United Nations Population Fund, between 2015 and 2030 the working age population in the least developed countries will increase by 45 percent, an average compound growth rate of 2.5 percent per year. Led by regional giant Nigeria, whose working age population will grow between 2.6 and 3 percent over this period, Sub-Saharan Africa is at the epicenter of this demographic trend.

But it would be a mistake to think about rapid growth in the working age population as a purely African or least-developed-country phenomenon. A range of large, economically and geopolitically important developing countries in Asia and the Middle East began to see significant increases in their working age populations in 2010 and will continue to do so through 2030. Over this time period, Pakistan's working age population will grow by 2.3 percent per year; the Philippines, 1.7 percent; Egypt, 1.6 percent; Bangladesh, 1.4 percent; India, 1.3 percent; and Turkey, 0.9 percent.

To place the magnitude of the coming increase in the developing world's working age population in context, it is useful to note that in China from 1978, the year in which Deng Xiaoping initiated economic reforms, to 2011, the last year in which the country's working age population expanded, the working age population grew by 2.1 percent per year—a number that is smaller than the 2.5 percent figure projected for the least developed countries from 2015 to 2030.

An expanding work-eligible population seems a boon to future growth, but increasing numbers beg the question: will these additional workers in the least developed countries be able to find the jobs they need? The workforce challenge that lies ahead is even more striking when considered in absolute terms. The net increase in a country's working age population (the number reaching working age, less the number exiting the working population through death or retirement) provides a rough estimate of the number of new jobs the country must generate each year just to absorb the new labor force entrants.

All told, the net monthly addition of new workers to the labor force in the least developed countries will rise from 1.1 million per month in 2015 to 1.7 million per month in 2030 (Lam, 2014). China again provides a useful comparison of orders of magnitude. From 1978 to 2011, China added an average of 1.06 million workers per month.

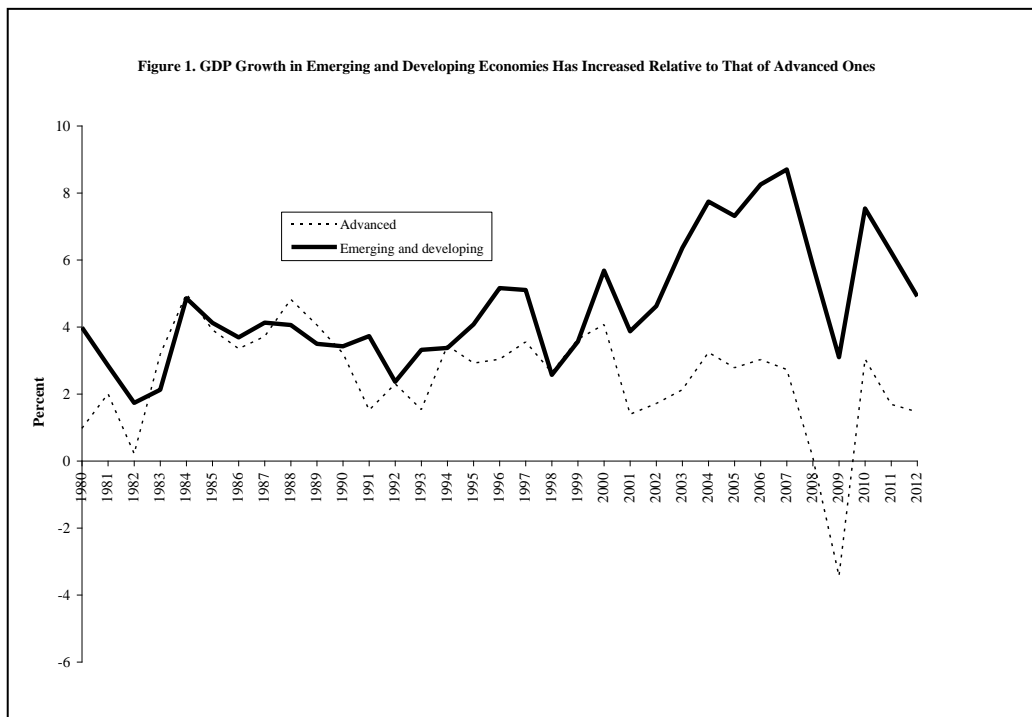
Stated bluntly, in order to absorb its new labor force entrants over the course of the coming decade and a half, the least developed countries of the world will need to create jobs at almost twice the rate that China did as it delivered the most miraculous performance of economic growth the world has ever seen. Their ability to absorb the future labor-force increases will determine whether the demographic changes afoot will yield dividends—enabling the rise of the next generation of low-cost manufacturing hubs—or whether they spell disaster waiting to happen, as millions of youth, especially young men, enter the labor force without serious prospects of meaningful work.

This brings me to the second critical trend: the rise in anti-capitalist sentiment. The dispensation of governments toward (or away from) private capital over the next several decades will be at least as important an issue for the global economy as whether or not China has reached the Lewis Turning Point. The attitudes of developing-country governments toward both local capital and inflows of foreign capital on the one hand, and the attitudes of advanced-country governments toward outward foreign direct investment on the other, will have a critical impact on the ability of systemically important developing countries to absorb rapid increases in their working age populations. Their capacity for absorption, in turn, will have attendant consequences for prosperity and social cohesion across the advanced and emerging world.

Prosperity or poverty, the eventual outcome for developing nations—and indeed our entire global economy—hinges critically on whether the Lewis model’s implicit assumption of profitable reinvestment of capital holds true, or whether a new rising tide of anti-capitalist sentiment, notably put forth in the recent tome *Capital in the Twenty-First Century* by French economist Thomas Piketty, wins the day. I will return to this matter of anti-capitalist sentiment, but first we need a bit of historical context to understand what is truly at stake—context that places Lewis’s thinking at the fore, as he presaged the central role of capital in the transition to high growth for emerging economies.

## LEWIS-STYLE TURNAROUND IN EMERGING MARKETS

Lewis died in 1991, thirty-seven years after the publication of his celebrated article “Economic development with unlimited supplies of labour” and two years before the dramatic turnaround in so-called Third World economies that his earlier work anticipated. This turnaround is depicted in Figure 1, which I constructed using data from the International Monetary Fund’s World Economic Outlook (WEO) database. The figure plots the average growth rate of real GDP in advanced as well as emerging and developing economies from 1980 through 2012.

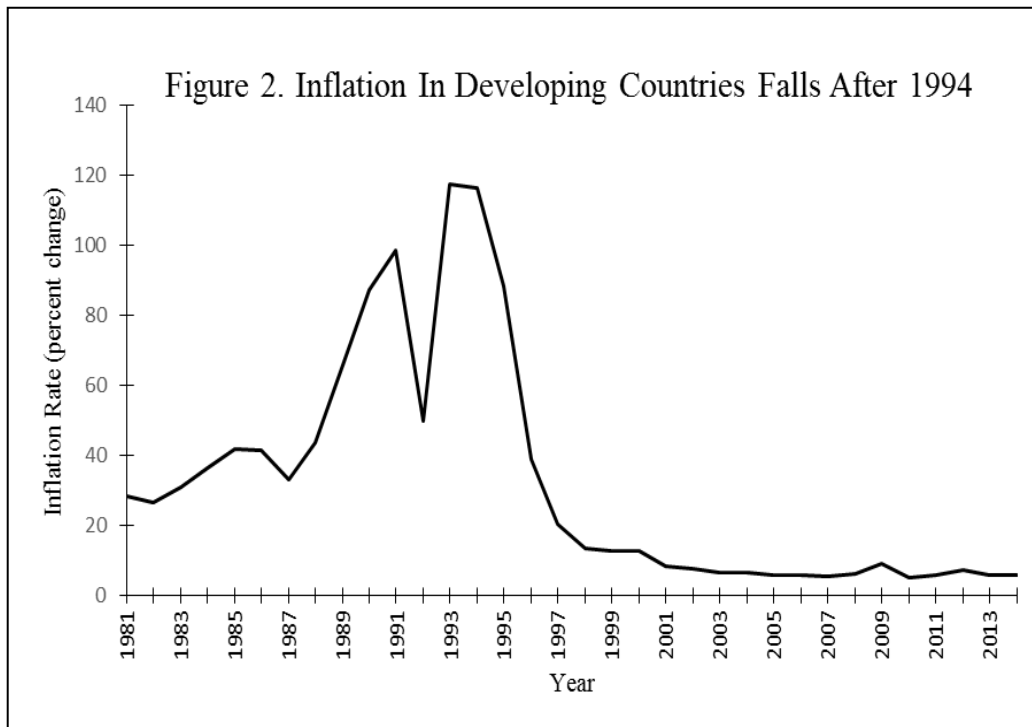


There are two important points about the graph. First, the growth rate of real GDP in the developing world has been dramatically higher in the last two decades than it was in the 1980s. From 1980 to 1992, real GDP in developing countries grew at an average rate of 3.4 percent per year versus 5.4 percent from 1993 to 2012. The significance of this two-percentage-point increase in growth is profound. For a country whose population grows at 1 percent per year, annual GDP growth of 3.4 percent means that per capita income doubles once every 29 years; with 5.4 percent

growth, per capita income doubles in just 16. Second, the absence of an increase in the growth rate of advanced economies—2.9 percent from 1980 to 1992, and 2.8 percent thereafter—suggests that the accelerated rise of living standards in developing countries was not caused by an aggregate shock to the global economy, but rather a set of changes idiosyncratic to the developing world.

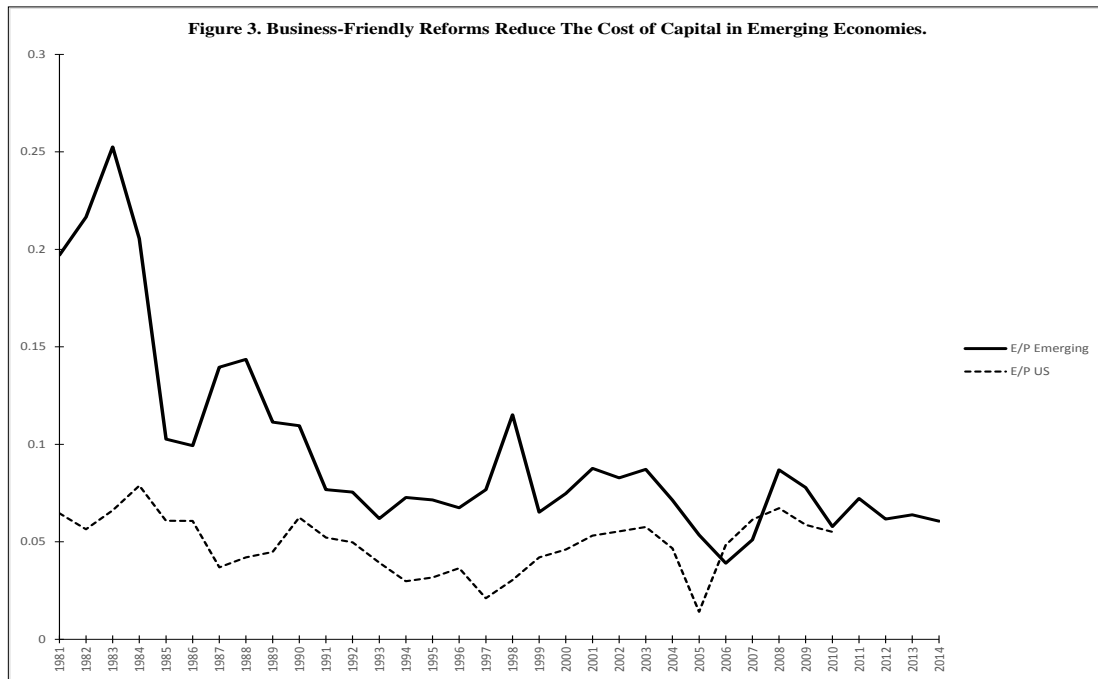
So what were the changes that triggered this period of accelerated catch-up growth in the emerging and developing world? While large supplies of low-cost labor (the first assumption of the Lewis model) surely played a role in sustaining the process longer than it might otherwise have lasted, over the two decades from 1993 to 2012 there was no commensurate change in the demographics of the developing world that would suggest that an increase in the supply of labor was responsible for the growth acceleration. In fact, over the time period in question, the growth rate of the working age population in Asia and Latin America was actually *decreasing* (it was roughly constant in Africa) even as emerging market growth rates were increasing. Instead, I put forth today the argument that the second assumption of the Lewis model—which I described as the plowing of profits from manufacturing back into that sector, creating a virtuous cycle—was the proximate cause of the growth acceleration, aided by significant shifts in economic policy toward increased efficiency and investment.

The story of inflation in developing countries from the early 1980s through present day speaks to that point. Figure 2 indicates that inflation in emerging and developing countries fell dramatically after 1994.



The fall in inflation is really a proxy for the adoption of policies more conducive to capital formation: macroeconomic stabilization, more openness to international trade and financial flows, increased respect for the rule of law, a larger role for the market in allocating goods and services, and a more modest role for the State. From increased openness to financial flows, which gives countries access to a global pool of savings, to greater rule of law, which reduces the likelihood that investments will be expropriated by the State, a more business-friendly environment reduces the cost of capital. Figure 3 demonstrates the impact of pro-business economic policy reform on the cost of capital by plotting the average value of the aggregate market earnings-to-price ratio—the earnings yield—for the subset of emerging and developing countries for which I could obtain data over the relevant time period. Providing a point of comparison, the figure also plots the U.S. earnings yield.

It is worth noting two salient features of Figure 3. First, there is a sharp drop in the earnings yield for emerging and developing countries—from an average of 14.4 percent before 1994 to an average of 7.1 percent thereafter—but the yield for the U.S. is roughly constant at 5 percent over the entire sample period. Second, except for the spike associated with the 1997–1998 Asian Financial Crisis, the fall in the earnings yield in emerging economies is permanent, and its timing coincides with both the rise in GDP growth and the onset of reforms.



Because the earnings yield is the cost of equity capital for all publicly traded firms—the risk-free rate of interest plus the equity-risk premium—it provides the broadest visible proxy for the rate of return that owners of capital require to reinvest their profits in the local economy instead of allocating it elsewhere or increasing their consumption. The large fall in the required rate of return to capital following the onset of reforms strongly suggests that the second assumption of Lewis’s model did not fit the developing world very well prior to the mid-1990s. It also provides an important ingredient for a simple, neoclassical explanation of the growth acceleration that took hold after 1994.



By opening the economy and increasing the supply of savings as well as providing stability and reducing uncertainty, economic reforms across the developing world reduced the risk-free rate and the equity-risk premium, leading to a dramatic fall in the required rate of return to capital. By removing economic distortions and increasing efficiency, reforms also raised the marginal product of capital. Falling required rates of return in conjunction with rising marginal products provided a strong incentive to increase investment, and in many countries of the developing world—China and India are obvious examples—we did indeed see higher rates of investment following major reforms. It is also worth pointing out that in some instances, particularly after capital account liberalizations, greater investment resulted in higher wages as well as employment.

### **CAPITAL AND LABOR IN MANLEY'S JAMAICA**

Of course just as we know that higher stock prices reduce the cost of capital, thereby driving up investment, employment, and wages, it is also true that this causal chain can run in reverse. In these days of declining labor shares, widening inequality, and legitimate concerns about the impact of these factors on society, we would do well to remember that a falling stock market creates a downward spiral, with negative attendant consequences for labor in the form of higher unemployment, lower wages, or both.

A story from Jamaica, an island at the heart of Lewis's beloved Caribbean, forcefully illustrates the point. From 1972 to 1980, in a series of policy experiments that were intended to empower the poor and working class, Jamaican Prime Minister Michael Manley imposed changes that reduced the profitability of capital, raised required rates of return, and consequently stole the futures of the very people he was attempting to help.

As Manley campaigned to the reggae beat of Delroy Wilson's "Better Must Come" in 1972, he won the votes not just of organized labor but also owners of capital.

Sixty percent of the businesspeople and high-income professionals who participated in the 1972 elections voted for Manley's party (the PNP). They were banking, quite literally, on his vision of a more prosperous and stable society with fewer strikes and the social peace that comes with greater class mobility and a more equitable distribution of income. Stated more prosaically, from the point of view of owners of capital, Manley created expectations of a future with reduced risk and higher profits.

Expectations took a dramatic turn, however, once Manley was firmly ensconced in office and "Better Must Come" translated into policies of import substitution, nationalization, capital controls, and inflationary public finance. Manley's policy choices and anti-capitalist rhetoric undermined profitability and amplified uncertainty. By the time he famously declared in 1975 that "Jamaica has no room for millionaires," the country's stock market had been in free fall for two years. Indeed, from the time Manley took office in 1972 until he was voted out in 1980, the Jamaican stock market lost 90 percent of its value. It is worth noting that all of this took place within the framework of democratic institutions, including free and fair elections. Democracy, the rule of law, and growth-friendly institutions are not in and of themselves safeguards against policies that create an inhospitable investment climate.

And so it was that Jamaica in the 1970s became a country that, despite a rapidly growing labor force and large amounts of underutilized labor, bore little resemblance to the world of the Lewis model in which firms had an incentive to keep reinvesting their profits. To the contrary, installing capital under Manley's government was the last thing firms wanted to do, and the data reflect this reality. From 1962 to 1972, the real stock of capital in Jamaica grew by 4.3 percent per year. In contrast, the capital stock grew by only 0.4 percent per year from 1973 to 1988—a 3.9 percentage point decrease and too low a rate to keep pace with the growth rate of the labor force. In fact, the overall stock of capital in Jamaica actually contracted in 7 of the 10 years between 1976 and 1986, providing a stark reminder that the combination of depreciation and a sufficiently hostile investment

climate is more than capable of eroding the capital stock. With firms disinvesting and the workforce expanding, capital per effective worker declined, productivity fell, and labor suffered accordingly. From 1975 to 1980, real wages fell by 130 percent, and by the time Manley left office unemployment stood at 30 percent.

### **ANTI-CAPITALIST SENTIMENT TODAY**

Of course Jamaica is just one example, regional and dire, of a country that was held back through the implementation of policies inimical to capital and to growth. Throughout the 1970s and 1980s, governments of many developing nations harbored negative attitudes toward inward foreign investment and refused to allow foreign ownership of domestic capital. Roadblocks still exist, but in the three-plus decades that have elapsed since Manley's failed experiment, emerging markets formerly known as Third World countries have launched themselves to the head of the global economy, creating jobs and growth and lifting millions out of poverty through hard-won reforms and a gradual opening to trade and foreign capital.

There is no denying that globalization has led to a decrease in inequality across countries. Within countries, however, inequality has been on the rise and has provoked a new wave of anti-capitalist sentiment—notably this time in advanced nations. The popularity of French economist Thomas Piketty's examination of income inequality by now speaks for itself. In the United States, resentment over the financial crisis and stagnant middle-class wages spawned movements such as Occupy Wall Street, with its agitation of the 99 percent against the well-to-do 1 percent. More recently, corporate tax inversions have drawn ire, with the result that any company that seeks to re-domicile abroad is vilified as “unpatriotic.”

As was made abundantly clear in Manley's Jamaica, rhetoric matters. Despite justifiable concerns over income inequality in advanced nations, there is nevertheless a significant danger in letting anti-capitalist sentiment go too far. Policymakers and

business leaders would do well to consider that the rise of anti-capitalist sentiment in developed countries could have unintended consequences for the developing world—for example, a decrease in global capital flows to poor countries that need capital to grow. The 2014 DHL Global Connectedness Index shows that gross international capital flows as a percentage of world GDP still have not returned to their pre-crisis levels. When developed countries work up negative sentiment regarding the outward flow of capital, they risk losing sight of the fact that policies that encourage capital accumulation are ultimately good for employment and wages. And because of the interconnectedness of economies in the 21<sup>st</sup> century, it's not just developing nations that will be hurt by a lack of capital flowing from rich to poor nations; declining capital flows to developing countries will ultimately lead to a decrease in advanced-economy fortunes as well.

The rising discontent toward capital is a matter of concern given the projected future labor force growth numbers that I mentioned at the beginning of the lecture. With roughly 300 million new workers entering the labor force throughout emerging economies in the next 15 years, rapid and persistent capital accumulation will be critical for creating employment and driving productivity and wages in countries such as Nigeria, Pakistan, and the Philippines. But this kind of investment is unlikely to happen if we do not begin thinking in a coherent way about attitudes and policy toward capital accumulation—both in terms of the role of capital outflows from advanced nations and the acceptance of capital and fair treatment of it by emerging economies (as, for example, with investor protections). Policies that instead increase the cost of capital or reduce its profitability ultimately hurt labor.

The world today looks radically different than it did when Arthur Lewis wrote his seminal paper in 1954, but the connections between labor and capital that are embedded in the Lewis model are just as critical for growth in this new century, if not more so. Global prosperity in the decades ahead—for both developed and developing nations—depends very much on our collective willingness to take cautionary tales about economic policy to heart. ~ Peter Blair Henry, PhD

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