The Mechanics of Job Creation

Seizing the New Dividends of Globalization

Célestin Monga

The World Bank
Development Economics Vice Presidency
Office of the Chief Economist
October 2013

Abstract

This paper assesses some of the main strands of the theoretical literature on unemployment and employment and shows that their interesting conclusions may not be transferable to low-income countries whose endowment and production structures are profoundly different from that of high-income economies. It then tackles the knowledge deficit on employment creation

by shedding light on the new economic opportunities that latecomers may derive from the dynamics of globalization—especially the economic success of large emerging economies such as China and Brazil. It offers a simple analytical framework for identifying opportunities for labor arbitrage in the global economy and suggests a practical policy framework for exploiting them.

This paper is a product of the Office of the Chief Economist, Development Economics Vice Presidency. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The author may be contacted at cmonga@worldbank.org.

The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

The Mechanics of Job Creation

Seizing the New Dividends of Globalization

Célestin Monga

JEL Codes: F43, J20, O20

Key words: Theories of unemployment, policies for employment, labor arbitrage, manufacturing, industrial policy.

Célestin Monga is Senior Economic Advisor to the World Bank Senior Vice President and Chief Economist and co-director of the forthcoming *Oxford Handbook of Africa and Economics*. The author wishes to thank Joe Stiglitz, Alan Krueger, Olivier Blanchard, and Justin Yifu Lin for comments and for many insightful discussions of the arguments in this paper.

1. Introduction

In an intriguing book on the methodology and dynamics of knowledge creation, Firestein (2012) makes the point that the most promising and fruitful approaches in hard sciences are generally not those that try to build on the existing body of truths but instead focus on things that are still unknown. As a neuroscientist, he draws on his own experience to advocate tolerance for radically different pursuits, “the pleasures of scientific mystery, and the cultivation of doubt.” He writes: “When I sit down with colleagues over a beer at a meeting, we don’t go over facts. We don’t talk about what’s known. We talk about what we’d like to figure out, about what needs to be done.” The celebration of uncertainty has led him to rehabilitate ignorance, seen as a particular condition of knowledge and the most critical part of the scientific enterprise.

While economics is still not yet a hard science, Firestein’s basic recommendation applies there, especially with regard to the issue of job creation, which has now become the single most important economic question of our time. It is perplexing indeed, that the economics profession has devoted a lot of resources to the painstaking study of employment, unemployment, and labor market issues in general without focusing on the unknown—that is, trying to understand the strategies and policies that have allowed some densely populated countries to create enough full-time jobs to achieve sustainable and inclusive growth while maintaining social stability. Most East Asian countries in particular—starting with China, the most populous country in the world—have so far managed to meet that goal. Yet very few articles appear in top economic journals on employment creation strategies and policies in these countries.

If one is to take ignorance seriously, one must examine the various ways in which jobs have historically been created in successful countries, and explore the potential lessons for African countries, especially in the current context of a new phase of globalization. This paper attempts to do just that. Without succumbing to the risk of teleological reasoning and assuming a linear course of human history (i. e., the notion that past economic developments will repeat themselves in the future), it explains why existing theories of unemployment have yielded little useful policy insights for low-income countries. It then suggests a shift of focus from abstract theorizing of labor markets to gaps in existing knowledge that can yield big intellectual and

policy payoffs. This is particularly true in the current context of an increasingly interdependent world economy where the ascendancy of new players could bring new benefits to low-income countries, especially those in Africa.

The economic success of large emerging countries such as China or Brazil reflects their evolving endowment structures and changing comparative advantage. It also ignites new dynamics in the distribution of responsibilities in the global production system: these newcomers are now well positioned to increasingly produce many of the high-value-added goods that used to be the exclusive prerogative of advanced economies. In order to remain successful, they must continue climbing the industrial and technological ladder and get more involved in capital-intensive industries. At the same time, they will have to free up much of their current manufacturing space to low-income countries that could be more competitive in labor-intensive industries. The necessary relocation of large parts of their supply chains in lower-production-cost countries will affect the price of goods, job patterns, and wages everywhere (Spence 2011).

Labor arbitrage, which consists of exploiting lower-wage opportunities in various places around the world—mainly in low-income countries—has never been the only motivation for firms to locate their activities abroad. Other transaction costs are also important determinants for such decisions. But in a world where governments are increasingly offering geographic enclaves such as industrial parks with excellent infrastructure, good business conditions and good governance, labor costs become once again important. As emerging economies are booming, wages there are rising fast,¹ forcing firms to look for labor arbitrage opportunities elsewhere—including in Africa.

The remainder of the paper is organized as follows: Section 2 surveys of some of the main strands of the theoretical literature on unemployment and employment, and stresses the fact that their interesting frameworks may not be transferable to low-income countries whose endowment and production structures are profoundly different from that of high-income economies. Section 3 tries to tackle the knowledge deficit on employment creation in Africa by shedding light on the

¹ It is estimated, for instance, that pay factory for workers in China soared by nearly 70 percent in just five years (2005-2010). Source: *The Economist* (2011, p. 79).

new economic opportunities that African countries may derive from the dynamics of globalization. It then offers a simple analytical framework for identifying opportunities for labor arbitrage in the global economy, and suggests a practical policy framework for exploiting them. Section 4 provides concluding remarks.

2. The Limits of Existing Theoretical Frameworks

This section outlines some of the basic conceptual issues that have not yet been addressed satisfactorily by theories of unemployment. It also examines some of the most promising approaches, such as the search for an aggregate matching function, and discusses whether the dominant frameworks in the existing literature apply to developing countries.

Basic Conceptual Issues and Manichean Approaches

Economists have long struggled to make sense of involuntary unemployment and to come up with convincing theories that explain a phenomenon still hard to grasp conceptually. The basic intellectual obstacle they have not been able to overcome satisfactorily is to reconcile the popular, intuitive conception of unemployment with the official definitions commonly used by government statistical agencies and the ILO.² That intellectual gap, which has never been filled adequately, has always been the source of theoretical confusion and frustration. Most people would probably define involuntary unemployment as situations where workers are unsuccessfully looking for jobs at the prevailing wages when they are as qualified as those holding these jobs, or where workers are willing to work at less than the prevailing wages for jobs which they could usefully fulfill, but are unable to find such jobs. Such situations (let's call

² According to ILO's standard definition from the 1982 Thirteenth International Conference of Labour Statisticians, the "unemployed" comprise all persons above a specified age who during a reference period were: (a) "without work", i.e. were not in paid employment or self-employment; (b) "currently available for work", i.e. were available for paid employment or self-employment during the reference period; and (c), "seeking work", i.e. had taken specific steps in a specified reference period to seek paid employment or self-employment. The specific steps may include registration at a public or private employment exchange; application to employers; checking at worksites, farms, factory gates, market or other assembly places; placing or answering newspaper advertisements; seeking assistance of friends or relatives; looking for land, building, machinery or equipment to establish own enterprise; arranging for financial resources; applying for permits and licenses, etc. The national definitions used vary from one country to another as regards inter alia age limits, reference periods, criteria for seeking work, treatment of persons temporarily laid off and of persons seeking work for the first time.

them Type A) raise issues of economic inefficiency and social injustice: large segments of the population, often with useful skills, are kept out of the productive economy, which obviously makes the process of national wealth creation suboptimal. This is true even if the unemployed are less productive than those who hold employment. Furthermore, the people left outside the economic system are often a burden to those who are employed and feel disenfranchised, which makes them a potential source of social instability and a constant threat to social peace.

Government agencies and international organizations usually approach and count unemployment differently. Broadly speaking, they only focus on people of “working age” (whatever they choose it to be), who are out of work (whatever is considered “work”) and capable of submitting evidence (whatever is deemed acceptable) of having looked for work in the recent past. Clearly, it is possible for a person to qualify for these Type B situations and not qualify for Type A; for example it is possible for a skilled worker who has been laid off and is looking for a job not to qualify for inclusion in unemployment statistics because he/she is temporarily helping in a family business (and therefore technically not out of work) or has not been able to produce “acceptable evidence” of having looked for a job. And vice versa: it is possible for a young college graduate who is officially included in unemployment statistics to actually be seeking work at real wages in excess of his/her potential contribution to society.

Such plausible scenarios raise several questions that economic theories of unemployment have attempted to answer over the decades, generally with little success: Why are market economies often unable to provide all the jobs that people are looking for? Why are certain economic systems unable to attract workers who would be willing to demand real wages that fall short of their potential contribution to society? Why are firms unwilling or unable to capture the economic opportunities that are associated with the existence of a large pool of unemployed workers? Why are involuntary unemployed workers unwilling or unable to employ themselves (and others) by starting new firms or to underbid their employed counterparts? Etc.

Unemployment theorists have so far not been able to design rigorous analytical tools to provide convincing answers to these questions. Defining unemployment requires that one implicitly assigns value to various types of work, occupation patterns, and sources of income. This

supposes that one also makes subtle value judgments about topics that are actually outside the typical boundaries of economics, as it implies dealing with issues of interpersonal comparisons of well-being: What is to be considered “work”? Who defines it, and for whom? When does any activity rise to that qualification? Do subjective perceptions have a role in the definition of work? Should a worker who thinks of him/herself as unemployed but occupies part of his/her days in temporary, unfulfilling pastime activities (say, to “stay away from trouble”) be truly considered an active member of the labor force? Does any occupation necessarily allow the person who holds it to develop useful “soft skills” that may be of use over the course of their lifetime? Such questions fall far beyond the realm of the economic discipline and answering them adequately would require that researchers be willing to venture into new territories and engage deep philosophical questions. While that may be the right approach to economic research and policy, mainstream economics has so far stayed away from methodological adjustments that imply embracing cross-disciplinary complexity (Monga 2011).

As a consequence of such unwillingness, normative theories of unemployment have long been confined to a dichotomy between various iterations of the Keynesian tradition on one side, and free-market explanations on the other. Keynes originally explained unemployment as resulting from an insufficient demand for goods. Its persistence was attributed to unemployment itself--firms hired fewer workers because their customers purchased too few goods, precisely because of a limited purchasing power mainly due to... unemployment. Government demand-management policies (fiscal, monetary) were thus presented as the right strategy to break such a vicious cycle. Using microeconomic theory, classical economists argued that economic agents buy and sell all that they wish at the prevailing wages and prices so that markets clear and full employment prevails.³ Moreover, empirical evidence showed that fluctuations in aggregate demand did not consistently push inflation and unemployment in opposite directions. Contrary to Keynesians, they concluded that unemployment was most likely the outcome of misguided government regulations or errors in people’s price expectations. This suggested a (simplistic) solution to involuntary unemployment: the elimination of harmful government interventions.

³ See Azam (1994) for a detailed discussion of these debates on labor markets and the macroeconomy in developed countries, and some inference of their relevance to developing countries.

Arguments on both sides were subsequently refined by several generations of researchers. Still, even with sophisticated improvements in the theoretical foundations of the models, they eventually led to a standoff, with each camp holding firm its position: reappraisers of Keynes still reject the New Classical approach, on three grounds: they observe that the big assumption of clearing markets was illusory; they object to the idea that errors in wage-price expectations are large enough to account for the magnitude and length of fluctuations in unemployment; they also wonder why rational economic agents do not acquire the information needed to avoid expectations errors—through newspapers, think-tanks, statistics agencies, and so on. As a result, they have developed some microeconomic foundations for their unemployment theory and concluded that involuntary unemployment persists because wages or prices are not always responsive to market conditions, and that under such rigid conditions, firms may have no incentive to recruit unemployed workers who would then produce goods with insufficient demand.

Meanwhile, new classical economists have continued to oppose Keynesian-like macroeconomic theories that cover quantities determination but not price determination—even though quantities of labor demanded and supplied do, in their view, depend on wages. They still argue that when markets fail to clear, agents face unexploited gains from the exchange: by changing prices (wages) and quantities (labor, time) at which they trade, some rational agents could be made better off without any others being made worse off. On the basis of that rationale, new classical economists tend to build models in which expectations errors cause swings in the unemployment rate. That is the basis of the “natural rate hypothesis”, which posits that all deviations of unemployment from its natural rate are related to errors in wage-price expectations.

While recent studies of unemployment dynamics have attempted to break these Manichean views and recognize the existence of both imperfect information and price-setting behavior, the problem of unemployment—especially in developing countries—has not yet been fully understood by economic theorists. A number of enlightening analyses have certainly emerged from these intellectual battles, most notably the so-called increasing returns approach, the efficiency wage theories, and the insider-outsider theories; the first is of particular interest to developing countries, as it is concerned primarily with the reasons why opportunities for self-

employment are often limited; the second and third try to explain why the unemployed and laid-off workers do not underbid.⁴ But despite their useful insights on some microeconomic issues, they provide little guidance to policy makers who need a consistent framework for macroeconomic development strategies. And they would be of little use to the political leaders in Africa and elsewhere who are confronted with the challenge of putting large segments of their labor force to work in the formal sector.

Whether they are inspired by Keynesianism or by new classical economics, conventional theories typically explain labor market issues as resulting from one of two (extreme) scenarios: on the one hand, there are the so-called frictionless equilibrium situations when the labor market adjusts rapidly to shocks (such as oil crises, interest rates hikes, rapid devaluation of a currency, or sudden productivity changes)⁵ and when the unemployment rate simply reflects a long-term equilibrium in which none of the major stakeholders (employers, workers, unions) has any incentive to change their behavior if other exogenous variables do not change.

On the other hand, there are situations where the labor market is slow to respond to shocks because of their high cost or because of the difficulty of adjusting to them. Proponents of that thesis tend to stress the importance of lags in the way labor markets adjust to shocks. In such situations, unemployment may not reflect the long-term equilibrium rate. These ideas have generated a mainstream consensus according to which labor markets everywhere never reflect either one of these theories exclusively but include elements of both.⁶ Still, their main shortcoming is their focus on micro issues, which may yield useful knowledge only for industrial economies where the labor force is relatively homogenous and market institutions well developed. They do not address the fundamental of big-picture question that policy makers struggle with, namely, how to create enough decent jobs for large segments of the mainly low-skilled labor force of developing countries.

⁴ See Lindbeck and Snower (1985) for a detailed discussion of the pros and cons of these analyses.

⁵ Shocks typically refer to unexpected events due to exogenous factors that affect endogenous economic variables. Political events, natural disasters, accidents, or even brutal changes in policies can create positive or negative shocks. When due to constrained supply or demand, they usually lead to big changes in prices. Technological shocks can affect productivity.

⁶ Persistent unemployment in Europe for instance has often been viewed as the result of labor market shocks, inappropriate institutions that slow down the adjustment process to these shocks, and the interaction between shocks and institutions (Blanchard and Wolfers 2000; Karnassou et al. 2002).

The Quest for an Aggregate Matching Function

One of the most promising analytical frameworks for thinking about the dynamics of hiring and employment is the observation that labor markets experience constant churning of workers and jobs, and that the matching process should take center stage. This has led to the idea of an aggregate matching function, which provides a good understanding of economies characterized by large flows and constant reallocation of workers across jobs (Blanchard and Diamond, 1990).⁷ The model, which posits that at any point in time, many firms are looking for workers and many workers are looking for jobs, has two main ingredients: the first is that it takes time to reallocate, to match workers to jobs; the second is that there is perpetual job destruction, continual layoffs, job creation, and posting of vacancies. A strong assumption is made about wages, which have no allocation role in the short run and therefore no tight connection with employment.

The labor market is then seen as a place where each worker and firm is engaged in a time consuming and stochastic process of looking for and waiting for an appropriate match. The formalization of that process by an aggregate function shows new hires, h , as a function of unemployment and vacancies

$$(1) \quad h = \alpha m(U, V),$$

where α is a scale parameter, and $m_u, m_v \geq 0, m(0, V) = m(U, 0) = 0$.

Changes in skills or geographic distributions of workers and jobs (mismatch) and differences in search and match acceptance decisions are captured by the parameter α . New hires are constructed as the sum of flows into employment from unemployment and from out of the labor

⁷ Estimation of an aggregate matching function can “shed light on the role of different classes of workers (for example, short term-long term, skilled-unskilled, in and out of the labor force) in the matching process. Micro-studies are no substitute for that information. For example, cross-section results on the importance of unemployment compensation for the likelihood of finding a job do not translate directly into implications for aggregate unemployment because less availability by some workers will raise the probability of job finding by others.” (Blanchard and Diamond 1990, pp. 162-163)

force. The basic specification of the aggregate matching function gives new hires as a Cobb-Douglas function of vacancies and unemployment of the form

$$(2) \quad \ln(H_t) = a + b\text{time} + c\ln(V_{t-1}) + d\ln(U_{t-1}) + \varepsilon_t,$$

where all the variables are defined as above.

The model offers predictions about how different shocks affect unemployment, vacancies, and wages. Applying it to the United States, Blanchard and Diamond find that contractions in aggregate activity increase unemployment and decrease vacancies, both putting downward pressure on wages. In contrast, periods of intense reallocation increase both vacancies and unemployment, but may be associated with little or even no pressure on wages. They conclude that in the postwar United States, major movements in unemployment have been mostly the result of changes in aggregate activity, not changes in the intensity or the effectiveness of the reallocation process. Besides the heavy data requirements necessary to estimate such a model, which would not be available for most developing countries, at least two types of objections can be made. First, the analytical usefulness of the notion of vacancies is questionable. Because of its vagueness (at least as compared to unemployed), the concept of vacancy may not be a sound empirical tool. Moreover, no country in the world—not even the United States—holds comprehensive vacancy series that are as reliable or meaningful as the unemployment series. Second, vacancies are only intermediary variables, which may not yield much information on how they evolve over time and how the job matching process is eventually settled. Blanchard and Diamond acknowledge that “it is indeed true that the matching function is only part of the story; any complete story must account for job creation and job destruction and their determinants” (1990, p. 163).

Multiple Production Functions and Asymmetries

Even if one could satisfactorily specify and estimate aggregate matching functions for a low-income country, there would still be the conceptual issues of asymmetries of production and organization that characterize many developing economies and which are not easily dealt with.

In order to capture their particular features that are relevant for analysis and enable a more accurate understanding of labor market developments and policies, one would need to build dual-economy models that go well beyond the two usual sectors (traditional and modern) and their production asymmetry and display other types of asymmetries.⁸

For instance, in much of Africa's agricultural sector, which is dominated by family farms, production decisions are often made according to family ties, social networks, and the prevailing conventional norms. By contrast, in sub-sectors that are dominated by landlords and in the manufacturing sector, production decisions are made with the objective of maximizing profits. That production asymmetry leads to inefficiency, at least from the perspective of static analysis. Maximization of national output and employment would require that the marginal product of each factor (labor, capital, land) be equalized across the traditional and modern sectors. Capital is barely used at all in the agricultural sector, while land is insufficiently used in industry.

An important stylized fact of African labor markets—also observed in many developing economies—is the persistence of rural-to-urban migration despite high unemployment and underemployment in big cities. The explanation is the expectation of better income in urban areas, even for workers who give up some secure (and generally much lower) income in rural areas. The so-called replacement of the equality of wages by the equality of expected wages as the basic condition in a segmented but homogeneous labor market has been at the core of labor market theories for developing economies. Often referred to as the Harris-Todaro hypothesis, it formalizes the motivation of the migrant worker from the countryside who leaves behind his/her secure rural wage W_r to pursue a higher expected urban wage W_u^e despite the probability of unemployment. That expected urban wage is expressed as

$$(3) \quad W_u^e = W_u \left(\frac{E_u}{E_u + U} \right) + 0 \left(\frac{U}{E_u + U} \right)$$

⁸ The determination of the returns to factors should not be the only asymmetry. African farmers or industrialists do not necessarily have the typical, economics textbook-like, objective function (Ela 1980, 1990). The different objectives often observed in the behavior of farmers in the African traditional modern sectors also suggest an organizational asymmetry. Furthermore, some product markets are largely competitive, while others are mostly oligopolistic. The non-clearing product market for one of the sectors is therefore another important source of dualism (see Taylor 1983).

$$(4) \quad W_u^e = W_u(1/(1 + U/E_u)) = W_u(\frac{1}{1+\lambda})$$

where W_u is the urban wage, E_u is the number of employed urban workers, U is the number of urban unemployed, and λ is rate of urban unemployment. The Harris-Todaro hypothesis is therefore expressed as the equilibrium condition

$$(5) \quad W_r = W_u^e \Leftrightarrow W_u = W_r(1 + \lambda),$$

which is often embedded in two-sector, general equilibrium models. While that approach seems straightforward and certainly more likely to yield interesting analytical results about segmented African labor markets, it also introduces a new requirement, namely the equilibrium rate of unemployment. This in turn presupposes a theory of urban wage determination. Researchers have proposed various ways of dealing with the issue, from assuming urban wages to be an exogenously given constant to modeling wage determination as an endogenous process.⁹ In the end, the actual use of the model appears to be much less complex than it appears. Unfortunately, despite its realism, the model has not been successfully applied to developing countries where unemployment stories are usually not just about the demand for jobs, but also about the limited supply of jobs.

Unemployment in Developing Countries: The Failure of Theories

The main assumption underlying conventional theories of unemployment is the notion that the economy tends to move towards its frictionless equilibrium rate, a non-accelerating inflation rate of unemployment (NAIRU) that is established in the medium term. The economy responds to shocks by adjusting more or less slowly towards equilibrium, with the pace of adjustment depending on the real wage and the existing institutions (Layard et al. 1991). The dynamics of the process itself is often assumed to have little or no effect at all on the NAIRU. A rise in unemployment is therefore a reflection of changes in structural factors that affect the NAIRU, most notably the level of social security benefits, taxation, employment protection, the degree of

⁹ The exogenous approach was proposed by Harris and Todaro themselves (1970). Theories of endogenous urban wage determination can be found in Stiglitz (1974) or Calvo (1978).

influence of trade unions in wage bargaining, the pace of geographic and occupational mobility in the job market, the quality of human capital (labor force education), the nature of active labor market policies, etc. Interestingly, that list of fundamental variables usually does not include the quantity and quality of jobs created by the economy (the supply side of the labor market), which is implicitly assumed to be exogenous to the theoretical analysis of unemployment.

There are many unresolved conceptual issues with that dominant theory of unemployment, including whether they could be applied to developing countries where economies tend to have a distinctly different structure. The ambiguities of defining unemployment and comparing it across countries have also been a source of difficulty. Official definitions of unemployment and underemployment are widely accepted but their operational significance and true meaning is still the subject of debate. The ILO defines an *unemployed* as a member of the labor force who meets the following criteria: Not employed during the past seven days, even for one hour; looking for work; and available for work. The *underemployed* are the unemployed plus those who are employed part time (less than 30 hours per week) and want to work full time.

Survey results of percentage of workforce unemployed in 129 countries conducted by Gallup World Poll show that Africa's performance is generally a bit worse than the world average of 7 percent but many countries appear to perform rather well, or at least in the same bracket as Canada, Australia, Finland, Denmark, Belgium, Israel, Brazil, Argentina, Poland, India, Russia, and many other better performing countries.¹⁰ One realizes that something is wrong with the official numbers when countries such as Nigeria, Cameroon, Kenya, Zambia, or the Central African Republic score much better on that criterion than the United States, France, Italy, Spain or South Africa. The story changes when the coin is flipped and one measures the portion of the labor force employed full time for an employer (those working for an employer at least 30 hours per week): Africa's general performance is suboptimal.

¹⁰ Unemployment rates in low-income Africa are about 5-7 percent, with rate of youth unemployment slightly higher. The situation in South Africa and in some other middle-income mineral-exporting countries such as Angola, Botswana and Namibia is almost the inverse of that of low-income countries, with unemployment rates ranging from 25 to 40 percent, with youth unemployment also higher. Source: World Bank data.

The switch from unemployment to employment is important in general and particularly in the African context. First, the global picture of unemployment generally shows a weak relationship with GDP per capita, and the year-over-year change in the unemployment rate has a weak relationship with GDP growth across countries (Figure 1)¹¹. By contrast, employment appears to be strongly correlated to with GDP growth.

Figure 1: Unemployment, Employment and Economic Performance: A Global Picture

Source: Alan Krueger (2011).

If the relationship between unemployment and economic performance is not easily tractable, at least in the short term, unemployment statistics and theories may be less meaningful in the African context than often thought, and the analytical focus should be on tracking information on employment and wages. Employment appears to be less complicated to measure, especially in the high-under-unemployment environment of the developing world. Another reason for focusing on employment is its strong conceptual and economic appeal: analyzing job creation instead of experience with unemployment offers better insights to policies that may be necessary to sustain employment growth. Unemployment statistics shed little light on the anatomy of African labor markets (types of jobs available, fastest/slowest job-creating industries, relative shares of full-time and part-time workers, formal/informal sectors, wage earners and self-employed, social groups and gender balance in the labor force, etc.) and their dynamics over time. An understanding of these factors allows for an assessment of whether structural change—

¹¹ The Sqrt (square root) of GDP is used on the y-axis, though a logarithmic scale would have been probably more revealing. The Spearman Rho correlation shows the magnitude (strength of the correlation) and direction of the association between the two variables. The closer the correlation is to either +1 or -1, the stronger the correlation. If the correlation is 0 or very close to 0, there is no association between the two variables. Here, we have a weak correlation ($r = -.16$).

perhaps the single most important indicator of sustained, inclusive growth—is actually taking place or not.

Official definitions of unemployment and employment allow for comparative analysis. However, these concepts do not reflect labor market realities of low-income countries that often exhibit dual economies, and are not operationally useful to policy makers there.¹² In Sub-Saharan Africa, 70-90 percent of the labor force is engaged in non-wage employment. About 80 percent of these non-wage jobs are in agriculture, 10 to 30 percent are in household or microenterprises (this primary employment only). About one-third of those outside the wage and salary sector typically report multiple economic activities over the year - combining agriculture and non-agricultural enterprises. Almost all of the labor force participants in low income households are engaged in household-based activities – family farming, and very small non-farm enterprises, commonly called “informal enterprises” (Figure 2).

Figure 2: Distribution of primary employment in Sub-Saharan Africa (Percent)

Source: Fox and Sohnesen 2012

¹² The conceptual challenge here also hinges on issues of interpersonal welfare: who is to decide what is really an acceptable employment opportunity? Large segments of the labor force in developing countries tend to define themselves as unemployed even though they hold some type of provisional employment, which they sometimes hold purely for psychological reasons—to keep their mind busy—and not even for subsistence. While it still makes analytical sense to classify such people as “employed”, the reality is that they still perceive themselves as “unemployed” and would often behave as if they were completely. Many of them are young and educated, often with college degrees, and are at the forefront of sociopolitical uprising for jobs.

The still under-studied household enterprise sector generates the majority of new nonfarm jobs in most African countries, even during times of high economic growth (Fox and Gaal, 2008). Household survey data show that, for the past decades, the informal sector (non-farm) has been a growing source of employment for a large fraction of the African youth, but also for older workers trying to seize entrepreneurial opportunities. Its contribution to GDP and poverty reduction has been substantial, and it has become a major point of entry into the labor market for many. For youth in large cities such as Addis-Ababa, Lagos, Kinshasa, Abidjan, Douala, Nairobi, or Dar-es-Salaam, the informal sector is indeed the only viable option for making a modest living, even for those with secondary, vocational, and tertiary education, as the number of employers in the formal sector is limited and there is evidence of skills mismatch in the labor market. Figure 2 reveals the fundamental difference in structure between high-income and low-income labor markets, and why the basic concepts of unemployment/employment and traditional theories have proved ineffective in helping policy makers in Sub-Saharan Africa.

Summing up, it can therefore be said that despite their increasing levels of sophistication, economic theories of unemployment and employment have so far yielded little useful policy guidance for developing countries. While they have provided important insights on specific and often limited micro issues, they have generally fallen short of proposing a framework that governments in poor countries could follow to create employment for the large, often underutilized segments of their labor force. From a policy perspective, it is important to shift the focus to concrete opportunities for creation of formal sector employment in African and low-income countries where production costs remain potentially competitive and can provide opportunities for labor arbitrage.

3. Labor arbitrage: New Ways of Creating Employment

Because the search for solutions to unemployment and underemployment has too long focused on the wrong questions, traditional, mainstream remedies have failed to provide useful answers to developing country policy makers. Learning from ignorance would require drawing lessons from economic history and the experience of other countries where structural change has involved a variety of industrial processes. The transformation of the world economy and the

emergence of large developing countries open up new possibilities for latecomers. African countries can accelerate the shift of labor from low-productivity jobs in agriculture and the informal sector to higher-productivity jobs in agro-industry, manufacturing or tradable services and achieve sustained growth and poverty reduction. But in order to do so, new and more strategic forms of industrial policies that avoid the pitfalls of the past must be designed and implemented.

Tackling the Deficit of Knowledge: Beyond Traditional Remedies

Motivated by the need to preserve sociopolitical stability, many African governments have used public sector employment as a tool for social redistribution. Civil servants are thus often recruited on the basis of education credentials—not on the basis of the country’s economic needs. Wages in the civil administration have often been based on seniority (not individual productivity or market conditions). Public policies tend to reward education degrees rather than productivity, and labor laws are often adopted to extend these rules to the formal private sector. These policies are misguided attempts to provide employment in countries where it is seen as the main determinant of poverty reduction. They reflect the shortage of good jobs and the unpleasant facts of the African labor markets described in the previous section. But they are usually analyzed in the mainstream economic literature as evidence of distortion in the monetary signals that guide investment in human capital across the continent.

Not surprisingly, the proposed solutions to unemployment from conventional economic analysis tend to focus on the removal of distortions in the business environment, and typically include a list of reforms to make the labor market more flexible:

- Changes in hiring and firing practices to reduce transaction costs for firms and give them more leeway—it is assumed that strong employment protection tends to make employers more reluctant to hire workers because it is then more difficult to let them go when business conditions change;

- Changes in the benefit system (level of benefits, duration, coverage, and tightness of the implementation criteria), which is viewed as an important factor affecting the reservation wage;
- Reduction of the tax wedge (tax-related difference between the cost to employ a worker and the worker's take-home pay) to improve the supply and demand for labor;
- Changes in the wage bargaining institutions—the coverage and strength of trade unions and their ability to bargain for higher wages or to organize strikes are seen as determinants of unemployment; and
- The implementation of active labor market policies (training, employment subsidies, help with job matching and job applications, etc.) to increase the chances of the unemployed finding employment.

That reform agenda is generally appropriate in OECD countries where the level of full-time employment is high and where labor has become an expensive factor of production, though the empirical evidence on the effectiveness of the agenda is often ambiguous. In developing countries where full-time employment is low and where there are still labor surpluses, those policy measures rarely deliver the expected results.

Moreover, the implementation of policy recommendations derived from traditional theoretical models of employment has often proven to be particularly difficult in the African context, for several reasons: they leave little room for strategic selectivity. Yet, because of limited financial resources and administrative capacity, not everything can be done at once. Limited financial resources also make the implementation of various active labor market policies (ALMP)—especially their sectoral and geographical targeting—either random or politically motivated. Also, because of vested interests, some binding constraints are politically too costly to remove all at once, or require large amounts of funding when envisaged at the level of the whole country (infrastructure).

It is therefore not surprising that job creation policies have led to disappointing results: most Sub-Saharan African countries started liberalizing their economies in the 1970s and 1980s and have implemented serious market reforms for several decades. Labor market regulations were

substantially relaxed to make firing decisions by firms easier. While labor productivity (measured as percentage growth of GDP per person employed) is reported to have increased from -5.3 in 1990-1992 to 4.4 in 2005-2008, the employment to population ratios did not show much change: in 2008, it was still averaging 64 percent for the entire population (15 years and older), the same level observed in 1991. For the youth (ages 15-24), it has declined slightly in that twenty-year period, from 50 to 49 percent.¹³ Clearly, the labor market reforms have not led to the creation of new formal sector employment opportunities.

The dynamics of population growth makes things even more challenging (Figure 3). With population growth projected to be 2.2 percent in the next 25 years and about 2-3 million young people entering the labor force every year, Africa's workforce will grow by 11-14 million a year for the next couple of decades. The African private sector faces the challenge of creating employment opportunities to absorb the youth bulge: about two-thirds of the Region's population is under the age of 24 and is underemployed—including those with college and university degrees. Most workers are trapped in very low productivity activities in subsistence agriculture and the informal sector. Sub-Saharan Africa will have to generate large employment opportunities annually in order to accommodate the high rate of population growth.

Figure 3: Population by age groups and sex (absolute numbers)

¹³ Source: World Development Indicators.

Source: Data from the United Nations

Economic development should not be left to chance or to generic reform prescriptions. The ultimate goal of development strategies in Sub-Saharan Africa should be to achieve structural transformation and to lift the 80-to-90 percent of the people currently in low-productivity (subsistence) activities that are too often only disguised unemployment into industries and sectors where there is potential for gradual shift towards higher-productivity and higher-value industries. Lessons from history suggest that manufacturing is the most reliable route towards that goal.

The Economic Magic of Manufacturing

What explains Asia's good performance in creating full-time jobs in both resource-poor and resource-rich countries? The economic literature has provided a wide variety of answers, which can be grouped into three categories: first, the suggestion that Asian countries, especially those in East Asia, were better endowed with experienced entrepreneurs and educated labor forces than other developing countries (Perkins and Roemer 1994); second, the assertion that in the 1960s

many Asian countries went through political changes that brought “more competent, developmentally focused regimes, a revolution that has touched only a few African countries” (Roemer 1994, pp. 234-235); and third, the related argument that Asian countries had more human and administrative capacity to design and implement good policies than African countries.

None of these theses appears to be supported by empirical evidence. Researchers from a wide range of academic disciplines have long documented the millennial experience of private business people throughout the continent of Africa (Ilfie 1983; Kennedy 1988; Cissé 1988; Taylor 2012). Likewise, the prevailing view of competent and development-focused governments in Asia is not consistent with the political history of countries such as China, Vietnam, or Cambodia, where authoritarianism, political turmoil, and even terrible genocides were as prevalent as anywhere else in the developing world. Finally, the suggestion that the problem was the comparatively lower levels of capacity in Africa neglects the facts that countries such as Ghana, Cameroon, Senegal, or Kenya, had better administrative capital and human capital in the 1960s and 1970s than most Asian countries. Moreover, in a world where skilled labor is highly mobile, capacity can be built or attracted from abroad, and retained and used as necessary—as shown by the large number of foreign expertise in many government ministries and agencies in good-performing Asian countries such as Qatar, Laos, or Malaysia.

The main reason why some countries have managed to achieve sustained, inclusive growth over long periods of time, create enough full-time jobs to keep large fractions of their labor force employed, and move from low- to middle- and even high-income status is that they were able to ignite and sustain rapid industrialization (Lin and Monga 2011). Their development strategy was based on the acknowledgment that economic growth is a process of continuous industrial and technological upgrading that also affects the dynamics of institutional change.

Industrialization has always played a key role in growth acceleration processes that are sustained over time and eventually transform economies from “poor” to “rich.” In the early phases of modern economic growth, which started with the Industrial Revolution, manufacturing in particular played a larger role in the total output of successful countries and their higher incomes

were associated with a substantially bigger role of the transport and machinery sectors. Throughout the nineteenth and twentieth centuries, countries in North America, Western Europe and Asia were able to transform their economies from agrarian to industrial powers, which included a rapidly growing services sector fueled in large part by the multiplier effect of manufacturing. As a result, they built prosperous middle classes and raised their standards of living.

Recent empirical studies show that manufacturing has been a key factor to the prosperity of nations, with over 70 percent of the income variations of 128 nations explained by differences in manufactured product export data alone (Hausman et al. 2011). In fact, few countries have achieved high-income status without industrializing. Only in circumstances such as an extraordinary abundance of natural resources or land have countries been able to do so (Unido 2009).

Manufacturing has evolved and changed the dynamics of the world economy. Profound changes in geopolitical relations among world nations, the widespread growth of digital information, the decline of transportation costs and the development of physical and financial infrastructure, computerized manufacturing technologies, and the proliferation of bilateral and multilateral trade agreements have contributed to the globalization of manufacturing. These developments have permitted the decentralization of supply chains into independent but coherent global networks that allow transnational firms to locate various parts of their businesses in different places around the world. The creative design of products, the sourcing of materials and components, and the manufacturing of products can now be done more cheaply and more efficiently from virtually any region of the planet while final goods and services are customized and packaged to satisfy the needs of customers in faraway markets.

The globalization of manufacturing has thus allowed developed economies to benefit from lower-cost products driven by the lower wages used for production in developing countries such as China, India, Bangladesh, Costa Rica, Mexico, or Brazil while creating job and learning opportunities in these formally poor nations. The intensity of these exchanges has led to new forms of competition and co-dependency.

The Myth of the Dying Golden Goose

In recent decades, innovation, technological developments and new sources of economic growth have led some economists to question whether “manufacturing still matters”. Manufacturing’s share of global value added has declined steadily over the past nearly 30 years as the global value added of services has grown. In 1985, manufacturing’s share of global value added was 35 percent. By the late 2000s, it had declined to 27 percent. Services grew from 59 percent to 70 percent over the same period (Unido 2009). However, these trends are mainly observed in high-income countries. They can be explained by several factors: productivity increases and raising standards of living in advanced economies, which have pushed up wages and forced many industries to delocalize their production in lower-costs nations; the decrease in relative prices of consumption goods due to higher levels of efficiency in the world economy and the simultaneous growth of the demand for services such as healthcare, security, or transportation; and, perhaps even more important, the multiplier effect of manufacturing on services jobs—the development of industries everywhere automatically generates a wide variety of new economic activities, from transportation to housing, from restaurant to entertainment.¹⁴

Concerns about the future of manufacturing as a viable source of economic growth have been investigated empirically by Hausmann, Hidalgo, et al. (2011) with a measure of the sophistication of an economy based on how many products a country exports successfully and how many other countries also export those products. Looking at the composition and quantity of a nation’s manufacturing, they observe that sophisticated economies export a large variety of “exclusive” goods that few other countries can produce. To do this, these economies have typically accumulated productive knowledge and developed manufacturing capabilities that others do not have. It therefore appears that national income and economic sophistication (“economic complexity”) tend to rise in tandem, and the linkage between manufacturing, economic complexity and prosperity is highly predictive, with economic complexity being much better at explaining the variation in incomes across nations compared to any other leading

¹⁴ A study by the U.S. Department of Commerce, Bureau of Economic Analysis, shows that manufacturing has a higher multiplier effect on the American economy than any other sector with US\$ 1.40 in additional value added in other sectors for every US\$ 1.00 in manufacturing value added. Source: World Economic Forum (2012).

indicators. In other words, even basic manufacturing expertise and capabilities can gradually breed new knowledge and capabilities and thus new, more advanced products, provided that the right strategic and business decisions are made on industrial and technological upgrading. In the words of Hausmann and Hidalgo, economic development is “a social learning process, but one that is rife with pitfalls and dangers. Countries accumulate productive knowledge by developing the capacity to make a larger variety of products of increasing complexity. This process involves trial and error. It is a risky journey in search of the possible. Entrepreneurs, investors and policy makers play a fundamental role in this economic exploration. Manufacturing, however, provides a ladder in which the rungs are more conveniently placed, making progress potentially easier.” (2012, p. 13)

Still, some very valid questions remain about whether manufacturing as a long-term source of economic growth is a dying golden goose, especially for low-income countries that may not be well prepared to reap the economic advantages of globalization. Several arguments can be made indeed to question the viability of labor-intensive industries as a means of catching up in a world economy that is increasingly dominated by high-tech and sophisticated industries and innovative services. While it is true that technological developments and the logic of mass-production make it likely for an increasing share of goods to be produced more efficiently by machines, it is also certain that hand-made labels will remain highly valuable features to customers of tradable goods around the world—just like the global rise of genetically-modified food has not suppressed the large market for organic food. In addition, some industries will remain labor-intensive by their very nature (most notably tourism) despite technological progress.

Another concern about the size of the potential benefits of manufacturing in developing countries has resurfaced recently in the economic literature in the form of export pessimism. It is based on the view that policies aiming to expand exports by developing countries will lead to a decline in their terms of trade because of an inability (due to weak demand created by the global recession) or unwillingness (expressed via new forms of protectionism) of developed countries to absorb these exports. Two reasons are often given to justify skepticism to the idea that today’s poor economies can follow instead the export-led model that allowed many Asian countries to transform their economies: first, it is assumed that over the next decade the major international

macroeconomic adjustment will consist of the reduction in excess demand by a few countries, notably the U.S., and a concomitant increase in domestic absorption of GDP in a number of surplus countries mainly in Asia. The argument here is two-fold: it will be difficult for low-income countries to attract a substantial share of U.S. imports, which are projected to decline if rebalancing is to take place; and it has never been easy for poor countries to penetrate the Chinese and other Asian markets where the main policy priority is to increase domestic consumption. Second, it is often said, the existence of very large and powerful industrial complexes benefitting from agglomeration economies, particularly in China, makes it difficult for new entrants to compete.

These arguments may not hold under close scrutiny. Even if the reduction of excess demand in large economies like the U.S. occurs, it is likely to be more than compensated by the increase in excess demand in other industrialized and emerging economies where rising income almost always changes saving and spending habits. Moreover, the narratives of global imbalances may be less of a threat to the world economy as often thought (Monga 2012b) and they have been changing constantly. For much of the past few years, China was criticized for its contribution to global imbalances and a corresponding shortfall in global aggregate demand. It now appears that the surpluses of oil exporting countries may actually be the main responsible for the imbalances.¹⁵ But there is no reason to assume that oil exporters will necessarily save most of their petrodollars, which would indeed reflect a permanent transfer of income from oil consumers to oil producers, with depressing implications for global demand.¹⁶

While it seems quite likely that the rates of export growth that prevailed during the period 1960-2005 may not be sustained in the post-Great Recession era, it is highly unlikely that global trade volumes, which have increased constantly for more than half a century, will decline. Despite recurrent threats of protectionism, it is very likely that globalization will continue to shift an increasing proportion of manufacturing capacity from developed to emerging and even low-

¹⁵ The largest counterpart to the U.S. current-account deficit is the combined surplus of oil-exporting economies, which have experienced big windfalls from high oil prices. The IMF projects them to run a record surplus of \$740 billion in 2012, most of which will come from the Middle East. That would dwarf China's expected surplus of \$180 billion. Since 2000 the cumulative surpluses of oil exporters have come to over \$4 trillion, twice as much as that of China.

¹⁶ It is estimated that after the oil-price shocks in the 1970s, about 70 percent of the increase in export revenues was spent on imports of goods and services (Economist 2012).

income countries and substantial new markets will appear in the world economy—not least because large new players such as China, India, Brazil, and others, will find themselves on the receiving ends of low-skilled manufacturing products that made them successful. For low-income countries, including those in Sub-Saharan Africa, it will always be possible to find a niche in which a country may achieve low costs and thus penetrate advanced markets. The challenge will be to identify the niche, and design pragmatic and targeted policies to exploit these opportunities (Page 2012).¹⁷

The other pessimistic suggestion that the mere existence of strong industrial complexes in Asia or elsewhere makes it difficult for new entrants to compete is both true and inconsistent with lessons from economic history. That same argument could have been made with regard to Japan in the 1950s and 1960s, or to dismiss industrialization attempts by other Asian countries in the 17970s and 1980s. They would have proven erroneous because the great adventure of economic development has always been the story of the rise and fall of manufacturing powerhouses once considered unshakable yet eventually overtaken by new competition, and a chronicle of creative destruction. The fact that mass-production and close business links have already been established in most competitive and profitable industries simply makes it necessary for latecomers to find ways to integrate such networks. The wage-productivity dynamics makes it difficult if not impossible for the successful Asian economies to permanently hold their comparative advantage in labor-intensive, low-skill manufacturing industries. That also opens up new manufacturing opportunities for lower-wage countries around the world.

The incessant improvement of transportation and telecommunication services will continue to facilitate the distribution of production chains—even in the same industries—in various locations around the world. This will open up an infinite number of manufacturing opportunities for low-income countries, because locations need to have fewer “personbytes” in place than in the past. The various elements of the value chain (design, procurement, marketing, distribution and manufacturing) need not occur in the same place, meaning that places with few “personbytes” can more easily get their foot through the door and then add functions more gradually

¹⁷ Lin and Monga (2011) offer a menu of policy options that all low-income countries could choose from to exploit the benefits of backwardness, including those countries with low physical and human capital and technology.

(Hausmann and Hidalgo 2012). Such changes will make the manufacturing space accessible to more countries, with the concomitant reduction of manufacturing jobs in the advanced countries. Manufacturing will therefore provide more long-term economic benefits to African economies than other activities: it still generates economies of scale, sparks industrial and technological upgrading, fosters innovation, and has big multiplier effects.

The Hidden Treasures of a Multi-polar World

Human history is certainly not a linear or a teleological process but one can conjecture with some level of confidence that today's low-income countries could still benefit enormously from the new job opportunities made possible by the economic progress observed in many large emerging economies over the past three decades. The world economy has changed dramatically in the period 1980-2010. Emerging and developing economies now represent about half of global GDP (measured in PPP terms), as shown in Figure 4.

Source: IMF Data Mapper, October 2012

The upcoming economic “graduation” of large emerging countries such as China, Brazil or India from low-wage, labor intensive industries opens up enormous growth and job-creation opportunities (an estimated 119 million manufacturing sector jobs will have to be relocated to low-income countries as estimated by Lin (2011) to low-income countries—provided that they can organize themselves to attract these jobs with more competitive wages and lower transaction

costs. The average wage per worker in the manufacturing sector is about 25 percent of that of China's and 70 percent of that of Indian workers, and it compares favorably with Vietnam (see Table1).

Table 1: Average Monthly Wage Including Benefits, by Industry (US dollars)

Sector	Tanzania All workers	Ethiopia Unskilled- skilled	Nigeria Unskilled- skilled	Vietnam Unskilled- skilled	China Unskilled- skilled
<i>Food</i>	84	26-141	87-135	78-363	192-442
<i>Garments</i>	80	26-185	54-85	79-181	237-370
<i>Textiles</i>	61		71-120		
<i>Machinery & Equipment</i>	60-151		125-163		
<i>Wood, wood products</i>	67	37-119	67-102	85-259	206-442
<i>Metal and Metal products</i>	124	89-181	82-107	117-233	192-369
<i>Other manufacturing</i>	168	67-154	87-130		
<i>Average Manufacturing</i>	181				

Source: For Tanzania, Annual Survey of Industrial Production and Performance, 2008; for Nigeria, Lin 2012a. Other statistics are from Dinh et al. (2011), Vol II. Note: Since Tanzania Survey does not distinguish unskilled or skilled workers, wages for both unskilled and skilled workers are used for other countries.

For Sub-Saharan Africa, the advent of a multi-polar world may convert the demographic challenges outlined above into new possibilities. Africa's "youth bulge" represents an unprecedented opportunity to generate inclusive growth and reduce poverty (opportunities): with the rest of the world, especially the developed world, ageing, Africa can be the main supplier of the world's workforce. At the macroeconomic level, all these unemployed and underemployed young people not only need jobs, but they can potentially create jobs and foster economic growth. Also, increasing population density can be an asset to development (World Bank 2008).

At the sectoral level, Sub-Saharan Africa can take advantage of rising manufacturing wages in China, India, Brazil, and other large, successful middle-income countries by attracting most of the estimated 119 million jobs that will be relocated—provided that it can out-compete other low-income regions of the world by quickly and effectively implementing key strategic reforms that are required to accommodate domestic and foreign investors. Employment in Africa's manufacturing sector is still at very low levels. There are already many signs of outsourcing in the services sector, as call centers and financial services emerge in countries such as Kenya or Nigeria. In the agriculture sector, changes in global food markets—most notably increased demand and prices—are also likely to bring new opportunities for job creation to Africa.

In addition to light manufacturing potential, many African countries are endowed with vast amount of arable land (often with a cultivation rate of less than 10 percent) and rich minerals (including oil, copper, gold, diamonds, coal, iron, uranium, nickel, chrome, tin, platinum, etc.). The challenge is how best to turn the untapped natural resources into productive assets in diversified economies that generates jobs and income.¹⁸ Lessons from other countries that have successfully exploited similar opportunities to diversify and industrialize their economies can inform policy design and implementation.

A Simple Analytical Framework for Labor Arbitrage

Why have African economies not been able so far to attract substantial manufacturing industries in search for competitive platforms of production? The question can be answered using a simple Ricardian model based on international comparisons of unit labor costs to assess international competitiveness.¹⁹ At a disaggregated level, that framework provides a coherent basic tool for understanding the main macro- and microeconomic determinants of trade flows. Applications of various versions of the model to the African context have almost always assumed that labor costs there are the central point of contention. The relative unit labor cost (comparative measure of the ratio of wages to productivity) is indeed an essential relative price in the Ricardian model of trade. Edwards and Golub even make the point that “in a world where capital is mobile and production is footloose between countries, it is the relative price of nontradable *inputs*, notably labor, rather than *outputs* that matters” (2004, p. 1326).

It is useful to start with the traditional framework before explaining why a modification is needed. The typical approach, as in Ceglowski and Golub (2011), focuses on a_i as the unit labor requirement (or the inverse productivity) for a given sector or industry, i . It can be said that

$$(6) \quad a_i = \frac{L_i}{Q_i}$$

¹⁸ Throughout the world, it is estimated that 445 million hectares of land are uncultivated and available for farming. About 201 million hectares are in sub-Saharan Africa, 123 million in Latin America, and 52 million in Eastern Europe. See Deininger et al. (2011).

¹⁹ See Dornbusch et al. (1977) for the general formulation.

with L representing labor employment and Q the value added. Marginal productivity and hence a_i are assumed to be constant with respect to variations in L_i . The symbols w and e are then used to denote the average labor compensation per worker and the exchange rate (domestic currency per unit of foreign currency), respectively. Then, the big assumption is made that labor is the only factor of production (or that other factor costs do not differ across countries). The logical next step from such a big assumption is that average costs of productions are equal to unit labor costs (ULC), $a_i w_i$. Therefore, international competitiveness in sector i depends on relative unit labor costs ($RULC$),

$$(7) \quad RULC_i = \frac{a_i w_i}{a_i^* w_i^* e}$$

It follows that the home country would have competitive advantage in sector i when its unit labor costs are below those of its trading partners, meaning that $RULC_i < 1$. A rewriting of equation (7) provides a decomposition of relative unit labor costs into components that sheds light into policy making:

$$(8) \quad RULC_i = \frac{a_i w_i}{a_i^* w_i^* e} = \left(\frac{a_i}{a_i^*} \right) \left(\frac{w_i}{w_i^* e} \right) = \left(\frac{a_i}{a_i^*} \right) \left(\frac{w_i}{w_i^* e_i^{PPP}} \right) \left(\frac{e_i^{PPP}}{e} \right)$$

Where e_i^{PPP} represents the purchasing power parity exchange rate for sector i defined as the ratio of domestic to foreign price levels. A further substitution of the definition of e_i^{PPP} as $\frac{p_i}{p_i^*}$ into equation (8) highlights the decomposition of relative unit labor costs into relative productivity and relative wages (measured in a common currency). Lindauer and Velenchik (1994) followed a similar approach but they too limit their analysis of labor costs, which are in reality only one aspect of labor arbitrage.

There are obvious advantages in using such a formulation: a country's competitiveness (gains or losses) vis-à-vis others is seen to depend on one or several of the following three elements: (i) its labor productivity relative to others; (ii) its real wages relative to others or, equivalently, its relative nominal wages evaluated at e_i^{PPP} ; and (iii), the level of its domestic currency exchange rate relative to its purchasing power parity level.

The main problem, however, is that the relative unit labor cost framework is a very aggregate concept. It focuses on labor costs and labor productivity, and neglects other costs of doing business such as infrastructure (transportation, electricity, water, telecommunications, access to capital, availability of human capital, rent-seeking and state capture, etc.), which are assumed to be embodied into the production function. The rationale often given for excluding such important costs is that the limitation is mitigated insofar as the availability and costs of infrastructure, human capital, and other services, influences labor productivity and consequently are reflected in relative unit labor costs. It is also assumed that the relative costs of nontradable inputs, especially labor, matter more for export competitiveness than the costs of tradable inputs such as capital and energy, which are viewed as equalized internationally.

These assumptions can be misleading. If things were so simple, lower-wage, labor-intensive African economies such as the Democratic Republic of Congo, Ethiopia, or Tanzania, would be attracting manufacturing firms from China, Brazil, and other emerging economies—and in large proportions. Moreover, in today's world, it is not just capital that is mobile: all factors of production are much more mobile than several decades ago. This includes skilled labor, which poor economies do not have in adequate supply. Therefore, engineers, talented managers, equipment repair technicians, etc., should be moving across boundaries to settle in poor African countries where their specialized skills are needed—as they do in many countries in the Middle-East. Clearly, there is more to the story of the determinants of delocalization decisions in global manufacturing than relative unit labor costs.

A more explicit and policy-relevant organizing framework would therefore go beyond unit labor costs to stipulate transaction costs, defined to include other important costs of doing business. Theoretically, it should be possible to compare unit production costs (UPCs) across countries, at least for homogenous outputs, with lower UPCs predicting better performance in the sale of manufactured goods, or higher level of attractiveness for firms in need of re-localization of specific components of their supply chains. Unit production cost is defined as

$$(9) \quad UPC = \left[\left(\frac{w_m L}{Q} \right) + \left(\frac{Z}{Q} \right) \right] \left(\frac{1}{e} \right)$$

where w_m is more specifically the manufacturing sector wage, Q a physical measure of output, and Z a vector capturing all other transaction costs needed for production and doing business in the country.

Equation (4) can be reformulated with a focus not on an aggregate Q but on the average product of labor, AP_L :

$$(10) \quad UPC = \left[\left(\frac{W}{AP_L} \right) + \left(\frac{Z}{AP_L} \right) \right] \left(\frac{1}{e} \right)$$

That formulation highlights three major factors influencing competitiveness, and therefore, determining the potential for any low-wage economy to attract industries that must be delocalized from successful emerging countries: the ratio of wages to productivity (the first term in the right side), the level of transaction costs per worker, and the exchange rate whose importance has too often been overlooked in the economic discourse on Africa.²⁰ The UPC formulation provides a broader picture of the conditions under which labor arbitrage can occur. It also lays out the policy framework that low-income countries should follow in order to reap the new benefits of globalization. The first term in Equation (10) simply states that the ratio of wages to productivity is the main driving force behind unit labor costs, which are only part of unit production costs. Therefore, countries can be internationally competitive regardless of whether they are high-wage/high-productivity or low-wage/low-productivity—provided that they can maintain their unit labor costs low. The second term on Equation (10) indicates that the important factor that complements decisions about labor arbitrage and relocation of industries from high- to low-wage countries is the relative level of transaction costs per worker. The third term stresses the importance of the exchange rate, which should not be overvalued in low-income countries.

²⁰ This is true in particular for the 14 African countries whose national currencies have been pegged at a fixed exchange rate to the French Franc and the Euro, with mostly devastating consequences on competitiveness. See Monga (1997) and Devarajan and de Melo (1991).

For African countries trying to attract these manufacturing employment opportunities that will have to be outsourced from China, Brazil, and other emerging economies because of the steeply rising wages there, the policy prescriptions are relatively straightforward: in addition to exploiting their lower-wage advantages, they should credibly ensure that the cost of doing business and the exchange rate remain competitive. The question is how to do that in economies that have long suffered multiple and compounded distortions—sometimes over centuries. The next section offers a practical policy framework for job creation.

Winning the Globalization Jackpot: A Policy Framework for Job Creation

For policy makers in Sub-Saharan Africa, the big question then is: How to attract the jobs bonanza created by rising wages in successful large middle-income countries, foster manufacturing and stimulate structural transformation? The answer boils down to two main obstacles that must be overcome: high factor costs (often due to distortive regulations and rigidities in land policy) and high transaction costs (often due to weak infrastructure and poor governance). In order to bring large fractions of the unemployed or underemployed labor force into the formal job market, lift millions out of poverty, and achieve social stability and prosperity, policy makers must recognize that their meager government budgets and administrative capacity must be allocated not to generic, broad-based reforms or to “priority sectors” vaguely defined as “agriculture”, “education”, “infrastructure”, or “private sector development”, but to a small number of strategically targeted programs, reforms, and industries in which private firms can emerge and become competitive domestically and internationally.

The diverse set of country experiences where industrialization has been successful in creating a critical mass of full-time employment shows that active labor market policies (ALMPs) only deliver results within a sensible framework for identifying competitive industries and facilitating public-private partnerships. These policy packages include various measures aiming at increasing the quality of the labor supply through activities such as launching programs for direct job creation, retraining, and providing assistance for job search to improve job matching. Their main goal is generally to increase the probability that the unemployed will find jobs and that the underemployed will improve their marketability, productivity, and earnings—a dynamics seen as

conducive to higher participation rates and better social inclusion. But their effectiveness and sustainability are contingent to a broader industrialization strategy.²¹

Lin and Monga (2011) suggest a practical six-step growth identification and facilitation (GIF) framework to help policy makers in Sub-Saharan Africa and in other developing regions identify reliable growth paths and facilitate the emergence of employment-generating industries: First, identify those tradable goods and services that have existed for a period of about 20 years in dynamically growing countries that have similar endowment structures but with a per capita income that is about double their own. The focus should be not on natural resources which do not directly create many employment opportunities but on labor-intensive industries that can be relocated across borders. Simply looking at Sub-Saharan Africa's GDP per capita of \$1,200 in 2011,²² it appears that a relatively large group of upper middle-income countries such as Peru, Brazil, Chile, China, Malaysia, or Thailand could be good targets/anchors for its job creation strategy.

In a globalized world where the private firms that are competitive in international markets must cluster in sectors consistent with their country's comparative advantage (keep both production costs and transaction costs in check), certain specific sectors must be given priority. Government capacity must be devoted to the facilitation of these carefully selected industries—and to a small number of localized reforms that are realistic in any given sociopolitical context. By facilitating the emergence and clustering of competitive private firms in some geographic locations with excellent logistics (without using the distortive instruments of old industrial policies such as tariffs or other forms of heavy protection), governments can foster the backward and forward linkages that brings capital and knowledge to national economies. Ultra-selectivity in the choice of potentially competitive industries and reforms therefore requires both realism and boldness in public policies: focusing on a limited number of initial sectors with high likelihood of success (because they are consistent with a country's comparative advantage) is the most sustainable strategy for economic development (Lin 2012a, 2012b).

²¹ For a critical review, see Betcherman et al. (2001). The debate over ALMP is often framed in terms of their supposed superior benefits when compared to *passive* labor market policies such as social transfers or unemployment insurance, which are typically designed to mitigate the pain of unemployment and provide financial support to the unemployed—without directly improving their skills and marketability.

²² Source: World Development Indicators.

Second, among the industries on that list, identify those that have already attracted domestic private firms and generated employment, and try to pinpoint: (i) any obstacles that may be preventing them from upgrading the quality of their products; or (ii), any barriers that may be discouraging other private firms (both formal and informal) from entering. This could be done using value-chain analysis or the Growth Diagnostics framework suggested by Hausmann, Rodrik, and Velasco (2008). The government can then implement policies to remove the constraints at home, and carry out randomized controlled experiments to test their effectiveness of eliminating the constraints before scaling those policies up to the national level.

Third, some of the identified industries may be completely new to domestic firms. African governments could encourage firms in the higher-income countries identified in the first step to invest in these industries, since those firms have the incentives of lower labor costs to relocate some of their low-skill activities in lower-income countries. Governments could also set up incubation programs to induce the entry of private domestic firms into these industries. China, whose GDP per capita is currently about twice that of many leading African countries, is a particularly interesting potential target. As noted by Lin (2011), after thirty years of double-digit growth, it is now facing the challenge of rising wages. In order to successfully pursue its economic development process, it must press on with the process of continuous industrial and technological upgrading, and shift its manufacturing base from low- to higher-skilled jobs. This will free up a large proportion of the country's current 85 million manufacturing jobs. Other countries such as Brazil are facing the same challenge.

Fourth, unexpected opportunities for many African economies may arise from technological breakthroughs around the world. The authorities should therefore pay close attention to successful discoveries and engagement in new business niches by private domestic enterprises and provide support to scale up those industries, especially those that create job opportunities.

Fifth, Africa is still a region with relatively poor infrastructure and unfriendly business environments. It would be unrealistic to expect that such problems can be addressed quickly. But well-located, well-equipped special economic zones or industrial parks could help overcome barriers to firm entry and foreign investment. These can create "islands" of well-functioning

environments in places where budget and capacity constraints make it difficult to implement economy-wide reforms in a reasonable timeframe.

Sixth, African governments can compensate pioneer firms that take the risk to enter competitive new industries and create jobs through time-limited tax incentives, co-financing of investments, or access to foreign exchange. Tax incentives or credit guarantees granted to viable labor-intensive small- and medium-sized enterprises seem to have worked well in many emerging markets and transition economies during recent the global financial crisis. To avoid rent seeking and the risk of political capture, these incentives should be limited both in time and in financial cost, and should not be in the form of monopoly rent, high tariffs, or other distortions.

Making ALMP Work: A Menu of Possibilities

Empirical analyses of the effectiveness of ALMPs as remedies to unemployment or recipes for job creation rarely yield conclusive results (Betcherman et al. 2004). The job creation approach suggested in this paper provides a context in which ALMPs would have the highest likelihood of success. By highlighting the prime importance of the identification of potentially competitive industries and ensuring that reforms and resources are targeted to activities, programs and projects that are economically viable, the GIF approach offers a policy framework where macroeconomic and ALMPs are specifically not implemented generically and randomly but geared towards enhancing an already competitive growth.

Macroeconomic stability is certainly of crucial importance in African countries and elsewhere. However, the role of demand policies in the fight against unemployment should not be neglected, especially in developing countries with relatively good fundamentals. Output growth is the most important determinant of employment growth. Using fiscal and monetary policies whenever possible to support the economic recovery and sustain growth can help reduce uncertainty. It would also make firms more inclined to invest and recruit.

There is generally little room for monetary policy, especially in countries where interest rates are already relatively low. But when the threat of inflation is not too severe, central banks can resort

to unconventional monetary policy tools to provide an enabling environment for business development. Monetary policy can also have large and long lasting effects on real interest rates, and by implication, on output or unemployment. Furthermore, a sustained increase in real interest rates induced by monetary policy can affect not only the actual rate of unemployment but also the natural rate: unemployment puts pressure on wages, even when bargaining is only between employed workers and firms.

Many unemployed college graduates throughout Africa eventually give up search or lose their skills, which imply that sustained high unemployment will lead to an increase the natural rate itself. When monetary policy is able to affect real interest rates for a long period of time, it can also affect the natural rate of unemployment through capital accumulation. Real interest rates affect the cost of capital; the cost of capital affects capital accumulation; the capital stock affects the demand for labor; and the demand for labor affects unemployment.

In some countries, there may be some room for well-targeted fiscal measures that can increase economic output and job possibilities. Direct employment creation—i.e. temporary jobs through public works—for example would have a stabilizing effect in a climate of heightened sociopolitical tensions. But the public finance situation in many countries across the continent may not be able to accommodate such a measure. When the fiscal space becomes available to do so, governments should refrain from hiring the unemployed directly, but contract instead with private firms or nonprofit organizations to provide jobs. Vulnerable groups and people in the poorest regions and industries should be the targets of such measures.

In addition to providing much needed income to people who are typically among the urban poor, well-targeted public works in infrastructure (new investment, repair, or maintenance) could remove bottlenecks to growth and create the conditions for increased productivity. Accelerating the implementation of shovel-ready labor-intensive, productive infrastructure projects should be a priority. Spending on productive infrastructure that remove bottlenecks on growth (with good rates of returns) and operations and maintenance spending can both boost demand and generate sources of growth in the longer run. Evidence from empirical work on Latin American and Caribbean countries suggests that infrastructure investment can have a sizable impact on

employment generation (Calderon and Servén 2010). It is true that they may crowd out some private sector jobs, especially if the targeting is ineffective. Salary levels should therefore be set carefully so that these programs are cost-effective.

Wage subsidies could also be considered for industries that are clearly competitive but facing temporary shocks. They would encourage employers to keep employees on their payroll that they would have otherwise laid off for economic reasons, and also to hire young workers or women by paying part of the salary for a given period of time. Wage subsidies often allow such workers to acquire or develop important skills that eventually give them the opportunity for long-term employment. It also helps them maintain contact with the labor market. However, because some employers may view subsidies simply as a temporary source of cheap labor, the risk of deadweight losses should also be considered. Governments should therefore be prudent and even conservative in determining the level and duration of the subsidies.

More fundamentally, an extensive reliance on public sector employment as a source of jobs and income often produces deep social and cultural consequences, and even hysteresis: some regions can be caught in equilibrium of dependency in which public sector jobs become the only source of income and opportunities for private sector development do not materialize; this creates a vicious, self-fulfilling circle whereby entrepreneurship is discouraged while dependency on government for livelihood is enhanced. The end-result is often the creation of powerful political constituencies of public sector employees and unions who oppose labor market reforms. Not surprisingly, increasing public employment is much easier than reducing it, even in difficult times. The question is whether public sector employment can be used successfully as a sociopolitical tool, and for how long. Figure 6 offers a broad picture of the relationship between public wage bills and GDP in a sample of countries. It shows that African countries tend to pay more for public sector wage bills than the rest of the world.

Figure 6: Public Sector Wage Bill and Economic Development in a Sample of Countries

Support to small and medium-sized enterprises should be envisaged as a potential tool for overcoming market failures in the financial sector. One possible instrument could be the provision of special lines of credit funded by multilateral banks and new institutions such as the African Investment Bank²³ and from which banks could lend to small businesses. If designed to support the development of industries that are consistent with the country's comparative advantage, these instruments could help both on the supply and on the demand side of Africa's labor market.

Training programs to help new workers and those laid off in recent years accumulate or regain skills could contribute to the increase productivity if such programs are targeted to the neediest groups (the youth, the disadvantaged or women). Youth-oriented programs designed with private firms to assess demand for skills and to provide corresponding tailored training programs for young people (following the German model) seem to yield good results in some African countries. It must be acknowledged, however, that such programs are often costly, and may not yield tangible results if the rate of economic growth does not accelerate. To ensure maximum chance of success, they should be designed and implemented in close partnership with the private sector and tailored to suit the business needs of the potentially competitive industries in each country.

²³ For a discussion of the rationale for an African Investment bank (in addition of the existing African Development Bank), see Monga (2012a).

Finally, job search assistance and employment services currently favored by many African governments can indeed help match jobs and job seekers. They are usually inexpensive and often help reduce the length of unemployment. But they typically benefit only a small number of active job seekers. Promoting access to the information and communications technologies (ICT) sector could help remove supply and demand-side constraints in the labor market. Recent sociopolitical developments across the Arab world have demonstrated that the youth are the biggest consumers of technology, which they use to enhance their skills, seize opportunities, and connect to a global audience. Well-targeted policy measures to provide disadvantaged groups with access to ICT (IT alphabetization, investments to create ICT communal areas for rural youth and women, etc.) could foster the emergence of new economic activities and generate employment.

4. Conclusion

The multidimensional benefits of employment for all human societies have always been well understood by researchers and policy makers and are now empirically documented (World Bank 2012). Economists have long attempted to design theoretical and policy frameworks aimed at optimal labor market conditions. But too often these intellectual ventures have focused on unemployment—a poor predictor of growth and economic performance—and have been tailored to suit the structure of advanced economies. While there has been a rich and vibrant economic literature on unemployment in developing countries, especially since the 1970s and 1980s, the models derived from it have not resulted in actionable policy recommendations that yield satisfactory results. Often designed for high-income countries where the labor market is relatively homogeneous, they have tended to focus on generic business environment issues and labor market institutions while strategies and policies to raise the demand for workers in competitive industries were neglected on the rationale that they would imply activist and inefficient industrial policies. Yet almost all economies that have succeeded in moving from low to high-income countries—especially the East Asian countries—have also proactively addressed the issue of employment creation by competitive private firms.

Following Firestein's (2012) knowledge generation strategy of not simply looking to improve on what appears to be already understood but focusing instead on what is missing, this paper has attempted to shift the focus from theories unemployment to practical policies that would allow the generation of employment in low-income countries. It has argued that the economic success of large emerging countries such opens up unprecedented new opportunities for lower-income countries to exert labor arbitrage and reap the new dividends of globalization. With ample labor available in labor-intensive and low-skilled industries throughout the tradable sector globally and rising wages in China or Brazil, it is unavoidable that private firms will have strong incentives to relocate some segments of their supply chains to places where strategic government policies can provide the most competitive factor and transaction costs. These structural trends in the global economy are stimulated by technological developments that allow for and lower transportation costs while ensuring just-in-time deliveries and customization.

Like many regions of the world, Africa is currently undergoing deep sociopolitical transformation, which reflects and stimulates the need and desire for profound economic change. The mostly underemployed young people who are taking the streets across the continent and often toppling well-entrenched authoritarian regimes in just a matter of days have many requests on their agenda, among which is the need for good, decent jobs that could help them escape poverty and live with dignity. The issue of youth employment is indeed crucial to inclusive development and sociopolitical stability in the region, which has the world's youngest population together with the highest underemployment rate. It is also of crucial importance for global stability, peace and security. Besides its enormous economic benefits and positive externalities, it is also today's most valuable political currency.

Despite their current many economic and political challenges, developing countries can seize that opportunity—and win the jackpot—by identifying small numbers of well-targeted industries in which they have comparative advantage and building industrial parks in which they can deliver low factor and transaction costs through high-quality infrastructure, excellent governance, and backwards and forward linkages that spark employment creation in the formal sector. Winning the battle for employment in Africa would bring infinite rewards to the continent and to the world.

REFERENCES

- Azam, J.-P., 1994. "Recent Developments in the Developed-Country Literature on Labor Markets and the Implications for Developing Countries," in: S. Horton, R. Kanbur, and D. Mazumdar (eds.), *Labor Markets in an Era of Adjustment*, vol. 1, *Issues Papers*, Washington, D.C., The World Bank, pp. 61-103.
- Betcherman, G., A. Dar, A. Luinstra, and M. Ogawa, 2001. "Active Labor Market Policies: Issues for East Asia," in: G. Betcherman and R. Islam (eds.), *East Asian Labor Markets and the Economic Crisis*, Washington D.C., World Bank, pp. 295-344.
- Betcherman, G., K. Olivas, and A. Dar, 2004. *Impacts of Active Labor Market Programs: New Evidence from Evaluations with Particular Attention to Developing and Transition Countries*, Social Protection Discussion Paper Series no. 0402, Washington, D.C., World Bank, January.
- Blanchard, O. and J. Wolfers, 2000. "The Role of Shocks and Institutions in the Rise of European Unemployment," *Economic Journal*, vol. 110, March, pp. 1-33.
- Blanchard, O. J., and P. Diamond, 1990. "The Aggregate Matching Function," in: P. Diamond (ed.), *Growth-Productivity-Unemployment*, Cambridge, Ma., MIT Press, pp. 159-201.
- Calderon, C. and L. Servén, 2010. *Infrastructure in Latin America*, Policy Research Working Paper no. 5313, Washington D.C., World Bank.
- Calvo, G. A., 1978. "Urban Unemployment and Wage Determination in LDCs: Trade Unions in the harris-Todaro Model," *International Economic Review*, 19, pp. 65-81.
- Ceglowski, J. and S. Golub, 2011. *Does China Still Have a Labor Cost Advantage?*, CESIFO Working Paper no. 3579, September.
- Chandra, V., J. Y. Lin, and Y. Wang, 2012. *Leading Dragons Phenomenon: New Opportunities for Catch-Up in Low-Income Countries*, Policy Research Working Paper no. 6000, Washington D.C., World Bank.
- Cissé, D. A., 1988. *Histoire économique de l'Afrique noire*, 3 volumes, Paris, L'Harmattan.
- Deininger, K., Jonathan Lindsay, Andrew Norton, Harris Selod, and Mercedes Stickler, 2011. "Rising Global Interest in Farmland: Can It Yield Sustainable and Equitable Benefits?," in: *Agriculture and Rural Development*, Washington, World Bank.
- Devarajan, S., and J. de Melo, 1991. "Membership in the CFA Zone: Odyssean Journey or Trojan Horse?," in A. Chibber and S. Fischer (eds.), *Economic Reform in Sub-Saharan Africa*, Washington D.C., World Bank, pp. 25-33.
- Dinh, H., et al., 2011. *Light Manufacturing in Africa*, vol. 2, Washington D.C., World Bank.

Dornbusch, R., S. Fischer, and P. A. Samuelson, 1977. "Comparative Advantage, Trade and Payments in a Ricardian Model with a Continuum of Goods," *American Economic Review*, vol. 65, no. 5, December, pp. 823-839.

Economist, 2012. *Petrodollar Profusion*, April 28.

Economist, 2011. "Moving Back to America," May 14-20, pp. 79-80.

Edwards, L. and S. S. Golub, 2004. "South Africa's International Cost Competitiveness and Exports in Manufacturing," *World Development*, vol. 32, no. 8, pp. 1323-1339.

Ela, J.-M., 1990. *Quand l'Etat pénètre en brousse : les ripostes paysannes à la crise*, Paris, Karthala.

Ela, J.-M., 1980. *Le cri de l'homme africain*, Paris, L'Harmattan.

Firestein, S., 2012. *Ignorance: How it Drives Science*. New York, Oxford University Press.

Fox, L. and M. S. Gaal, 2008. *Working out of Poverty: Job Creation and the Quality of Growth in Africa*. The World Bank, Washington, DC.

Fox, L. and T. P. Sohnesen, 2012. Household Enterprise in Sub-Saharan Africa: Why they matter for growth, jobs, and livelihoods, The World Bank, Washington, DC., mimeo.

Harris, J. R., and M. Todaro, 1970. "Migration, Unemployment, and Development: A Two-sector Analysis," *American Economic Review*, 40, pp. 126-142.

Hausmann, R., and C. Hidalgo, 2012. "Economic Complexity and the Future of Manufacturing", in: World Economic Forum, *The Future of Manufacturing: Opportunities to Drive Economic Growth*, Cologny/Geneva, April, p. 13.

Hausmann, R., C. Hidalgo, et al. 2011. *Atlas of Economic Complexity: Mapping Paths to Prosperity*, Cambridge, MA., Harvard Center for International development.

Hausmann, R., D. Rodrik, and A. Velasco, 2008. "Growth Diagnostics," in: N. Serra and J.E. Stiglitz (eds.), *The Washington Consensus Reconsidered: Towards a New Global Governance*, New York, Oxford University Press, pp. 324-354.

Iliffe, J., 1983. *The Emergence of African Capitalism*, New York, Palgrave.

Karnassou, M., H. Sala, and D. J. Snower, 2002. *Unemployment in the European Union: A Dynamic Reappraisal*, Discussion Paper no. 531, IZA, Bonn, Germany, www.iza.org

Kennedy, P., 1988. *African Capitalism: The Struggle for Ascendancy*, Cambridge, Cambridge University Press.

Krueger, A. B., 2011. *Presentation at World Bank Seminar for Executive Directors*, Washington D.C.

Layard, R., S. Nickell, and R. Jackman, 1991. *Unemployment: Macroeconomic Performance and the Labour Market*, Oxford, Oxford University Press.

Lin, J. Y., 2012 a. *New Structural Economics: A Framework for Rethinking Development and Policy*, Washington D.C., World Bank.

Lin, J. Y., 2012b. *The Quest for Prosperity: How Developing Economies Can Take Off*, Princeton, N.J., Princeton University Press.

Lin, J. Y., 2011. *From Flying Geese to Leading Dragons: New Opportunities and Strategies for Structural Transformation in Developing Countries*, Policy Research Working Paper no. 5702, Washington D.C., World Bank, June.

Lin, J. Y. and C. Monga, 2011. "Growth Identification and Facilitation: The Role of the State in the Dynamics of Structural Change" *Development Policy Review*, 2011, vol. 29, no. 3, pp. 259-310.

Lindauer, D. L., and A. D. Velenchik, 1994. "Can African Labor Compete?," in: D. L. Lindauer and M. Roemer (eds.), *Asia and Africa: Legacies and Opportunities in Development*, San Francisco, Institute for Contemporary Studies, pp. 269-304.

Lindbeck, A., and D. J. Snower, 1985. "Explanations to Unemployment," *Oxford Review of Economic Policy*, vol. 1, no. 2, pp. 34-69.

Monga, C., 2012a. "Shifting Gears: Igniting structural Transformation in Africa," *Journal of African Economies*, vol. 21 (Supplement 2), pp. ii19-ii54.

Monga, C., 2012b. "The Hegelian Dialectics of Global Imbalances," *Journal of Philosophical Economics*, vol. 6, no. 1, pp. 1-52.

Monga, C., 2011. "Post-Macroeconomics: Lessons from the Crisis and Strategic Directions Ahead," *Journal of International Commerce, Economics and Policy*, Vol. 2, No. 2, pp. 1-28.

Monga, C., 1997. "A Currency Reform Index for Western and Central Africa," *The World Economy*, vol. 20, no. 1, January, pp. 103-125.

Page, J., 2012. "Can Africa Industrialise?," *Journal of African Economies*, vol. 21 (Supplement 2), pp. ii86-ii124.

Perkins, D. H. and M. Roemer, 1994. "Differing Endowments and Historical Legacies," in: D. L. Lindauer and M. Roemer (eds.), *Asia and Africa: Legacies and Opportunities in Development*, Cambridge and San Francisco, HIID and Institute for Contemporary Studies, pp. 25-58.

Roemer, M., 1994. "Industrial Strategies: Outward Bound," in: D. L. Lindauer and M. Roemer (eds.), *Asia and Africa: Legacies and Opportunities in Development*, Cambridge and San Francisco, HIID and Institute for Contemporary Studies, pp. 233-268.

Spence, M., 2011. "The Impact of Globalization on Income and Employment: The downside of Integrating Markets," *Foreign Affairs*, July-August, pp. 28-41.

Stiglitz, J. E., 1974. "Alternative Theories of Wage Determination and Unemployment in LDCs: The Labor-Turnover Model," *Quarterly Journal of Economics*, 88, pp. 194-227.

Taylor, L., 1983. *Structuralist Macroeconomics: Applicable Models for the Third World*, New York, Basic Books.

Taylor, S. D., 2012. *Globalization and the Cultures of Business in Africa: From Patrimonialism to Profit*, Bloomington, IN, Indiana University Press.

UNIDO, 2009. *Industrial Development Report 2009—Breaking In and Moving Up: New Industrial Challenges for the Bottom Billion and the Middle-Income Countries*, New York.

World Bank, 2012. *World Development Report 2013: Jobs*, Washington, D.C.

World Bank, 2008. *World Development Report 2009: Reshaping Economic Geography*, Washington, D.C.

World Economic Forum, 2012. *The Future of Manufacturing: Opportunities to Drive Economic Growth*, Cologny/Geneva.