Productivity in development policy literature: A critical survey

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List of Acronyms

GMR	Global Monitoring Report
GVCs	Global Value Chains
HDR	Human Development Report
IFs	International Futures
IMF	International Monetary Fund
MFP	Multifactor Productivity
MPK	Marginal productivity of capital
MPL	Marginal productivity of labour
MRW	Mankiw-Romer-Weil model
TFP	Total Factor Productivity
UN	United Nations
UNDP	United Nations Development Programme
WB	The World Bank
WDR	World Development Report

Abstract

This dissertation critically examines the mainstream contention that productivity growth, supposedly achieved by increasing 'productive' employment, is the best route to improved living standards for the poor in developing countries. Tracing the intellectual history of the neoclassical conceptualization of productivity, I first situate the debate concerning the merits of productivity growth as a means to poverty reduction within the contentious theoretical debates - the so-called Cambridge Capital Controversies – of the 1950s-70s. In a subsequent section, I critically investigate the instrumentalizaton of the conventional conceptualization and measurement of productivity within the so-called Inclusive Growth paradigm that dominates contemporary international development policy. Reflecting on the implications of this body of work in terms policy recommendations and the distribution of gains resulting from the production process, my argument is: The obsession with boosting 'productive employment' among the poor in the global south completely ignores the elephant in the room – namely, unequal power relations between wage labourers and the owners of capital, which virtually ensures that any gains accomplished in the production process are captured by the latter.

Keywords

Chapter 1 Introduction

Productivity isn't everything, but in the long run it is almost everything. A country's ability to improve its standard of living over time depends almost entirely on its ability to raise output per worker.

-Paul Krugman (2006)

The proximate cause of poverty is low productivity. Poor people are poor because their labor produces too little to adequately feed and house them, let alone provide adequately for their needs such as health care and education.

- Dani Rodrik (2012)

How did it come to be, that boosting output per worker is now, as evinced in the above quote by Nobel Laureate Krugman and prominent economist Rodrik, so widely regarded as the *sine qua non* of increasing living standards? On what theoretical foundations does this belief rest, and where might one find an empirical basis to support it? While the answers to these questions are fairly straightforward, their implications are, as is the subject of this essay, both important and highly controversial.

Though we often speak of productivity in our daily lives without much reflection on its meaning, it is in certain of its uses a very opaque and thorny construct. This is perhaps nowhere more true than in the context of economics, where productivity typically refers to output per unit of input. If I harvest two baskets of apples this morning in the time it normally takes me to harvest one, I have increased the product of my labour twofold. Simple enough. Yet what happens when we try to measure productivity not at the level of the individual person or firm, but at the level of an entire sector or national economy? Here we run into serious problems. Let us conduct a thought experiment in order to demonstrate why. Suppose we wish to measure the labour productivity of the population of an entire country. To accomplish this we would need, at a minimum, to take account of 1) the hours worked by this population; 2) the output produced by this population. Divide the latter by the former and we are left with the labour productivity figure for our hypothetical population.

Yet, complex economies are characterized not by the exclusive production of apples, but of a diverse range of goods, to say nothing of services. It follows that in order to come up with a quantity of output for our whole economy, we must first face the problem of how to *aggregate* the outputs of airplanes and toothbrushes and computers and pedicures (and so on). This, it quickly becomes clear, is an exercise in futility since, in the first place, adding up this information, firm by firm, across millions of individual firms and numerous distinct sectors and industries, is a practical impossibility. And when we move on, as economists by necessity have done, to using industry- or sector-level value added data, the non-labour inputs used to produce these varied goods are not substitutable. That is, one cannot derive an accurate figure for the change in output across goods when the values of the non-labour inputs – in the form, for example, of industrial machinery or petrochemicals – are not objective or

fixed but are themselves derived from other inputs and production processes.[1] What is referred to in economics as an *aggregate production function* (APF), which holds in neoclassical theory that there is a stable and measurable relationship between physical labour input and real output across diverse goods, is fundamentally flawed. There is, simply put, no viable empirical means of connecting changes in physical output with changes in the physical productivity of workers at the level of a diversified economy.[2] However, in spite of this the assumption of the existence of an APF is virtually ubiquitous within mainstream economics despite the numerous and demonstrable flaws inherent in this concept.[3]

But how is the above related to poverty reduction and increased living standards? Increasing productivity through 'productive employment' has in recent years become a dominant recurring theme of international development programming, featuring centrally in countless World Bank, IMF, OECD and UN policy documents dealing with poverty reduction. Indeed, the foundation of the so-called Inclusive Growth literature that is at the heart of contemporary international development discourse assigns unquestionable primacy to increased labour productivity as the key to boosting incomes and thereby enabling countries to move up the global income ladder. (World Development Report 2013; 2014; Human Development Report 2013; 2014).

This dissertation is primarily concerned with the implications of this fixation on increased productivity for poverty reduction among the dominant development organizations. I attempt to contribute to the literature that engages in examining more critically the way 'productivity' is framed in development (for example: Fischer 2014). Of necessity, I begin, in Chapter 2, with a critical review of the history of neoclassical theory as it relates to productivity. Here, an attempt is made to illustrate, at the foundational level, the origins of the APF and its derivatives, and to demonstrate its flaws through summarizing the key insights of the 'Cambridge Capital Controversies' of the 1950s to 70s. In Chapter 3, I turn to the flagship policy documents of the World Bank and United Nations. I critically analyse these documents with a particular focus on the assumed link between increased productivity and higher living standards to investigate *how* productivity is conceptualized and measured and whether or not the theoretical foundations succumb to the same flaws highlighted in Chapter 2. I conclude, in Chapter 4, with an examination of the policies advised to increase productivity and the implications of these policies in the current structure of global production.

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[1] Moreover, as is discussed below, the values of both labour and non-labour inputs are also influenced by a range of politico-institutional factors that compound the aggregation difficulties.

[2] This problem of aggregation was the subject of the 'capital controversies' that took place over the past century and will be discussed in more detail in the subsequent chapter.

[3] A recent Google Scholar keyword search for uses of 'Aggregate Production Function' since 2010 returned nearly 100,000 articles with the production function feature in its title.

Chapter 2 Intellectual History

There is magnet forever pulling at our minds, unless we have found the way to counteract it; and it may be said that if we are merely honest, if we are not also carefully self-critical, we tend easily to be deflected by a first fundamental fallacy…

  - Herbert Butterfield (1931)

2.1 Introduction

At an economic keynote address in 1987, Paul Samuelson, an economist who sat on the Cambridge, Mass (neoclassical) side of the so-called Cambridge Capital Controversies[4], proposed to his colleagues 'A program for the Whig History of Economic Science'. A Whig interpretation of history, as coined and critiqued by Herbert Butterfield (1931), is to 'emphasize certain principles of progress in the past to produce a story which is the ratification if not glorification of the present' (2). From this point of view, it is assumed that present scientific knowledge represents its 'most-advanced' form and 'if an idea from the past is any good, it is embodied in the common scientific wisdom' (Boettke et al. 2013:3). For Samuelson, this approach was necessary to put the study of economic history, on a trajectory in line with the study of economic science, towards the development of 'scientific progress' and not merely literary indulgence.

Samuelson's (1987) proposition, or what he called a "prescription" for the "dying industry" of economic history, was as follows:

> I propose that history of economics more purposefully reorient itself toward studying the past from the standpoint of the present state of economic science. To use a pejorative word unpejoratively, I am suggesting Whig Economic History of Economic Analysis (52).

Samuelson (1987) separated 'historians and philosophers' from 'working scientists', who, according to him, had "contempt for [the former] who regard efforts in the past that failed as being on par with those that succeeded, success being measurable by latest-day scientific juries who want to utilize hindsight and ex post knowledge" (52-53). In sum, his declaration was that economic historians should take their cues from 'latest-day' economic scientists, as Alan Freeman (2014) put it, it 'is a declaration that the study of past controversies has no place in 'scientific economics' (666). The danger with this way of thinking, which omits context and politics from the embedding and hegemony of ideas, is that theories, concepts, or measures that are fundamentally flawed have the potential to remain dominant and uncontroversial in conventional thinking and policymaking. It is for these reasons I feel it imperative not to assume that dominant ideas and beliefs, in this case the aggregate production function, are derived "by those perceived to have been the intellectual *victors* of key debates" (Boettke 2005). Through an inquiry into the intellectual origins of the conventional notion of 'productivity', to include the original 'capital con-

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[4] As coined and documented by Geoff Harcourt (1969).

troversies' surrounding its theory and measurement, I challenge the Whig interpretation of economic history.

The chapter begins with a critical deconstruction of the neoclassical theory of marginal productivity, which serves as the foundation for the aggregate production functions that are still widely used today to measure productivity. Subsequently, I draw from the extensive work of Jesus Felipe and John McCombie to highlight both the key insights from the so-called 'Cambridge Capital controversies' of the twentieth century related to the *aggregation problems* with the APF, as well as the subsequent critiques waged on the empirical work using production functions pertaining to the insurmountable problem of the *underlying accounting identity*.

2.2 The Neoclassical Theory of Marginal Productivity

To every candidate for the Ph.D. degree, there has loomed the nightmare of that dreaded hour when in his [or her] oral examination, he [or she] must face both sets of teachers and know that the answers which would be judged right by one school would be judged wrong by the other. Such a state of affairs is at once both ridiculous and scandalous, and as long as it continues, there is little hope for scientific progress or even sound mental health among economists. (Douglas 1948:5)

Paul Douglas (1948) wrote the above quotation when discussing the frustrating dissonance in economic departments between the 'doctrines' taught in classes that dealt with labour economics as opposed to the classes that taught economic theory (ibid). For Douglas, the former drew from the work of Sydney and Beatrice Webb (1902), where the role for unions, collective bargaining, and government policy was asserted as imperative for the protection of workers and improving living standards for all citizens. The latter strain of thought dealing with theory, Douglas argued, embodied the principles of "pure marginal productivity" (which will be discussed below). In hopes of contributing to finding an empirical validation for the latter, Cobb and Douglas set out to "develop a formula which would measure the relative effect of labour and capital upon product" (Douglas 1948: 6). The authors set out to empirically 'test' the neoclassical marginal productivity theory of distribution with an aggregate production function. With the help of what the authors described at the time as "progressive refinement" in "the measurement of the volume of physical production in manufacturing" Cobb and Douglas (1928) would further claim that it was possible "(1) to measure the changes in the amount of labor and capital which have been used to turn out [a] volume of goods, and (2) to determine what relationships existed between the three factors of labour, capital, and product" (139). Their original for formula, the production function is shown below (1):

$$P' = bL^k C^{1-k} \qquad\qquad (1)$$

Where P', L, C were the theoretical product, labour, and capital, while "b is independent of L and C and […] k is supposed to be constant"(156). The theoretical product (output) was said to be a "norm for P," the actual product, which was expressed in net value, constant-price terms. L was the aggregates of the average number of wage earners employed, and C was the financial value

of machines, tools, and equipment and factory buildings used in the production process. After having computed these indices for the inputs, it was only necessary to "find such numerical values of b and k that P' will "best" approximate P in the sense of the Theory of Least Squares" (Cobb and Douglas 1928:). Their results claimed that the value of k was .75, "precisely what [they] had expected because of the relative distance of the product curve from those of the two factors" (Douglas 1948: 6). In addition to having the value of .25 for the other exponent (1-k), the authors claimed they were able to estimate the theoretical product based on their theoretical assumptions and their formula. As Douglas (1948) reflects on the results:

> Still another striking bit of evidence was found in the fact that under perfect competition with a production formula of this type we would expect a factor to receive as its share of the product, the proportion indicated by its exponent. (7)

Behind the widely used and "well-behaved" Cobb-Douglas production function lies the neoclassical theory of marginal productivity. Its origins, according to Douglas (1948), can be traced back before the widely read article by Clark (1888) to Von Thünen in the 1840s, where he claimed that "rates of wages and interest were equal to the amount of the product added by the last increments of each" (cited in Douglas 1948:2). The theory of marginal productivity claims that profits and wages are derived from their marginal products and the contribution of each factor in production is determined by the *productivity* of the factor and *choice* of the owner (in regards to its supply or also referred to as relative scarcity). Thus, according to this theory it is the level of marginal productivity of capital and the level of the marginal productivity of labour that will determine the profits that accrue to capital and the wages that accrue to labour. To put it simply, each factor supposedly gets in return what it contributes to the production process.

This is in stark contrast to other perspectives in the Marxist and post-Keynesian veins, which recognize, to some degree, the role of power in structures of production and of a bargaining process in the determination of wages, as well as feminist perspectives drawing from either Keynesian and Marxist perspectives but take a specific account of the unequal relations in the production process related to gender, race, and class. Instead, the theory of 'pure marginal productivity' believes that

> neither trade union nor governmental action was needed to give to labor its own marginal product under conditions of full employment. All that was required was for employers to bid competitively against each other for labor and this condition was commonly assumed to exist. But if government and unions disturbed the system of *laissez-faire* by raising wage rates above the social margin, this could only be effected by decreasing the numbers employed and hence creating unemployment. (Douglas 1948: 4)

In other words, unemployment in this view is merely a result of price interference preventing equilibrium, and thus a reflection that real wages are too high. It is also assumed that capital and labour inputs are substitutable for one another, so if wage levels are too high a firm could substitute labour inputs for capital inputs, cutting back on hiring of labour until lower wages are accepted. Full employment, under this theory, is not a product of policy but, on the contrary, only possible when all such interference is avoided and labour markets are left alone to respond to the 'laws' of supply and demand. Likewise, if wages

are too low for workers, this is most likely a reflection of low labour productivity and not a disparity in power between capital and labor.

The assumptions that govern the theory of marginal productivity should then be displayed in the aggregate production taking a Cobb-Douglas functional form. Namely, under perfect competition the production function should display: 1) constant returns to scale 2) the marginal products of capital and labour 3) positive and diminishing returns to individual inputs 4) complementarity between all inputs 5) the output elasticities and income shares of factors. The depiction of the aggregate production function common today, in its simplest form, would be

$$Q = f\,(K,\,L) \qquad or \qquad Q = Af\,(K,L) \tag{2}$$

where A is said to represent the level of technology in a firm, industry or economy. In theory, Q, K, and L (output, capital, and labour) are conceived of in physical terms. For capital this could be in goods such as machines, tools, and buildings used in the production process, whereas for labour this is often conceived of in the size of the labour force or hours worked. The aggregate production function, that is the sum of micro-production functions, should then calculate the maximum amount of output attainable from a given quantity of inputs for firms, industries, or an economy. The marginal products of capital (K) and labour (L) – otherwise known as the derivatives of output (Q) with respect to factor K or factor L – are said, as articulated by Cobb and Douglas – to be calculated by the production function. Mathematically, the marginal product (MP) of labour (L) and capital (K) can be written as:

$$MPL = \frac{\partial Q}{\partial L} \qquad and \qquad MPK = \frac{\partial Q}{\partial K} \tag{3,4}$$

As such, the aggregate production function is still argued by its users to be a *physical* concept, representative of a *behavioural* equation, that signifies the relationship between inputs used and output generated by firms, industries, or the economy as whole (Felipe and McCombie 2013: 23). The aggregate production function, according to this theory, is also said to be representative of the underlying technology of firms, industries, or economy (see for example Solow 1956).

2.3 The 'Capital Controversies' and problems with the Aggregate Production Function

The validity of the aggregate production function and its supposed affirmation of the neoclassical theory of marginal productivity was severely questioned, debated, and opposed during the so-called Cambridge Capital Controversies of the 1950s lasting through to the 70s. To address the core flaws of the APF as it relates to my research, I will draw from some of the core literature that has documented these debates. Such literature includes the long list of work of

Geoff Harcourt and Avi Cohen (see for example Harcourt 1969; 1972; 1976 and Harcourt and Cohen 2003). I will, however, draw primarily from the exhaustive work of Jesus Felipe and John McCombie (2013) who also draw from the authors summaries of the debates in addition to incorporating other important critiques made around the same time related to the theoretical flaws of the actual empirical work that employs aggregate productions. Building on such early critiques made by Marshak and Andrews (1944), Nastaf (1948), Robinson (1956), Phelps Brown (1957) and Fisher (1971), Felipe and McCombie (2013) have separated the fundamental flaws inherent in aggregate production functions into two general categories: the first, considered an *aggregation problem,* "broadly defined to include the Cambridge capital theory controversies" (311) and the second, considered an *underlying accounting identity problem,* which deals with the empirical impacts of using value-added data to estimate the production function. Drawing from this work I will explore the two categories of problems below.

The Aggregation Problem

The aggregation problem can be thought of as encompassing two fundamental flaws 1) concerning indices, the degree to which we can aggregate inputs such as capital and labour as well as output into a single index; and 2) concerning functional forms, whether or not it is plausible to sum up different firms' micro-production functions to generate an accurate aggregate illustration of how a commodity is produced (Felipe and McCombie 2013). Neoclassical theory informs us that the production function is a *physical* concept and that output generated and inputs used should be thought of in physical and technical units. It follows that the returns to factors will be based on their *physical* marginal productivities. However, when one moves beyond a single-commodity production function, there is no way of quantifying and then aggregating capital into physical units. Thus, as the work of Cobb and Douglas illustrated in the previous section, empirical usage of the aggregate production function rely on *financial* constant-price data. As Felipe and McCombie (2013) note, "for applied purposes it is assumed that the constant-price value of output (V) and Capital (J) are excellent proxies of the physical quantities (Q) and (K). But the major problem is that they are conceptually very different" (50). Indeed, the productivity of a physical piece of capital would be represented in technical units, say horse-power or kilowatts, as opposed to its cost. Thus, the use of financial data in an aggregate production function does not allow one to measure *physical* productivities.

With the use of financial data, the choice of indices of an input such as capital will, as raised by Robinson (1953), be impacted by *time,* which as a result relies on an established rate of interest[5]. For example, does one value capital "according to its future earning power or its past costs?" (ibid: 81). The answer

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[5] This creates a problem denoted as 'wicksell effects' as summarized by Harcourt and Cohen (2003): "this additional circularity, or interpendence, causes Wicksell effects. Wicksell effects involve changes in the value of the capital stock associated with different interest rates, arising from either inventory revaluations of the same physical stock due to new capital goods prices (price Wicksell effects) or differences in the physical stock of capital goods (real Wicksell effects)" (202).

to this will of course have important bearing on the value of capital, but also on what the production function supposedly calculates, which is the marginal product of K and L. For example, as Robinson (1953) further explains regarding the valuation of capital based on its future earnings, "we have to begin by taking the rate of interest as given, whereas the main purpose of the production function is to show wages and the rate of interest (regarded as the wages of capital) are determined by technical conditions and the factor ratio" (81). Thus, the estimation of the aggregate production function, with the reliance on financial data, is merely a reflection of the prices and wages set before production even began, so how could we take the factor shares as reflective of the amount of output produced per unit of input after production? Similarly, if valuing capital in terms of (money) costs of production there is another problem that "the cost of capital includes the cost of capital goods, and since they must be constructed before they can be used, part of the cost of capital is interest over the period of time the moment when work was done in constructing capital goods and the time when they are producing a stream of output" (ibid 82).

From this valuation of capital, it becomes impossible to measure capital independent from the total value of commodities produced. Namely, one encounters a tautology – output and income (both using value-added, constant price data) become one of the same thing, or in the words of the Phelps Brown (1957), 'only two-sides of the same penny' (557). Relatedly, and as thoroughly discussed in Felipe and McCombie (2013) this aggregation problem which entails the use of financial constant or current price data completely changes what the APF is said to be, that is an actual 'production function' and behavioural equation versus merely a calculation of an identity.

The Underlying Accounting Identity Problem

As the foregoing indicated, empirical estimates of the aggregate production function, irrespective of being considered a "physical" theoretical concept, rely on financial, value-added data. Despite the use of *financial* data, the users of an APF still describe it as a *behavioural* equation, representative of the underlying technical conditions of an economy. This, however, was said to be fundamentally false. Namely, as alluded to by Phelps Brown (1957) above and further elucidated here by Felipe and McCombie (2013), 'there is an underlying identity that relates output (whether value added or gross output) to the labour input and the magnitutde of the capital stock' (269). This essentially means that the APF is an accounting identity not a *behavioural* equation. As Felipe and McCombie put it:

> the use of value data also gives estimates that are merely capturing a transformation, or approximation of the identity. Since an identity gives, by definition, a perfect fit to the data, it is hardly surprising that estimates of putative production functions have such high R^2's, and, as it will be seen, also give output elasticites that often, but not always, closely approximate the factor shares' (269).

The accounting identity, as written by Felipe and McCombie (2013), is merely the familiar calculation of total value-added:

$$V = wL + rJ \qquad\qquad\qquad (5)$$

where value-added (V) is equivalent to wages (wL) and total profits, including operating surplus (rJ). What does this mean for the exponents, meant to measure the factors' output elasticities? They will merely reflect the share of the earnings already paid to capital and labour, *not* their actual productivities. Given that an accounting identity entails that its true all the time, there will not, according to this critique, be a time in which an Aggregate Production Function utilizing value-added data, as opposed to technical units, will be more than just a 'transformation of the identity' (ibid). Thus, it comes from the combined problems of aggregation and the underlying accounting identity in which Felipe and McCombie (2013) contend that the APF 'is not even wrong' because it does not exist.

2.4 Concluding Remarks

By exhuming the intellectual history of the neoclassical conceptualization of productivity and the aggregate production function, this chapter challenged the "Whig history of economic analysis". Namely, a look back to past critiques, as economists such as Harcourt, Cohen, Felipe, and McCombie have done, illustrates that the aggregate production functions so widely used today are not derived from the 'victors of key debates' or controversies. The chapter will serve as a framework for critique for the following chapter in which I assess how productivity is conceptualized in contemporary development policy literature. Namely, I will assess how closely the conceptualization of productivity made by development organizations mirrors that of neoclassical theory of marginal productivity. In addition, I will extend the critiques summarized here related to aggregation and the identity to shed light on the validity of claims raised in the literature surveyed in chapter 3.

Chapter 3 Productivity in Development Policy Literature: A Critical Survey

Most low earnings and thus poverty are not generated directly by the labour market, but largely reflect differences in workers' productive endowments (chiefly education) and overall productivity levels in the countries region.

-The World Bank (2006)

3.1 Introduction

Mainstream international development organizations, perhaps chief among them the World Bank and the United Nations Development Program (UNDP), play central roles in the formulation and promulgation of policies aimed at reducing poverty in the global South. About this there can be little doubt[6]. As evinced by the above quote, here, too, we find a strong assumed link between increases in the productivity of workers and improvements in living standards for the poor. In view of the theoretical and methodological weaknesses discussed in Chapter 2, this chapter will concern itself with how these organizations conceptualize and, subsequently, measure productivity.

In sections 3.2 and 3.3, I critically examine what are widely regarded as the two most influential annual policy documents concerned with poverty reduction in the global South: the World Bank's *World Development Reports* (WDR) and the UNDP's *Human Development Reports* (HDR)*,* respectively. A primary focus on these documents is supplemented with periodic reference to other, standalone policy documents published by these organizations. The aim of these sections is to investigate both how productivity is conceptualized in these policy documents –and what, if any, connections this conceptualization has to the theory of marginal productivity discussed in Chapter 2 – as well as to interrogate the empirical basis of any assertions made regarding the supposed correlation between productivity growth, through productive employment, and improved living standards for the poor. Chapter 3 is, in sum, intended to pave the way for a discussion in Chapter 4 of the more specific and concrete policy recommendations made by these organizations to increase productivity.

3.2 The World Bank

Reading through the World Bank's 2013 *WDR,* it would be hard not to recognize the centrality of the concept of 'productivity' as it relates to the organization's policy objectives. Indeed, the report, which is subtitled 'Jobs'*,* deploys the word 'productivity' no fewer than 391 times on 196 out of a total of 317 pages. Within its so-called 'Inclusive Growth' policy framework, widely understood to be the successor to the 'Pro-poor' paradigm that persisted until the

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[6] See for example: Deacon 2007.

mid-2000s, the World Bank contends that for growth to be inclusive the policy emphasis must be on generating "productive employment rather than on direct income redistribution" to improve the living standards of the poor and "increas[e] incomes for excluded groups" (2009: 2).

Given the focus on productive employment, the World Bank emphasizes not merely employment growth but productivity growth. Specifically, it is stated in the 2013 WDR that "productivity growth happens as jobs become more productive, as new high-productivity jobs are created, and as low-productivity jobs disappear" (2013: 98). Thus, the distinction made by the World Bank between increased employment, on the one hand, and more productive employment on the other, is that the former "generates new jobs and income for individuals" while the latter "has the potential to lift the wages of those employed and promote the returns of the self-employed" (World Bank 2009). From this, it could be deduced that 'productive employment' is not merely the use of labour as an input in the production process, but the use of labour as an input that increases the rate of output over time, contributing to increased aggregate productivity growth – and hence, it is asserted, increased incomes for the poor. The rationale for focusing on 'productive employment' – and thus, productivity growth – as a poverty reduction strategy (as opposed to, say, a package of redistribution-oriented policies) will be examined below.

In many of the recent World Bank policy documents surveyed for this essay, the rationale for increasing productive employment among the poor bears strong parallels with the theory of factor pricing outlined in Chapter 2, albeit with some passing exceptions. For example, as the 2006 *Poverty Reduction and Growth: Virtuous and Vicious Circles* report reads:

> The pricing of labor reflects productivity differentials across workers, sector and regional supply-demand imbalances, and nonmarket factors. Low earnings traps can result from deficiencies in the endowments that enhance productivity (quality) of labour assets (such as human capital or infrastructure) as well as from earnings differentials that arise from barriers to mobility in the labour market (such as discrimination or impediments to migration) and that are unrelated to skills. (145)

The assertion at the end of the quotation pertaining to mobility in the labour market may suggest to the reader that the World Bank gives some credence to the notion that workers may be excluded from productive employment based upon their gender, race or caste. That said, if one continues to the end of the very same chapter from which the previous quote was drawn, one finds that the reference to "discrimination" and "barriers to mobility" as factors influencing wage differentials is dismissed as insignificant:

> The chapter reaches two main conclusions. First, labour market segmentation is a second-order source of low earnings in the region relative to low levels of productivity. *Most low earnings and thus poverty are not generated directly by the labour market, but largely reflect differences in workers' productive endowments (chiefly education) and overall productivity levels in the countries region.* (emphasis added; ibid: 146)

Like the neoclassical theory of marginal productivity, the 2006 *Poverty Reduction and Growth* report links wage differentials to worker's productivity levels, and thus assumes that factors are typically paid their marginal products in the production process. Indeed, explicit reference to marginal productivity is made just a few sentences later:

> Differences in wages arise from differences in marginal labour productivity and workers' preferences, which in turn depend on individual characteristics either

observed (such as education and work experience) or unobserved (such as un-measured skills or industriousness) and the quality of the economic and institutional environment that determines overall productivity levels. (ibid: 146)

When, in the same report, an alternative view of labour pricing is discussed in their reports (one we may understand as being more in line with the 'way of teaching labour economics' that Douglas (1948) attributed to the ideals held by the Webbs), the authors are dismissive and breathlessly move on to suggest that any distinction between the two theories is "artificial" in reality:

> A number of researchers adhere to an alternative view of labor pricing in developing countries that is best characterised by segmented, dualistic markets where earnings differences between workers of similar skills result from discrimination (ethnicity or gender) or barriers to mobility across occupations (such as informal/formal jobs), sectors (subsistence agriculture/off-farm jobs), and locations (rural/urban areas). These barriers can be related to labor market institutions such as unionization, minimum wages, and other labor regulations, and to labor market connections and geographic mobility costs. In this second view, labor markets per se generate unequal advantage and low-earnings traps. While analytically useful, this distinction is artificial. Inequality in the pricing of skills has feedback effects to the incentives to invest in skills and innovation. (World Bank 2006: 146)

Again, the report contends that in the end inequalities in the production process always come back to inequalities in the investment of 'human capital' that increases productive endowments and the productivity of workers. It is simply assumed, in this view, that workers will reap whatever benefits may result from an increase in the productivity of their labour. It is, moreover, a testament to the authors' near complete intolerance of alternative approaches – for example those with their origins in Marxist and Keynesian theories, as well as feminist approaches, that point to inherent inequalities in the production process – that they require only a sentence or two dismiss such approaches as 'artificial'.

More recent World Bank reports echo this same theoretical stance on productivity, albeit in generally more moderate terms than those employed in *Poverty Reduction and Growth*. In one report released this year, entitled *Latin American Entrepreneurs: Many Firms but Little Innovation* (2014), the authors assert the pressing need for increasing productivity to meet not merely growth requirements but also to finance social programs, by stating:

> What makes the productivity challenge pressing is precisely the fact that social progress has been tied to growth. Thanks to current polices, social programs can be maintained in the short term. The risk is that these gains may be lost if growth remains low for too long. With global tailwinds receding, the [Latin America] region will need to rely on its own devices to spur growth. *These devices have only one name: productivity*. (Emphasis added; World Bank 2014a: xii)

The reason, cited by the authors, that increasing productivity is the only option for maintaining social programmes is that "with scant domestic savings and receding external capital inflows, income growth can be sustained only by productivity" (ibid). This quote reflects an assumption that surfaces throughout the report that increased productivity of workers will lead to increased earnings or benefits for these workers and, in turn, increased state revenues that will serve to finance service delivery, to include social services:

> With increased productivity, private incomes will rise, increasing public revenues and the state's capacity to invest in service delivery" (ibid).

This passage, written in the Foreword by the Chief Economist of the Latin America and the Caribbean Region of the World Bank, begins the report from a theoretical stance on production that has important implications. Namely, his statement implicitly assumes a flow of income from businesses to households, and in turn from households to public expenditures on service delivery via taxation. An unambiguously supply-side perspective, there is no distinction made here on the basis of class, for example what share of income accrues to wage earners as opposed to the owners of capital, let alone wage disparities within labour markets resulting from differences in gender, race or caste. There is, quite simply, no discussion of *whose* incomes will rise and whether or not the existing tax structures actually progressively tax and redistribute these revenues.

While poverty reduction by means of increased productive employment is the central feature of the 2013 WDR, in the 2014 WDR productivity is portrayed as a way to manage risks. That is, the 2014 report places a strong emphasis on the ways productivity and productive endowments can help the poor manage risks associated with social, economic, and environmental downturns. This form of 'risk management' can be accomplished with increased investment in the health and education of the poor, as well as by increasing the productivity of firms. I provide two quotes from the 2014 WDR (2013)[7] below that exemplify this type of thinking:

> Households also invest in education to manage risk better [...] Education also increases productivity and income (117).

> Increasing the productivity of work in formal, as well as informal areas, implies an increased ability of poor people to use labor as a risk management instrument (ibid).

These statements are closely informed by neoclassical marginal productivity theory. That is, increasing investment in health and education is said to improve the 'productive endowments' of workers, which in turn can increase their productivity, and assuming factors are paid their marginal products, can increase their income. There are, however, some problems here that bear serious scrutiny. First, productive employment, in this view, is depicted as a form of social protection in itself. Yet it is a form of 'protection' that is limited only to those who are able to secure and maintain this type of employment. Second, even assuming most or many workers are able to find productive employment that is secure, this does not translate *ipso facto* into adequate wages and benefits that would enable individual workers to invest in things like education and health, while also 'managing risks' that may result from economic downturns. Third, the World Bank asserts that productive employment that is secure is most often that which is associated with jobs at larger firms, which are said to be less volatile, to offer higher wages, and to be associated with the highest levels of productivity. Yet in the very same report, it is asserted that the most productive firms are the most flexible in terms of labour reallocation (313).

Recognizing, to some degree, this contradiction, the authors of the report suggest that a subtle balance between labour market flexibility and social protection must be sought:

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[7]Though it is titled WDR 2014, the report was published in 2013.

> Policies to improve labour market flexibility and provide social protection need to be pursued in parallel. Increased flexibility improves efficiency by re-allocating resources between and within firms, but can be costly for those who lose their jobs. To protect the vulnerable, including those in employment transitions, the government needs to put in place a system to provide voice and inclusive social protection. In turn, an inclusive system that covers basic health and education needs and targets the vulnerable may also promote a more dynamic enterprise sector. (World Bank 2013a: 183)

This allusion to a supposed balance between 'protection' and 'efficiency' (the latter also often referred to as 'competitiveness') comes through in many of the World Bank's recent reports[8] and is a subject to which I will return in some detail in Chapter 4 below. The discussion of efficiency has much to do with the role of competition in neoclassical theory of marginal productivity. As one will recall from Chapter 2, under 'perfect competition' factors should be paid their marginal products. Thus, in this view, it is only in the case of disruptions or 'distortions' in the market system in which this equilibrium is interrupted and marginal products are not paid. In line with this neoclassical theory of marginal productivity, the World Bank (2014b) contends:

> In an economy with distortions, however, there will be differences between the marginal revenue products of labor and capital across firms. Firms that face negative distortions (e.g., depressed output prices or inflated factor prices) will hire fewer resources than they normally would. Firms with positive distortions would hire more, regardless of whether they are more productive. Such misallocation of resources moves aggregate productivity away from its optimal level, and since it may give positive incentives to less productive firms, can reduce total hiring. (42)

Many of the theoretical conclusions rendered in the World Banks reports still remain confined to the theory of marginal productivity in which general equilibrium is assumed to exists. Namely, as evinced in the above quotation, they assume firms are *price-takers* and that buyers and sellers are constrained by the prices that competitive markets produce. In other words, 'competition both produces these prices and dictates that the agents in the market treat them as "given", as beyond their control' (Weeks 2012:10). From this, market "distortions" are those interventions that disrupt competition, thus distort output or factor prices, preventing aggregate productivity reaching its "optimal level". More importantly, it assumes that "there is an ideal market outcome which can be approached in reality" (ibid: 11) which would represent the preferences of individuals and minimum costs of production. Which begs the question, how does one begin to assess or measure this 'optimal' level of aggregate productivity given the problems presented in chapter 2? This question will be addressed again when the measurement of productivity in these reports is examined in section 3.4. For now, I turn to UNDP literature.

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[8]See for example World Bank 2012b where they state "enhancing productivity also calls for striking the right balance between [social] protection and competiveness" (xvii) and World Bank 2012a.

3.3 The United Nations Development Programme

Although it is not in command of anywhere near the amount of resources – or indeed, when it comes to the matter of economic policy, influence – as the World Bank[9], the United Nations Development Programme (UNDP) is a uniquely important actor in terms of addressing poverty reduction in the global South because of its designation as "the UN agency with prime responsibility for enabling countries to meet the MDGs" (Deacon 2007: 75). The UNDP's annual HDR is often viewed in contra-distinction to the World Bank's WDR, primarily because of the way the former supplements income measures of poverty reduction with measures of social progress by way of the Human Development Index (HDI). The report also constitutes a key instrument of policy guidance for UNDP inasmuch as it is used as the basis for advising developing country governments on matters concerning governance and social policy.

While 'productivity' and 'productive employment' do not appear in the HDRs with anywhere near the degree of frequency[10] as is the case in World Bank policy documents, the supposed causal link between productivity growth and improvements in living standards is nevertheless very much present in the HDRs of the last few years. Often, increased productive employment is said to be key to addressing demographic challenges. The quote below is representative of this:

> Addressing […] demographic challenges will require raising educational attainment levels while expanding productive employment opportunites – by reducing unemployment, promoting labour productivity and increasing labour force participation, particularly among women and older workers (2013: 7).

Similar to the World Bank the UNDP emphasizes the links between investment in health and education and increased labour productivity (see for example UNDP 2013: 25, 72, 77). A distinguishing feature of UNDP's approach – rhetorically if not in practice – is that it advocates more consistently for universalistic rather than targeted provisioning of social services, for example it is argued that: "Strong universal social provisioning not only improves individual resilience, it can also bolster the resilience of the economy as a whole" (UNDP 2014: 11). That said, still very much in line with the World Bank reports, there seems to be an assumption that the gains from increased labour productivity, even if improved through investment in the health and education of all citizens, will in reality accrue to the benefit of workers as opposed to the owners of capital.

Furthermore, the tension between the imperatives of competitiveness and protection also comes through in the 2013 HDR, albeit in a somewhat different context. An obvious example emerges where the authors of the HDR

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[9]Programmes geared towards "Poverty Reduction & MDG Achievement" make up thirty-one percent of the UNDP's $5.6 billion budget for 2014. In comparison, in 2013 the WB committed to $52.6 billion in loans, grants, equity investments, and gauraentees (World Bank 2013b).
[10] The word 'productivity' is deployed some 40 times in the 2013 HDR and the 2014 HDR combined.

try to establish a distinction between the UNDP's approach to increasing competitiveness and a narrower approach aimed at increased competitiveness at any cost:

> Today's competitive global environment pressures workers to do more in less time for a lower wage. From both a human development and a business perspective, competitiveness is best achieved by raising labour productivity. Competitiveness squeezed out through lower wages and longer working hours is not sustainable. Labour flexibility should not mean adhering to practices that compromise decent working conditions. (2013: 53)

Though it is refreshing to see reference made to the fact that workers in many developing countries have experienced downward pressure on their wages combined with longer working hours and, in some cases, inhumane working conditions, it is folly to assume that increased labour productivity cannot coexist with downward pressure on wages and deteriorating job security and benefits. Indeed, the World Bank itself, in its 2014 WDR, acknowledges that these phenomena may occur at the same time, though it assigns blame to 'market distortions' (2014: 183).

This tension between the need to protect workers through, for example, greater labor market regulation, and the need for greater competitiveness by means of, for example, increased freedom of firms to engage in labor reallocation constitutes an important and recurring theme in recent iterations of the HDR. The UNDP's position on labour market regulation comes through in the 2013 HDR's discussion of 'decent work in a competitive world' (2013:53). As they state,

> The view that more regulation is always bad for business has been discredited. One of the World Bank Group's core Doing Business indicators on employing workers, which ranked countries on the leniency of measures related to hiring and firing workers, was discontinued because it falsely implied that fewer regulations were always preferable. (53)

While this would appear to constitute a step in the right direction by the World Bank, on closer inspection it is revealed to be more wordplay than actual policy shift. Indeed, while the World Bank's most recent *Doing Business* (2014) report removed the 'leniency of hiring and firing' indicators under its Labor Market Regulation section, it merely replaced these with indicators labeled 'difficulty of hiring' and 'difficulty of redundancy'.[11]

The UNDP's stance on labour market regulation also becomes apparently distinct from the World Bank's in the 2014 HDR, when in a special contribution section on 'Valuing the dignity of work', the former director general of the ILO makes explicit reference to the global 'shrinking share of wages in GDP' and argues that as a result governments and organizations must respond by 'moving from committed minimum wage policies to a fairer distribution of productivity gains and profits' (UNDP 2014:67). Though 'fair' is left to subjective interpretation, there is a discursive distinction and shift here made in re-

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[11] It should also be noted that, *none* of the indicators for labour market regulation are part of the overall Doing Business ranking. As the report states, 'Reforms affecting the labor market regulation indicators are included here but do not affect the ranking on the ease of doing business' (World Bank 2014: 152)

gards to the explicit reference to the need for active intervention in the *distribution* of productivity gains.

Despite some of these distinctions, like the World Bank reports, there is an assumption throughout the reports that an aggregate production function actually exists and that its useful to assess development challenges and improvements. For example, the following quotation from the HDR shows that the authors assume it is possible for Total or Multifactor Productivity measurements to distinguish between productivity growth caused by accumulation of factors versus *efficiency* of factors. As they state for the context of Mauritius:

> Economic growth in the next decade (1991-1999), however, was driven less by accumulation of capital and more by the productivity growth of workers, a result of investment in human capabilities" (HDR 2013: 72).

The next section will look in more depth how productivity is measured in these development reports.

3.3 Measuring Productivity in the Development Policy Literature

Despite some relatively minor differences in the UNDP's and the World Bank's conceptualizations of productivity, both organizations utilize a version of an aggregate production function as the empirical basis for their assertions that productivity growth is the essential driver of poverty reduction in the developing world. This section provides a brief overview of their respective approaches and discusses the differences as well as the commonalities between them.

One piece of empirical evidence often cited in support of both the supposed measurability and the causality between increased labour productivity and increased wages (at the aggregate level) is the supposed constancy of labour's share of total income across and among countries' economies. A 2006 report published by the World Bank pointed to the constancy of labour's income share as a validating fact that labour is paid its marginal product.[12] Despite the fact that the appearance of constant labour and capital shares is a Kaldorian stylized fact, it is argued that this 'division of income is easily explained by a Cobb-Douglas production function'[13] However, as Chapter 2 pre-

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[12] In explaining wage diffentials, the World Bank (2006: 147) refered to a chapter from a IADB (2004) report, which read: "One point on which economists generally agree is that, in the long run, the main determinant of the wage level is labor productivity. This is clearly the case if the share of labor in GDP (that is, total wages as a proportion of total income) is constant over time; in this case, the rate of growth of the wage is equal to the rate of growth of productivity. Moreover, if labor's share does not vary with income levels across countries, this would imply that richer countries pay higher wages because they have higher levels of labor productivity" (IADB 2004: 170-180).

[13] As Mankiw explains in his *Macroeconomics* (2003) textbook: "More recent U.S. data are also consistent with the Cobb-Douglas production function […] Despite the many changes in the economy over the past four decades, this ratio has remained about 0.7. This division of income is easily explained by a Cobb-Douglas production function in which the parameter $\propto$ is about .3" (73).

sented, the accounting identity and the aggregation problems do not allow for the APF to *explain* the distribution of income or wage differentials. Quite apart from that, is it logically sound to point to a statistical trend or stylized fact to validate a theory? In spite of the flaws mentioned in chapter 2, recent World Bank reports (2012a, 2012b; 2013; 2014) rely on Total Factor Productivity (TFP) to explore and assess 'drivers of productivity growth' with no explanation or justification of the usage of a Cobb-Douglas production function aside from pointing to its 'frequency' or 'customary' usage. It is generally assumed in World Bank reports that, as was explicitly stated in the 2013 WDR, 'TFP is measured as physical productivity' (World Bank 2012: 108). Indeed, the World Bank makes no mention in any of its reports of the conceptual and methodological flaws associated with the theory of marginal productivity and is aggregate production function, nor of the controversial history of these ideas in the field of economics best exemplified by the Cambridge Capital Controversies of the 1950s thru 1970s.

The HDRs from 2011, 2013, and 2014 utilize the 'Pardee Center for International Futures Model' (2013) for prospects of human development and policy scenarios" (UNDP 2013: 201). Though this sounds, on the face of it, rather different from the approach employed by the World Bank, closer inspection reveals the International Futures (henceforth IFs) model to be based largely on the same theoretical underpinnings. As noted in the 2013 HDR, one of the two "core features of the model pertinent to human development analysis [is] a production function that sets parameters of productivity in four major categories: human resources, social capital, physical capital, and knowledge" (ibid: 202). The IF model is said to explore "the impact of a set of policy initiatives with potential to enhance human development" (ibid). Productivity features prominently in the model, as one of the Pardee Center's reports explains:

> the goal of such effort is, again, to enhance policy analysis, which requires forecasts with and without intervention and which benefits from as full an endogenization of the central dynamics of the forecasting system as possible. *Productivity growth*, responsive to so many of the consequences of economic growth and decisions concerning its character, *is such a central dynamic.* (emphasis added; Pardee Centre for International Futures 2007:3)

Although it essentially breaks 'capital' down into four constituent categories (see table 1), the IF model, as is explicitly stated in the Pardee Center's report, relies upon a Cobb-Douglas production function:

> The economic module itself is a dynamic, recursive general equilibrium model. The production side represents six sectors with Cobb-Douglas production functions and input output matrices that change with economic development. (Pardee Center for International Futures 2007: 9)

There is no mention of the practical and logical implications of having six diverse sectors (ranging from agriculture to industry to services to ICT) with identical production functions. Instead, in justifying their usage of this production function they state: We stay here with the Cobb-Douglas version because *it is so widely used."* (ibid 21; emphasis added). In describing the theoretical and empirical approach they make reference to Endogenous growth theory:

> Many analysts (among them Barro and Sali-i-Martin 1999; Ruttan 1998; Jones 2002) have related well the evolution of economic growth theory and its interplay with the more empirically- and policy-centered analysis of development econom-

ics. That continuing evolution has helped us increasingly understand both the importance and character of what analysts variously call the Solow residual, technological change, and total or multifactor productivity (TFP or MPF), the contribution to growth that increased capital stock and worker-hours cannot explain. This paper and project uses the MPF label. (5)

The author's further rationale for utilize MFP for policy analysis is that "exploring endogenous growth also offers the possibility of getting into the black box of productivity and understanding its origins" (ibid. 30). It is assumed that adding more types of 'captial' to the equation is part of this illumination. Furthermore,

> the reason for trying to build forecasts with endogenously specified productivity is to address policy relevant questions, which tend to be what-if in character. For example, what if a country spends more on education or R&D? What if it reduces the level of corruption or moves towards freer markets?" (34)

It is merely assumed that the aggregate production function can actually answer such questions. Intuitively, one might think, as Sudit and Finger (1981) state: 'Public exhortations for deliberate efforts to 'improve' the rate of growth in aggregate productivity suffer from an underlying contradiction in logic. We simply cannot hope to affect consciously something that is defined to measure our lack of knowledge' (7; cited in Felipe 2008: 13).

Productivity Drivers	(#) Variables used for measuring
Human Capital **(Resources)**	(6) Ed. Spending, yrs. of adult ed., life expectancy, stunting from under nutrition, disability related to morbidity (world avg. level), vocational ed. (no eve. change in share over time)
Social Capital	(6) Econ. Freedom, gov't effectiveness, corruption, democracy, freedom, conflict (initial year's value)
Physical Capital	(4) Traditional infrastructure, ICT infrastructure, other infrastructure spending, price of energy
Knowledge Capital	(3) R&D spending, economic integration (trade openness= Ex+Im as % of GDP), share of science and engineering in all tertiary degrees

Table 1: Multifactor Productivity Drivers[14]

Source: Pardee Center for International Futures (2007)

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[14] Those variables whose expected values are not a function of GDP per capita have their expected value in parenthesis. In the case where there is no expected value (i.e. vocational education) what is computed instead is in parenthesis.

Delving deeper into the literature surrounding the IFs model and deployment of MFP, one finds some consideration of flaws of measurement. For example, in a book written by the Pardee Center for International Futures (2009), the authors write that 'one problem with obtaining decisive evidence on the role of human capital in growth is the difficulty in measuring it' (30). The authors reflect on how human capital encompasses such things as 'on-the-job learning and the knowledge of institutions' that are not included in educational variables used. Similarly, there exists no clear consensus on what each type of 'capital' actually is, let alone how to measure it. For example they cite how some economists 'view social capital as human capital, or the knowledge of how to use institutions' (31). Yet, all three of those 'types of capital' are considered distinct and measurable in the IFs model of MFP. Not only is this incredibly confusing for the reader, one wonders how sound policy analysis and recommendations can come from measures where no clear consensus exists on what it is one is measuring. However, these referenced problems do not prevent the model from being projected as sound policy analysis nor does it prevent the UNDP from utilizing it in its reports.

In sum, like the World Bank's usage of TFP, this model takes as its fundamental assumption and point of departure the intrinsic causal link between increases in productivity and improved living standards for the poor. Furthermore, the IF model operates on the assumption that the 'supposedly measurable' inputs – labour and capital – *are in fact* measurable inputs at the aggregate level. Indeed, much as is the case with the World Bank's use of an aggregate production function, there is no mention in any of the reports or documents detailing the IF model's production function of the aggregation problems 'physical' capital or the accounting identity detailed in Chapter 2.

3.4 Concluding Remarks

This chapter consisted of a critical survey of the mainstream development policy literature, specifically that of the World Bank and the UNDP, as it relates to the relationship between productivity growth and poverty reduction. The early part of the chapter explored the ways in which the two highly influential organizations conceptualize productivity, showing that they borrow heavily from the neoclassical theory of marginal productivity. Although there are notable differences in their respective conceptualizations – perhaps above all the UNDP's concern with 'human development', which is, rhetorically at least, associated with a greater commitment to social protection and universalistic social provisioning – both approaches bear contradictory policy implications.

Similarly – and perhaps unsurprisingly given their shared commitment to core qualities of the theory of marginal productivity – in terms of their respective empirical foundations, both organizations remain wedded to variants of the Cobb-Douglas aggregate production functions as a means of explaining the supposedly strong positive correlation between productivity growth and increased standards of living for the poor in the global South. That is, both assume that the aggregate production function can be used to accurately discern productivity derived from accumulation of capital versus productivity from technical progress or 'investment in human capabilities'.

Chapter 4 Policy Applications and Implications

"One of the things I think is most exciting is what you see when you give poor people access to markets…"

- World Bank Group President Jim Yong Kim (2014)

4.1 Introduction

As was unpacked in the previous chapter, mainstream development policy literature is strongly influenced by important qualities of neoclassical theory of marginal productivity. This is perhaps most evinced in the fact that both the UNDP and the World Bank, though their approaches to development differ, remain wedded to the use of an APF for policy analysis. I will next turn to examining what policy recommendations come out of these reports' conceptualization and measurement of productivity. Namely, this chapter will concern itself with an examination of the concrete policy recommendations made by the UNDP and the World Bank for increasing productivity in global South. A discussion of the range of policy recommendations offered by these organizations comprises the first section. A subsequent section offers a critique of these policy recommendations with reference to some brief case material from 'global value chain's in China. I conclude with some final reflections on the perverse implications of the persistent fixation on productivity increases given the increasing integration of large segments of the global labor force into increasingly hierarchical and power-imbricated global production networks.

4.2 Mainstream Policy Recommendations for Increased Productivity

Mainstream development organizations' policy recommendations for increasing productivity, which follow from both their initial conceptualizations of productivity and their subsequent utilization of an aggregate production function (as discussed in Chapter 3), typically amount to increasing a particular type of capital. In line with neoclassical marginal productivity and its adapted renditions such as endogenous growth theory, capital and labour are assumed to have diminishing returns. Thus, based on the remarks of Solow (1956) but adapted (Mankiw et al. 1992) to endogenize productivity growth it is displayed in the development literature that it is necessary to increase the *efficiency* of existing inputs (TFP or MFP) in order to sustain aggregate productivity. That is, policies to increase aggregate productivity often attach themselves to one of the particular types of capital that are said to influence total or multifactor productivity. The proliferation of different 'types of capital' that have been added to the APF has led to inconsistencies throughout the literature concern-

ing which policies actually influence which type of capital[15]. I will, however, try to unpack these recommendations as clearly as possible.

For the UNDP, the 'policy interventions' that are assessed for calculating projections on poverty reduction appear in Table 2. These are hardly concrete policies, but the report concludes that important insights can be gleamed on what interventions policies should be focused on. Table 3, is an example projection taken from a Pardee Centre for International Futures (2007) paper, which claims to show that 'many interventions increase growth and decrease poverty via enhancements of productivity' (34). There is, however, no further explanation proceeding that table and statement as to how this conclusion is reached. It is assumed that increasing all of the variables that measure the four types of 'capital' (outlined in the previous section) will increase productivity and thus reduce poverty. This assertion is again based on the endogenous growth theory, where an augmented Cobb-Douglas 'production function' is used to generate estimates.

Table 2: 'Policy Interventions for comparative analysis'[16]

Primarily domestic levers	Primary international levers
1. Demographics	**7. Social Capital and governance**
Fertility rates	Probability of internal conflict
Female labour force participation rates	Government revenues and corruption
	Democracy and inclusion
2. Savings and investment	**8. Trade**
Savings and investment rates	Trade barriers
	Export promotion
3. Domestic transfers	**9. Foreign investment**
Transfers to unskillsed households	Foreign direct investment
	Portfolio flows
4. Human capital	**10. Household transfers**
Education spending targets and targets on selected health risk factors	Remittances
5. Infrastructure capital	**11. Intergovernmental transfers**
Infrastructure access	Foreign aid
	Flows from international financial institutions
6. knowledge capital	**12. Technology**
Research and development	technology update

Source: The UNDP 2013:2

Despite the aforementioned, the most recent IFs projections, utilized by the HDR, came to the conclusion that 'the biggest contributions of individ-

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[15] This is because, as was mentioned in the previous section, there is no clear and consistent consensus on what each type of capital is, let alone how to measure it. Which should reveal to the reader how truly fickle conceptualizing and measuring capital in the APF truly is.

[16] The original title of this title appears in the UNDP 2013 report as 'Twelve clusters of policy intervention levers for comparative anaylsis' (201).

ual policy clusters [for poverty reduction] are those made by human capital interventions. This is true in every global region' (2013: 14). Table 3 is said to describe these 'policy clusters' and is taken from the HDR 2013 report. The only information given in the report cited by the UNDP on the human capital interventions being referred to include: 1) "High education spending and targets"; and 2) "High health spending and targets." (Pardee center for international futures 2013: 5).

Table 3: 'Poverty Intervention Analysis Using IFs'

Scenarios	Extreme Poverty (Millions)					
	Developing 2015	SS Africa 2015	S Asia 2015	Developing 2050	SS Africa 2050	S Asia 2050
Base Case	633	258	235	298	246	25
Fertility Reduction	627	252	235	221	169	25
High Fem Labor	633	258	235	298	246	24
High Investment	661	273	245	304	258	20
High Education	630	257	234	280	230	23
High Health Exp	632	258	235	289	240	23
High Govt Effect	622	256	230	274	230	21
Low Corruption	631	258	234	273	227	22
High Econ Free	630	257	233	283	236	22
High Infrastructure	632	258	235	285	236	24
High Renewable	633	258	235	295	244	24
High R&D	632	258	234	299	248	24
Low Protection	630	258	231	300	252	21
High Transfers	614	243	235	255	207	25
All Domestic Combined	610	248	231	94	74	9

Source: Pardee Center for International Futures (2007)

The World Bank, for its part, divides its policy recommendations for increasing productivity into two broad categories: Those that are oriented around social protection which includes increases in human capital, and those that are oriented around increases in competitiveness or improvements in the business environment. Essentially, the former takes a micro approach by seeking to increase individual workers' productive endowments, while the latter seeks to bring about a particular set of macroeconomic characteristics that are supposedly linked with advances in aggregate productivity.

More specifically, on the micro-side, the World Bank's *Global Monitoring Report* (2014) states:

> the ability of households to benefit from economic growth depends on the returns from their human capital and other productive assets, [findings] give primacy to investments in human capital, especially health and education programs for children and young adults. (45)

In contrast to the UNDP, which calls for universalistic social provisioning (albeit somewhat inconsistently), the World Bank calls for 'targeting public education and skills development to the bottom 40 per cent' (ibid). The World Bank's policy recommendations on human capital also illustrate their position on protection and competitiveness. For example, in their *Social Protection and Labour Strategy* (2012) report, they write:

> To ensure that people are able to access opportunities, [social protection] systems will need to be more productivity-oriented, supporting human capital,

productivity, and longer-term growth in incomes. Enhancing productivity calls for a particular focus on children, as well as on productive jobs for all workers (29)

Again, this illustrates the restrictive view of 'protection' held by the World Bank, namely there is no mention of protecting workers while employe. Instead, protection is geared towards increasing productivity of the poor through say, increasing human capital endowments. Such policy examples cited in the report that are 'productivity-oriented' are conditional cash transfers or active labour market programmes. For example, they claim 'cash transfers incentivize investments in human capital by promoting demand for education and health and help address inequalities.' By inequalities, they mean inequalities in productive endowments and assume that increased education and health education would be met for a demand for the labour of the poor. Not to mention that inequalities related to gender or race may prevent them from accessing such employment or how access to adequate health and educational services outside of purely universal (public) is skewed in favour of those with more income.

These supply-side policies suggest complementary demand-side policies would need to accompany it. By the World Bank's own admission, 'labor supply does not create its own demand' (2014: 43). Turning to supposedly demand-side policies recommended by the World Bank, Table 4 on the page below provides a detailed description of these policy areas as they are presented in the report. It is difficult, however, to see *how* these are demand-side policies. For example, under 'policies to stimulate demand for productive labor,' the World Bank (2014b) advises governments to pursue greater access to markets through the 'removal of trade barriers,' or to improve competition through increased 'market contestability' (41). Put simply, these policies would not directly create demand for labour, but instead assume that greater demand for labour would be a second order effect of either the removal of trade barriers or an increase in market contestability.

This flaw in the World Bank's deployment of the term demand side can perhaps be illustrated more clearly with reference to a policy programme that really is demand-side, say for example public work programmes. Public work programmes can be understood to be truly demand side because of the fact they *directly* create demand for labour (albeit, in most cases, only temporary demand). At any rate, leaving aside these terminological flaws, even if the removal of trade barriers and increased market contestability *did* increase demand for labour, this would by no means guarantee that the resulting jobs would offer the promise of a liveable wage, let alone sustained improvement in the standard of living of the workers. This, again, brings us back to the assumption that increased employment – even if measured as 'productive' by an APF – actually brings about increases in the wages and benefits to labour not to mention the distribution within labour based on gender and race. The description of 'reduce labor hiring costs' in Table 4 perhaps illustrates how the World Bank pays lip service to competing points of view on labour regulation and protection but does not offer any concrete policy recommendations that would in practice, for example, increase the bargaining power of workers. Namely, they do not go into detail on what labour standards 'designed well' or 'designed poorly' truly means. For example, if a policy increased the security, bargaining power, and wages of the worker while decreasing TFP, given the aforemen-

tioned it would be hard to see the World Bank in favour of such an intervention.

Further policy recommendations by the World Bank that come out of the analysis of employing an APF (through TFP measurements) align well with their conceptualization of productivity. For example, increased labour reallocation achieved through flexible labour market regulation is recommended for increasing aggregate productivity and improving living standards. Citing the example of East Asia and China, they conclude that the reallocation of labour from state owned enterprises (SOEs) to private owned enterprises 'accounted for two-thirds of TFP growth in manufacturing sectors over 1998-2006' (104). Given the theoretical assumptions built into the Cobb-Douglas function that they employ to reach this figure, it perhaps is of no surprise that the report does not question the repercussions of this reallocation for the wage-labourers themselves. As a result, questions such as the following remain unasked: what were the wage differentials between state owned versus private owned enterprises? What labour benefits were gained or lost with such a change? What are the impacts on gendered-employment levels and gendered-wage inequalities by such a shift? For example, research by Braunstein and Brenner (2007) documented that SOEs in China have lower levels of gender-based wage inequality than private or foreign owned enterprises. So, one might be cautious in applauding labour reallocation that boosts aggregate productivity could actually increases wage inequalities.

Issues concerning distribution remain absent from subsequent policy recommendations as well. Citing Indonesian firms as an example of how foreign as opposed to domestic ownership of companies are more 'productive' the report reads: 'when a plant switched from domestic to foreign ownership its TFP increased by 13.5% within 3 years' (World Bank 2012: 168). Similarly, they cite that 'in Ghana, firms whose owners worked for multinationals in the same industry were more productive than other domestic firms' (ibid). It becomes apparent throughout the Bank's policy recommendations that the reasoning for placing such policy emphasis on increased integration into global value chains and attracting foreign investment, is because of the belief that foreign companies often provide and create more 'productive' employment than domestic companies. However, it is important to remember the foundations of the World Bank's conceptualization of productivity and its deployment of total factor productivity measurements, do not reveal the distribution of income between capital and labour, and in particular, between transnational capital and domestic capital. So, another logical question to ask from these policy recommendations is, how much of the productivity gains actually *remain* in the country? Namely, the reliance on national accounts data for measuring productivity does not adequately portray the income that remains in the country of the direct producers.

Table 4: World Bank and Policy categories for Productive Labour Demand

Policy Area	Description
Increase returns to investment and improve access to finance	• Workers tend to be more productive if a firm has a higher level of physical capital per worker. Therefore, policies that improve access to finance and reduce the costs and volatility of finance that supports enterprise investment and growth can increase the return each worker generates, and therefore can lead to job creation, especially in labor-intensive sectors. • Expanding access to markets (through improved roads or ports or the removal of trade barriers) can increase the demand for products, enabling production to expand and for economies of scale to be realized. • Improved access to reliable power can allow energy-intensive firms to reduce operating costs, increase the use of machinery, or extend productive hours of operation. Better market information, for example through better information and communication technology coverage, can improve selling options for farmers, raising the relative prices they receive for a given output. Removing infrastructure bottlenecks in countries where these are restraining farm productivity and structural transformation can promote the emergence of new jobs in new industries and services. • Reforms that reduce corruption; reduce regulatory uncertainty; and streamline inspections, product standards, and regulation costs (for example by cutting red tape) can increase the profitability and competitiveness of firms in the economy, contributing to possible growth and hiring.
Stimulate Competition and Innovation	• Policies that reduce entry and exit costs, stream-line liquidation and bankruptcy procedures, limit unfair competition, improve market contestability, remove market privileges, and stimulate selection between firms within industries will make it easier to float a new product or firm, and will encourage and reward innovation. In the long run this creates more new jobs in start-ups and attracts workers to more productive jobs in more productive firms. • Trade and investment promotion policies, innovation and technology transfer, and support for clusters and business associations can increase the spread of new productivity-enhancing approaches.
Reduce Labor Hiring Costs	• Government policy also affects the cost of hiring workers. The compensation that has to be paid to a worker is influenced by taxes and labor regulations, among other things. To the extent that government policies increase labor costs in ways that the worker perceives as a benefit (e.g., health insurance, pension benefits), the impact on the overall labor market may be limited. On the other hand, regulations can raise firms' labor costs in ways that workers do not perceive as providing comparable benefits, for example taxes on labor earnings to finance insolvent or unreliable social security systems. Such policies can create a disincentive for employment that affects both firms and workers. • Labor standards, such as minimum wages, leave requirements, limitations on firms' ability to fire, and dismissal benefits can protect workers against arbitrary treatment, increase workers' earnings stability and bargaining power against firms, and improve the quality and safety of their jobs and working conditions. Designed well, these policies can actually increase employment and improve matching. But designed wrongly, they can reduce firms' demand for some types of jobs and workers. In some countries, strict de jure labor standards lead firms to de facto hire "off the books," creat- ing an underclass of informal sector workers who fail to benefit from social protection, receive low and uncertain wages, and may only find work in informal, small-scale (often inefficient) firms, with limited access to formal credit or markets.

Source: World Bank (2014b: 41-42)

4.3 Mapping the implications of the productivity fixation

The current fixation within the mainstream development policy discourse on boosting productivity is, at its core, contradictory and perverse in its implications. The explicit recognition of the global decline in wages and labour's share of income in recent UNDP (2014) and World Bank (2014) reports has on the one hand led to unexpected references to 'redistributing productivity gains' (in the case of UNDP) and 'sharing prosperity' (World Bank). Yet, on the other

hand, the reports' policy recommendations differ little – if at all – from those of previous years, and still remain wedded to a neoclassical aggregate production function whose theoretical assumptions preclude redistributive policy measures.

As a result, policy recommendations that come out of these reports either focus on increasing the supply of 'productive' labour through increased investment in education and health or increasing the demand for productive labour through, according to the World Bank, increased integration into global supply chains. Yet integration into supply chains, even if it increases aggregate productivity of firms, does not necessarily equate to wage gains for workers. Indeed, research by Stephanie Barrientos (2010) has shown that economic upgrading of firms that enter global supply chains does not necessarily lead to social upgrading of workers employed in these firms. In some instances, social downgrading actually occurs. As she puts it, 'pressures to reduce cost and increase flexibility might lead employers to combine economic upgrading with social downgrading (for example by outsourcing employment to a labour contractor' (14).

Further to Barrientos' point, absent in the countless policy documents heralding the poverty-reducing effects of productivity growth is any discussion of how the revolutionization of global production and distribution networks over the past thirty years has impacted the relative power of workers in the global South. The combination of reduced barriers to international trade with innovations in supply chain management and East Asian currency revaluations in the 1980s resulted in tectonic shifts in capital-labor relations at the global level. For the purposes of this essay, perhaps the most important effect of this restructuring was a vast increase in the structural power of multinational corporations (MNCs) vis-à-vis workers in many developing countries.

The magnitude of this phenomenon is perhaps best illustrated by way of the example of the global mega-retailer Wal-Mart, which was among the first MNCs to reorient its supply chain around newly accessible direct producers on the Chinese mainland in the mid-1980s. It is fairly well known that Wal-Mart places relentless cost-cutting pressure on its suppliers (see for example: Prospect 2011). Perhaps less well-known is that fact that it has effectively created, by virtue of its phenomenal market power and the largely deregulated global market for retail goods, a system which insulates it from direct responsibility or culpability for the fact that many of the direct producers of the goods it sells work under illegal conditions. As the labour economist Nelson Lichtenstein (2009) has written in his recent book, *The Retail Revolution,* the 'production pressure' Wal-Mart is able to bring to bear as a result of the sheer size of the orders it places 'generates a two-fold response':

> Wal-Mart's first-tier vendors, who are at least subject to a degree of supervision from the big retailer, immediately subcontract a large proportion of their orders to a series of illegal, hyperexploitative subcontractors whose operations are untouched by even the most pro forma factory inspections…Naturally these subcontractors ratchet up production by pushing the workweek to eighty, ninety and one hundred hours per week, far in excess of both Chinese law and industry standards of conduct. (162)

Lichtenstein concludes this thought by adding that this state of affairs is 'the logical outcome of a production system that divides legal ownership from operating control and overall power so as to actually generate incentives for the most exploitative and hazardous practices' (164).

One would of course not expect to see a perspective like the above made reference to in a World Bank report dealing with the relationship between productivity growth and poverty reduction. Yet it should incline us to seriously question the World Bank's assertion – which underpins its broader policy emphasis on integration into global production networks as a means to increase living standards – that 'firms that work with MNCs are more productive than other domestic firms' (2012:168). The UNDP, though it avoids dealing head on with the dramatically weakened power of labour that has resulted from the restructuring of the global production regime, at least takes a more critical stance when it comes to the supposed benefits of integration into global supply chains (2014: 111). Nevertheless, because the UNDP lacks direct influence over economic policymaking among the Southern governments with which it works – to say nothing of the fact that it is in command of a paltry sum of resources relative to the World Bank – this fact ought not to be regarded as cause for optimism.

Chapter 5 Conclusion

While they prate of economic laws, men and women are starving. We must lay hold of the fact that economic laws are not made by nature. They are made by human beings.

   -Franklin D. Roosevelt (1932)

This essay investigated the contention, advanced by the World Bank and the UNDP, that productivity growth, facilitated through productive employment, is the best route to poverty reduction in the global South. To accomplish this, I began in Chapter 2 with an attempt to illuminate the neoclassical origins of the concept of productivity within the field of economics. In so doing, I examined the essential elements of the so-called 'Cambridge Capital Controversies' that revolved around the validity of the neoclassical theory of marginal productivity and the aggregate production function.

In Chapter 3, I engaged in a critical survey of the contemporary development policy literature – specifically that of the World Bank and the UNDP – to examine how productivity is framed as a poverty reduction strategy by these organizations, as well as what evidence they use to support their policy prescriptions for poverty reduction. I found that the conceptualization of productivity in this literature, with few substantive exceptions, remains heavily influenced by the neoclassical theory of marginal productivity. Fundamentally, this theoretical and, by extension, methodological allegiance forms the bedrock on which both organizations assess that there is a strong positive correlation between productivity growth and poverty reduction. While some potentially important differences distinguish the policy rhetoric put forth by these two influential organizations – for example the role of 'labour market regulation' is advocated more as a form of competitiveness by the World Bank, whereas the UNDP assigns more importance to its role in protecting workers – in practice their differing mandates and resource endowments, perhaps as much as their ideological orientations, appear to preclude any meaningful shift away from productivity growth-centred policy approaches to addressing poverty in the developing world.

Moving on, in Chapter 4, to a discussion of the concrete policy recommendations put forth by the dominant development organizations, I found that while the reports published by the World Bank and the UNDP generally state that productivity requires a balance between 'social protection and competitiveness,' the specific policy recommendations offered – especially by the World Bank – tend to strongly favour of competitiveness. Reflecting on the perverse implications of this finding, I argued that the relentless fixation on productive employment for the poor absent meaningful protective measures for workers and the potential for real demand-side economic policies will merely work to include the poor in a regressive and exploitative growth regime in which the owners of capital are positioned to capture any and all of the gains from increased productivity. That is, contrary to marginal productivity theory, and as evinced in the example of Wal-Mart in China, in today's global economy it is folly to contend that 'poor people are poor because their labour produces too little' (Rodrik 2012). To achieve a real and meaningful understanding of

why poor people are poor we must necessarily look beyond aggregate productivity measures and into the actual structures of production within which values are derived not from marginal products, but from the structurally embedded power relations that characterize a given regime of production. These, in turn, can only be understood with reference to the politico-institutional and historical characteristics of the economic context with which we are concerned.

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