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## PRELIMINARY

### **From Manufacturing Led Export Growth to a 21<sup>st</sup> Century Inclusive Growth Strategy:**

#### **Explaining the Demise of a Successful Growth Model and What To Do About It**

**Joseph E. Stiglitz<sup>1</sup>**

Export-led growth was the model behind the 20<sup>th</sup> century growth miracles. There was unprecedented growth in East Asia—closing the gap in income per capita and standards of living with the advanced countries.<sup>2</sup> That model won't be working in the future in the way and to the extent that it did in the past. This paper explains why that is the case (Section 1) and what developing countries and the global community which supports development can do about it. It sets this new development strategy within the context of the broadening of the development agenda. With the widespread recognition of the failures of the Washington Consensus policies, there was a need for a new “consensus” concerning the objectives of development and how they might be achieved, recently articulated in the Stockholm Statement (Section 2). To formulate a new development strategy, we begin by deconstructing manufacturing export led growth, asking why it was so successful (Section 3). To replace that strategy, we argue in Section 4 that a multi-prong strategy, entailing a combination of manufacturing, agriculture, services, and natural resources, is needed. To implement that strategy, countries will require active industrial policies, based on a new understanding of dynamic comparative advantage (Section 5). Section 6 explains how the creation of a global

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<sup>1</sup> Paper presented at a conference at UNU-WIDER Think Development – Think WIDER Conference, Helsinki, Finland, September 15, 2018. Various parts of this paper are based on joint work with Martin Guzman, Bruce Greenwald, and Akbar Noman to whom I am greatly indebted. (See, in particular, Noman and Stiglitz (2012a, b, 2015a,b), Greenwald and Stiglitz (2006, 2008a,b, 2014a,b, 2015), and Stiglitz and Greenwald (2014, 2015).

<sup>2</sup> See the World Bank's Report *The East Asia Miracle* (of which I was a co-author) and Stiglitz (1996) and the references cited there for an account of the East Asia miracle.

reserve system can help provide the finance that will be especially important if developing countries are to succeed in this 21<sup>st</sup> century inclusive growth strategy.

## **1. Explaining the end of manufacturing led growth**

Manufacturing is a victim of its own success: productivity exceeds rate of increase in demand. The result is that the share of manufacturing in GDP is declining everywhere as table 1 shows, and that in turn implies that the share of manufacturing in employment is declining even more rapidly, as we illustrate later in this paper.<sup>3</sup>

What happened to agriculture in the advanced countries is now happening globally. Productivity increases in agriculture meant that a smaller and smaller fraction of the labor force was required to produce the food that people needed and wanted; the advanced countries went from a situation where some seventy percent of the population was engaged in agriculture and related services to one where, in the US, less than three percent of the work force can produce more than even an obese society can consume.<sup>4</sup>

Even with emerging markets taking larger share of manufacturing jobs, and with a shift of jobs from China to Africa, new manufacturing jobs will only absorb a fraction of new entrants into the labor force in Africa.<sup>5</sup>

Manufacturing can, of course, still have impacts that are disproportionate to its size. And some countries may have a natural comparative advantage in some niches (or in some cases, they may even be able to create a comparative advantage.) But it is unlikely that manufacturing export led growth will have the impact that it had in China and East Asia. It cannot be the sole strategy, or even at the heart of a country's strategy.

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<sup>3</sup> Some vertical disintegration of service components of manufacturing has given the appearance of more rapid disappearance of jobs and output than is in fact the case. Still, vertical disintegration can have real consequences (e.g. for wages and flows of knowledge).

<sup>4</sup> See Roser (2018) for historical employment in agriculture; Current US data available at USDA's website, <https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/ag-and-food-sectors-and-the-economy/>. The economic implications of this transformation are explored in Delli Gatti *et al* 2012a,b.

<sup>5</sup> At most, some 85 million jobs could be freed up (Lin 2011), but the working age population of Africa is expected to grow by 450 million people, or by 70%, from 2015 to 2035 (Source: Africa Competitiveness Report, World Economic Forum (2017))

This is especially so because the advantages of cheap labor will diminish as labor becomes of lesser importance in manufacturing itself, e.g. as robots replace humans. The developing countries advantage in low labor costs will, at least in many cases, be outweighed by locational disadvantages: an increasing fraction of production will be located near points of consumption. These are major changes which will affect development strategies going forward.

**Table 1**

**Manufacturing Share of GDP (%)**

	<u>2000</u>	<u>2005</u>
World	19	15
E.Asia & Pacific	25	23
ECA	19	16
LAC	17	14
North America	16	12
South Asia	15	16
Sub-Saharan Africa	11	11
Low-Income	10	8
Lower Middle Income	17	16
Upper Middle Income	24	21
High Income	18	15

Source: WDI

**2. New Thinking about development**

As we think of a new strategy to replace manufacturing export led growth, we need to incorporate the insights from earlier developmental experiences. The global failures of the Washington Consensus policies, and the advances in economic understandings have led to a rethinking of development policies. The new insights include the following:

- What separates developing countries from developed is not just a disparity in resources, but a disparity in knowledge and institutions.

- Development entails a structural transformation.<sup>6</sup> There can be growth without structural transformation—especially common in resource dependent countries—but such growth will neither be sustainable nor equitable. All countries are, of course, in need of structural transformation—in advanced countries, in response to technology and globalization from manufacturing to service sector; in China, from export led growth to domestic demand driven growth and from quantity to quality growth; in natural resource economies, to diversify away from dependence on natural resources; and in all countries in response to the need to address problems of climate change (both mitigation and adaptation) and to changing demographics. But the need for structural transformation is at the heart of development.
- Markets on their own don't manage these transformations well. There are critical impediments imposed by capital market imperfections, and important externalities and coordination failures. Government needs to assume an important role. How best to do this is one of the central themes of this paper.
- Successful development and structural transformation entails a change in norms and mindsets, including the mindsets about what change is possible—a movement away from traditional society towards modernization. In the West, these changes are especially associated with the Enlightenment.<sup>7</sup> (Of course, even in the West, these ideas are contested—Trump and his associates have a pre-enlightenment mindset.) For our purposes, the two critical ideas are (a) the mechanisms by which a society/economy learns (closing the knowledge gap to which we referred earlier); and (b) the insights about social, political, and economic organization, including the rule of law, systems of checks and balances, and the balance between the market, the state, and civil society (the subject of a 2015 Wider lecture, on the occasion of its 30<sup>th</sup> anniversary)<sup>8</sup>.

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<sup>6</sup> Stiglitz (1998).

<sup>7</sup> See Stiglitz (2016), and Stiglitz and Greenwald (2014, 2015).

<sup>8</sup> Stiglitz (2016a). Original talk given in September 2015.

These new understandings have led to a movement from a focus on developmental projects to policies and then to institutions, corresponding to the realization of the importance of not just physical capital, but human capital, social capital, and knowledge capital.

### **The Stockholm Statement**

In an attempt to capture in a brief form these and other new understandings about development, a group of 13 economists, including 4 former chief economists of the World Bank, put forward the Stockholm Statement of development principles in 2016,<sup>9</sup> with eight key notions:

1. GDP growth is not an end in itself
2. Development has to be inclusive
3. Environmental sustainability is a requirement, not an option
4. There is a need to balance market, state, and community
5. Successful development requires providing macroeconomic stability, but this does not just mean balancing budgets or focusing exclusively on inflation
6. One has to attend to the impact of global technology and inequality. It will be especially important to assess impacts on labor, in both developed and developing countries. Successful responses require investment in human capital and creating new instruments of redistributions within and between countries.
7. Social norms and mindsets matter. One especially needs to bring the insights of modern behavioral economics to bear in development policies. These may provide effective ways of altering behavior (savings, fertility, etc.), and often at very low cost.<sup>10</sup>
8. Global policies have significant effects on developing countries. The international community, and especially the advanced countries, have a responsibility to ensure that there are equitable pro-development policies. The Stockholm Statement recognized the interdependence of countries, and that the policies of the large rich

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<sup>9</sup> Stockholm Statement, Stiglitz (2016b).

<sup>10</sup> See the WDR (2015) and Hoff and Stiglitz (2016)

countries have large externalities on the rest of the world, which they often don't take into account (including their monetary, regulatory, trade, and migration policies). Tax havens, which the regulatory policies of the advanced countries tolerate, affect all countries, not just the developing countries. Still, the flow of money out of Africa has particularly adverse effects on Africa's growth.<sup>11</sup> International agreements cover only part of these arenas where there are global externalities, and where there are agreements (such as in climate), they often do not go far enough. And, of course, developed countries have not lived up to their commitments of .7% of GDP in aid.

### **Key Differences with the Washington Consensus**

The eight principles of the Stockholm Statement represent a marked change from the Washington Consensus, with its primary emphasis on markets, with its inadequate attention to market failures, with its narrow view of macro stability, and with its narrow conception of the goals and instruments of development.<sup>12</sup>

#### *Broader goals to reflect challenges of the 21<sup>st</sup> century*

The Washington Consensus focused on increasing GDP. But GDP is not a good measure of well-being, as the International Commission on the Measurement of Economic Performance and Social Progress has pointed out.<sup>13</sup> It takes, for instance, inadequate or no note of sustainability, whether environmental, social, political, or even economic. With climate change presenting an existential challenge to the planet, no responsible developmental strategy should ignore its impact on the environment. So too, GDP says nothing about how the fruits of the economy are being shared: GDP could go up even though most citizens are worse off. So another objective of a well-designed development strategy is inclusive growth.

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<sup>11</sup> *Illicit Financial Flows and the Problem of Net Resource Transfers from Africa: 1980-2009*, Joint Report by African Development Bank and Global Financial Integrity, May 2013.

<sup>12</sup> For an earlier discussion of the limitations of the Washington Consensus, see my 1998 Wider Lecture. See also Stiglitz (2002).

<sup>13</sup> Stiglitz, Sen and Fitoussi (2009)

This is especially important because we have learned that trickle-down economics, which holds that if GDP goes up, so too will the incomes of all (or most) will too, simply doesn't work. On the other hand, we have learned that greater inclusivity can lead to more robust growth, especially when it reaches the extremes that it has in some countries (such as the US and many developing countries) and when it originates in the way it does, from rent-seeking, on the one hand, or lack of opportunities for the poor, on the other.<sup>14</sup> Thus, there are policies that can simultaneously increase equality and growth.

Seeing equality and growth as complements rather than substitutes is major change in development thinking.

Employment generation is central to inclusive growth (especially where the labor force is expected to grow rapidly as in sub-Saharan Africa). Leaving large fractions of the labor force underutilized or unutilized not only leads to large inequities, it is also inefficient. And again, growth itself does not necessarily lead to the growth of employment, especially of jobs in the formal sector. In recent years (2004-2009), for instance, India has had rapid growth, but in a period in which 50 million have entered the labor force, only about 1.1 million formal sector jobs were created.<sup>15</sup>

### *More instruments*

This new development thinking is also characterized by making use of more instruments, for instance, more instruments for monetary policy. This idea is now embraced even by advanced countries, e.g. in quantitative easing (QE) and macro-prudential regulation, more instruments for macro-stability (now embraced in new Institutional View of IMF, on capital controls)<sup>16</sup>, and more instruments for developmental transformation—including industrial policies (more

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<sup>14</sup> See Stiglitz (2012, 2015) and Ostry (2014).

<sup>15</sup> According to NSSO data (National Sample Survey 66<sup>th</sup> Round). A UNDP report suggests that over a longer period of some two decades, India's employment performance, while still better than in the high growth period, was disappointing: "In India, the size of the working-age population increased by 300 million during the same time [1991-2013], while the number of employed people increased by only 140 million—the economy absorbed less than half the new entrants into the labour market." See UNDP (2016)

<sup>16</sup> *The Liberalization and Management of Capital Flows: An Institutional View*, IMF Policy Paper (2012).



appropriately labeled as learning, industrial and technology (LIT) policies), including for agriculture and services and those making use of the insights of behavioral economics.<sup>17</sup>

#### *Clearer distinctions between means and goals*

One of the central failures of the Washington consensus was the confusion between means and goals. Privatization, liberalization, deregulation, or even markets and GDP growth are not ends in themselves<sup>18</sup>, but *may* be means to higher living standards or achieving the broader goals described earlier—or could have just the opposite effects. The latter can especially arise because some policies which may increase static efficiency (like trade liberalization) may impede dynamic learning.<sup>19</sup>

Other variables—inflation, budget deficits, current account deficits—too need to be looked at through this lens. But not attending to some of these variables in a timely way may make it difficult to achieve the real goals of development.

#### *Greater participation: a balance between markets, government, and society*

One of the most important differences between the Stockholm Statement and earlier articulations of development strategy involves broadening the participants in the development process. The Washington Consensus focus on markets was too narrow; development entails not just markets, but government and civil society, and it is essential to understand the roles each needs to play, how each can play their roles more effectively, and how best to facilitate the appropriate interactions.

For instance, all successful development has entailed government playing an important role—**the development state**. It has a multiplicity of roles: providing enabling conditions for markets to work, including good physical and institutional infrastructure and an educated labor force; regulating markets—preventing negative externalities (including exploitation and excessive

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<sup>17</sup> There is a large literature on industrial and LIT policies. See references, including Greenwald and Stiglitz (2006, 2014a, 2014b) and Noman and Stiglitz (2012a, 2012b, 2015a, 2015b) for Africa. For the behavioral economics policies, see WDR (2015).

<sup>18</sup> See, for instance, Kanbur, Patel, and Stiglitz (2018).

<sup>19</sup> See Greenwald and Stiglitz (2006).

volatility); promoting development more directly—including the learning, industrial and technology policies to which we referred earlier; understanding the “big picture”—including the problems posed by excessively rapid population growth; and coordinating more broadly developmental strategies among the many different participants in a country’s development process.

One of the consequences of the Washington Consensus’ single minded focus on markets, with policies that restricted what the government could and should do, was that it undermined the institutional development of the state, impeding its ability to be as effective instrument for development as it could be. Even when it was finally recognized that there had to be a role for the state, it was a very circumscribed role. The state was described as *enabling the private sector*, with the real responsibility for development conferred on the private sector.<sup>20</sup> But for reasons I explained in my 2015 Wider Lecture, there are many arenas, even in developed countries, in which the private sector is likely to fail to meet societal needs, and this is even more so in developing countries.

As we come to understand the importance of market failures and the need for collective action, especially in the societal transformations that are central to development, government is pivotal, so development efforts have to focus on the efficiency and efficacy of government, and that includes importantly how to improve governance.<sup>21</sup> Here, systems of checks and balances to which we referred earlier are critical, and in this, media and civil society play a pivotal role.

### **3. Deconstructing success of manufacturing export led model**

In this section we ask, what made the manufacturing export led growth model so successful, as a prelude to asking, if that model is dead, is there some other way of getting the benefits that it provided?<sup>22</sup>

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<sup>20</sup> For a discussion of this point in the context of Africa, see Noman and Stiglitz (2012b) and the other papers in the volume.

<sup>22</sup> For discussions of the East Asian manufacturing export led growth model, see Stiglitz (1996), World Bank (1993), Wade (1990), Amsden (1989) and the references cited there.

Exports (more broadly, an open economy) allowed developing countries to avoid several of the complexities that were at the center of earlier developmental debates: On the supply side, the problem of material balances (ensuring that internal demand for each good was equal to internal supply)—all one had to have was enough foreign exchange. On the demand side, the problem of ensuring that there was an adequate demand for the goods that were produced. At the right exchange rate, there was unlimited demand for a country's exports, especially for small countries.<sup>23</sup> Export led growth generated the necessary foreign exchange.

Exports also provided the basis for **learning**, so necessary for the developmental transformation discussed earlier. As we also noted earlier, what separates developed and less developed countries is a gap in knowledge, and export led growth facilitated that transfer of knowledge. Those engaging in trade had to interact with others, and those seeking to compete in export markets had to learn about manufacturing technology and international standards.

Manufacturing is particularly well suited for learning, because it occurs in large and long lived institutions (say in contrast to agriculture, where, especially in developing countries, the unit of production is a small farm). There are large economies of scale in the production and absorption of knowledge, and greater incentives for large institutions to engage in learning.

Most important in the process of learning is *learning by doing*. One can best (and sometimes only) learn how to increase productivity in manufacturing by manufacturing. Most relevant for development is that there are important spillovers of the learning and development in manufacturing to other industries. These spillovers include not just the direct technological spillovers (which may occur when processes in other sectors have some overlap with those in manufacturing), but also institutional spillovers (e.g. from the development of educational and financial institutions). The production of more educated individuals, a requisite for success in manufacturing—is of benefit elsewhere in the economy. So too, financial institutions which

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<sup>23</sup> Except for China and perhaps India, even developing countries that have large populations have a relatively small GDP. Standard trade models that assume perfect competition assume that at the right exchange rate, there is an infinite demand. Demand curves are horizontal. In practice, competition is imperfect (partly because of imperfections of competition, partly because there are large transport costs).

may have originated to finance commerce or manufacturing can expand their reach into other sectors of the economy.

Of course, some transfer of technology could be accomplished in numerous other ways (buying technology or foreign direct investment), but these mechanisms are likely to have fewer deep learning benefits and spillovers.

Exports also provided basis for **tax revenues**. Finance is needed for government expenditures—for the publicly provided goods that are essential for development, including infrastructure, education, and the acquisition, adaptation and dissemination of technology. It is hard to tax the informal sector, including small farmers. That's why traditionally, tax authorities relied heavily on taxes imposed on trade: it was easier to monitor the flow of goods that go through the limited number of ports.

Finally, the manufacturing exports generated **employment** in the urban sector, which was key in supporting structural transformation and widely shared growth. It generated jobs for new entrants into the labor force and those leaving agriculture, and the (relatively) high and increasing wages in manufacturing (as a result of the ever-increasing levels of productivity as a result of learning and education) led to higher standards of living.

### **Mechanisms for promoting exports**

Not only did manufacturing exports generate this panoply of benefits, there were numerous ways by which East Asian countries could promote manufacturing exports. They provided limited direct support (e.g. through subsidies) but did provide access to credit at near commercial rates to firms that were successful in exporting. This provided incentives for entrepreneurs to increase exports. And they had other instruments of industrial policy, including restrictions or taxes on competing imports and subsidies or credits for exports. Perhaps most important though was their provision of an enabling environment, including through ensuring good infrastructure and an educated labor force.

### *Natural system of accountability*

One of the reasons, I suspect, for success of the export led model was that it proved relatively robust against corruption. There was a natural system of accountability. Support was given to firms that had proven themselves successful in the international marketplace. By contrast, with an import-competing growth strategy, a firm can prove profitable by becoming a local monopolist and getting the government to limit foreign competition.

Export-led manufacturing thus naturally combined economic and demographic structural transformation, a move from traditional agriculture to more advanced production, from rural to urban, and a movement to a learning economy. Openness simplified the task of development: it meant one could simply focus on foreign exchange constraint (ensuring that one had the foreign exchange one needed), education, infrastructure and job creation.

#### 4. **A multi-pronged strategy**

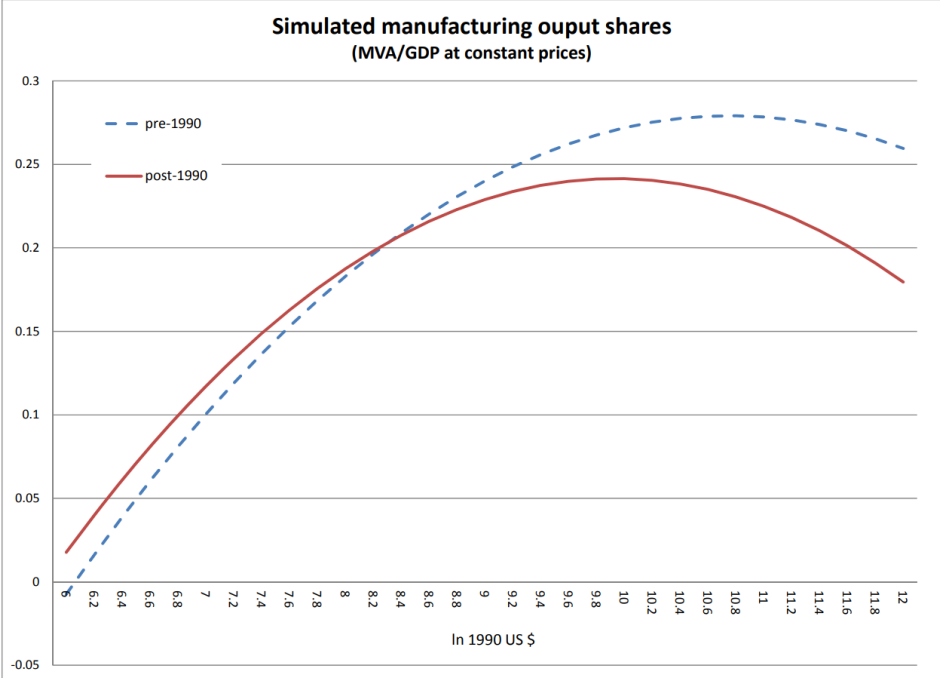
With the limited prospects for manufacturing exports, for those countries that “missed the train”—didn’t take advantage of manufacturing export led growth when it was available as a strategy for development—similar outcomes will require a multifaceted growth strategy, with different facets reflecting different aspects of what contributed to the success of manufacturing export-led growth.

The region for which this is most true is, of course, sub-Saharan Africa. For Africa, the last twenty five years of the 20th century was a lost quarter century. Per capita income in 2000 was barely at the level of the mid-1970s. Economic decline was particularly sharp during 1980-95, partially as a result of plethora of conditionalities imposed on sub-Saharan Africa (SSA) in the years after independence, with the colonial powers having failed to leave a legacy either of physical or human capital which would have enabled sub-Saharan Africa to have prospered. In the currency, debt, financial, and economic crises that followed, these countries felt they had no choice but to turn to the Bretton woods institutions for help, and in return for that help, these institutions extracted a high price.

What was striking was that while agriculture was neglected and its productivity stagnated, the fate of the industrial sector was even worse. The share of manufacturing in GDP was once so highly correlated with per capita income that the IMF used the term “industrial countries” to

refer to high income countries until some 15 or so years ago. (The relationship became an inverted U shaped one some 2 decades or so ago, and more recently the height of the inverted U has been declining, i.e. the peak level of income at which manufacturing’s share begins to shrink has been falling.)

**Figure 1**



Source: Rodrik, Dani (2015), “Premature Industrialization,” NBER Working Paper 20935

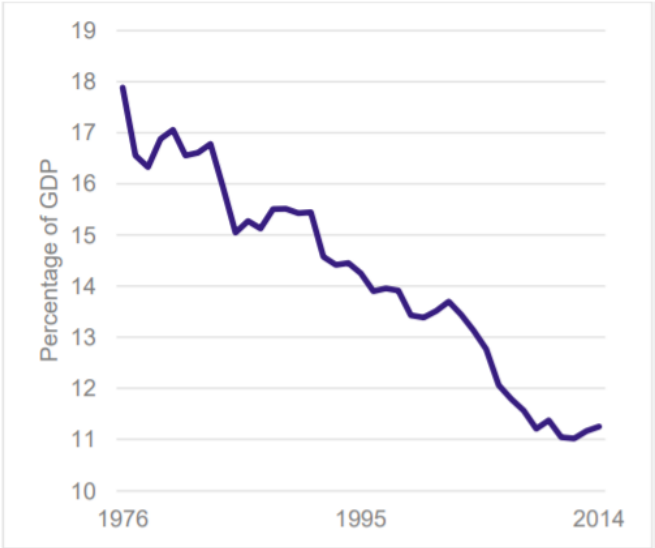
But under the IMF/Washington Consensus programs, Sub-Saharan Africa began its deindustrialization in the 1980s, much too prematurely and rapidly: manufacturing’s share peaked in 1977 at about 17% and then declined almost continuously: reaching to about 11% in 2015 (see Figure 2). The share of employment in manufacturing is, of course, much smaller than the share of value added, and that too has been declining, from 8.9 % in 1990 to 8.3% in 2010.<sup>24</sup>

<sup>24</sup> deVries, Timmer, and deVries (2015).

This history has two important implications for SSA relevant to the multi-prong strategy that we are about to describe: (a) This “under industrialization” of SSA has rightly been interpreted to mean there is more scope for catch-up industrialization notwithstanding the headwinds posed by global technological trends. There is, and especially so for the kind of high transport costs goods, and even more so for the goods that are particularly targeted at consumers and producers in the continent. Still, industrialization will, as we have already emphasized, not be able to play the role that it did for East Asia. (b) The neglect of agriculture, with its resulting lag in productivity (data) means here too there is scope for catch-up: an increase in agricultural productivity comparable to East Asia would have an enormous impact on incomes. For those countries, like Nigeria, suffering from the “resource curse” there is even more opportunity: the mismanaged exchange rate resulted in countries which have the potential of being agricultural exporters—and were so—becoming net importers. With a better management of natural resources, this distortion can be rectified.

**Figure 2**

**Manufacturing value added (% of GDP) in Sub-Saharan Africa**



Source: WDI.

**Table 2**

## Deindustrialization in Sub-Saharan Africa

Value added by sectors (% of GDP)

	1981	1990	2000	2010	2016
Agriculture	23.7	23.4	19.6	17.8	17.9
Industry	35.4	33.7	36.5	27.4	23.7
Manufacturing	15.0	13.5	11.3	10.3	10.5
Services	42.1	41.8	43.9	54.8	58.3

Source: World Bank Development Indicator

Share of Employment (%)

	<u>1960</u>	<u>1975</u>	<u>1990</u>	<u>2010</u>
Agriculture	72.7	66.0	61.6	49.8
Industry	4.6	5.3	5.4	5.1
Manufacturing	4.7	7.8	8.9	8.3
Services	18.0	20.9	24.1	36.8

Source: deVries, Timmer and deVries (2013)

### Manufacturing

*Manufacturing* will continue to play a role, but it will be more limited, and will need to be more directed, where possible, taking advantage of natural advantage (such as mineral resources). (As we have already noted, though, because of robotization and AI, developing countries' advantage in manufacturing, arising out of cheap labor, will diminish, and even if there is some success in expanding manufacturing, in most countries this expansion will not suffice to create enough jobs for those seeking employment in the modern economy.)

Moreover, going forward, the ability of manufacturing to generate tax revenues (one of its strengths) may be hampered, as competition for low skilled manufacturing among developing countries may result in a race to bottom. This race to the bottom would result in developing



countries reaping at most limited benefits. The implication is that developing countries need to be careful in giving tax breaks, and more importantly, work together, cooperatively, to reach agreements that restrict the scope for this race to the bottom.<sup>25</sup>

Instead of this race-to-the bottom tax competition, it would be far better to have a race-to-the top—competition in providing good physical and “institutional” infrastructure, that enhances the productivity of the economy and returns to capital.

This will be especially important because of restrictions imposed by international trade agreements (WTO). A striking feature of these agreements is that they allow agriculture subsidies (harming the developing countries, which depend heavily on agriculture), while prohibiting manufacturing subsidies. And even the structure of tariffs has traditionally been designed to inhibit developing countries moving up the value added chain into manufacturing.<sup>26</sup> Of course, in the earlier stages of advanced countries development, they engage in both manufacturing subsidies and protection; but now that they have succeeded, they want to “pull up the ladder.”<sup>27</sup> Thus, the instruments that are at the disposal of developing countries today are more limited—and they will have to make all of the use of these limited instruments that they can.

Industrial policies should be at the center of these efforts. Section 5 will discuss these policies in greater detail.

### **Agriculture**

*Agriculture* will continue to provide the most important basis of employment for most developing countries, but should be restructured in ways that are more *dynamic*, with more learning, learning to learn, a kind of transformation *in situ*. Given the extremely low productivity of agriculture in SSA, there is enormous scope for modernizing agriculture.

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<sup>25</sup> The Independent Commission on Reform of International Taxation (ICRIT) has emphasized the adverse effects of this race to the bottom and been urging an international agreement against tax competition. See ICRIT (2018).

<sup>26</sup> See Stiglitz and Charlton (2005).

<sup>27</sup> See Chang (2002)

Thus, The African Center for Economic Transformation, in its second major report released in October 2017 argued:

*“Agriculture presents the easiest path to industrialization and economic transformation. Increasing productivity and output in a modern agricultural sector would, beyond improving food security and the balance of payments (through reduced food imports and increased exports), sustain agro-processing, the manufacturing of agricultural inputs, and a host of services upstream and downstream from farms, creating employment and boosting incomes across the economy.”*

Agriculture can have further benefits: for the many developing countries who import large amounts of foodstuffs, it can reduce the need for foreign exchange—leaving foreign exchange to be used for areas where it cannot be replaced. In some cases, there are opportunities for increasing exports of agricultural goods; the transformation should entail identifying high value added crops for which there is a demand elsewhere. Moreover, modern agriculture can be very “advanced,” serving as a basis of learning, with some of the skills having applicability to other areas. Indeed, there are ample opportunities for non-labor saving innovations—better crop mix, better fertilizers, better seeds, better planting patterns. The transformation of farming from *traditional practices* to modern farming can be an exemplar of general societal transformation entailing modernization.

Moreover, successful agricultural transformation will reduce the pressure arising from urban migration, and the dilemmas it poses—for instance, whether to use scarce resources to build urban infrastructure, including housing. Moreover, with limitations on the ability to create urban manufacturing jobs, excessive migration can be very destabilizing, giving rise to a large coterie of unemployed. And finally, the increase in productivity in agriculture will result in higher incomes, giving rise to multiplier effects.

In short, the neglect of agriculture in development over the past four decades should always have been seen as a mistake. But the cost of this neglect will increase as developing countries struggle to find an alternative to manufacturing export led growth. Increasing productivity in

agriculture should be seen as an essential prong in the multi-prong approach that will have to replace manufacturing export led growth.

*Mechanisms for promoting agriculture.* Here, developing countries need to take a page out of the mechanisms by which agriculture was supported in the United States in the nineteenth century, when that sector was the predominant one there. With small scale production, there can't be the private investments in advances in technology that are needed. Government will have to provide the necessary research, and transmit that research to farmers through extension services. Since agriculture conditions can vary greatly from one locale to another, the relevant applied research has to be done at the local level (as it was done in the US, through the land grant colleges and universities).

One way in which the landscape has changed since World War II is the growth of intellectual property rights, with large multinational giants selling seeds (often genetically modified), herbicides and pesticides, and fertilizers, with often very adverse economic and social consequences. Developing countries need to be sure that they adopt the right intellectual property regime—not the one foisted on them by the multinationals and Western governments.<sup>28</sup>

There are also significant problems of information asymmetries in providing key inputs like seed and fertilizer to farmers. It is hard, if not impossible, to ascertain the quality at the point of purchase. In developing countries reputation mechanisms often work imperfectly, and to the extent they do, they can result in high degrees of imperfections of competition. When regulations fail, it may be desirable to, at a minimum, have the government certify the quality of the inputs, and perhaps market them directly: incentives and opportunities for scamming often seem just too irresistible for the private sector.<sup>29</sup>

Another crucial input is credit, and this is another arena in which the private sector has excelled in exploitation. Non-profit micro-credit schemes have met with enormous success in Bangladesh, but when the “model” was taken by for profit lenders, there was a massive

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<sup>28</sup> See *Intellectual Property Rights: Legal and Economic Challenges for Development*, Oxford University Press 2014.

<sup>29</sup> Reflecting a more general point noted by Akerlof and Shiller (2015).

failure.<sup>30</sup> Government should encourage these not-for-profits and cooperative lending programs, and encourage the private sector to lend (at strictly controlled rates) to agriculture, e.g. by requiring a minimal fraction of loans go to small farmers (analogous to the CRA requirements for lending to minorities in the US).

Finally, in many developing countries, there are serious problems in marketing, with middle men with market power taking a disproportionately large fraction of the value. At one time, the World Bank and IMF railed against government marketing boards, which often proved inefficient, and sometimes corrupt. The assumption was that with government out of the way, a competitive market would flourish, and farmers would get full value for their crops. What happened instead was the growth of monopolistic middle-men (part of the original reason for the growth of government marketing boards). They might have been more efficient; they were certainly more efficient in exploiting farmers: what they received in some cases went down.<sup>31</sup>

### **Mining and Other Natural Resources**

*Mining and hydrocarbons* will continue to be important for foreign exchange for those countries who are lucky enough to have these resources. The standard lessons of the resource curse have not yet been learned by most countries. Countries have to manage the exchange rate so that other sectors, which may generate more jobs or more learning, are not disadvantaged. Countries which are rich in natural resources not only grow more slowly than one would have expected; they also have more inequality, partly as a result of the rampant rent-seeking that is so often associated with natural resources. Four central insights have emerged on how developing countries who have natural resources can best manage this prong of the multi-prong development strategy.

- They need to maximize the revenues that they obtain from the natural resources. When the resources are held by the government, this means having well designed auctions and contracts. It may be necessary to auction off different parts of the production process, rather than to have a bid for an overall “manager” of the resource. Contracts

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<sup>30</sup> See Haldar and Stiglitz (2013,2016)

<sup>31</sup> Wilcox (2006), Wilcox and Abbott (2004).

need to exhibit “time consistency”; in particular, when the quantities of the resource or the cost of extraction turn out particularly favorable, the contract has to be designed so that the oil or mining company doesn’t walk off with an unwarranted bonanza. When the resources are held in private hands, then there should be as close to 100% tax on the “pure rents” associated with the resource. The resource should be thought of as belonging to all the people—it was part of the geography, which sometimes brings disadvantages, in this case, advantages. The principle that pure rents should be taxed at 100% is well-established.<sup>32</sup> When the government has sold or leased the resource at a below market rate (sometimes as a result of corruption, sometimes out of pure incompetence), the terms need to be renegotiated. A country is always sovereign over the resources that lie within it. Botswana’s remarkable development was only possible because at the time of independence, it renegotiated its diamond leases.<sup>33</sup>

- Contracts need to be complemented by excess profit taxes. Contracts will never be perfectly designed, so that the foreign oil or mining company may well get substantial excess profits. Countries need to be careful not to sign investment agreements that circumscribe ability to change taxes and regulations; and those that have signed such agreements should exit or renegotiate (as South Africa is doing).
- Countries need to establish sovereign wealth funds—both to manage cyclical variability and to prevent exchange rate appreciation. A well-managed sovereign wealth fund can also be an important instrument for ensuring that the fruits of the country’s resources (which are typically limited in amounts) are shared equitably across generations.
- The development of a country’s resources should be, to the extent possible, part of the development strategy, beyond just the provision of foreign exchange. Countries should look for good partners, willing to participate in such a broader development strategy. While the technical knowledge associated with mining may have limited relevance to other sectors, the organizational knowledge of a foreign partner can be of broader

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<sup>32</sup> See, for instance, George (1871).

<sup>33</sup> See Stiglitz (2002).

relevance. Moreover, there can be a variety of linkages to other sectors that can be enhanced: the fact that in the past such linkages appear to be weak may only reflect the lack of effort in developing them. At the very least, domestic firms can supply a variety of the required inputs, e.g. construction of housing. Private firms, of course, may have little incentive to do so. Government intervention may be required, and the contracts have to be designed to better align private incentives with societal needs. Writing a formal contract embedding all of this may be nearly impossible, which is why, where government has the required competencies, state agencies may be preferable.

### **Services**

Services will be the growth sector of the future, but there will be many ramifications of the move to service sector that developing countries need to be aware of.

Production units will be smaller. For developing countries, this is a good thing: it is easier for entrepreneurs in nascent stages of development to manage small and medium sized enterprises. But productivity growth may be more limited: traditionally, productivity growth in the service sector is lower than in manufacturing. While this may be partially a measurement problem, it is partially real, and expected: with smaller production units, each has less incentive for investment in R & D, and the benefits of learning by doing are less widely shared. But this lower rate of productivity growth is not inevitable. As in agriculture, there is more need for cooperative and government R & D. (There are a few places around the world, such as Tuscany, where cooperative ventures have proved successful.)

The move towards a service sector economy may also be associated with greater inequality, for several reasons. There will not be the kind of wage compression that typically occurs in large manufacturing enterprises (where wage differences across individuals are smaller than productivity differences). The result is that compensation is likely to be more linked to individual productivity. Moreover, there are likely to be larger productivity differences across firms (in turn, because the enterprises themselves will be less able and willing to invest in the acquisition of frontier knowledge). Finally monopoly power may increase. Competition in local services is often less than product competition among large international manufacturing firms,

and this is especially so when there is a link between local services and the large manufacturing firms—there is likely, for instance, to be a single service provider for any car or tractor in a given local. Indeed, many large manufacturers may generate much of their profits from these local services, precisely because there is limited competition there. Location matters.

Moreover, in developing countries, with high levels of unemployment, the imbalance of market power between firms and workers is likely to be even greater than in developed countries.

Again, there is an increased need for government action: to combat the increase in monopolization here, as in other areas of modern economies, to ensure that there is a greater balance of power between workers and firms (encouraging, for instance, unions among smaller enterprises and even individuals, like taxicab drivers), to redistribute income to curb excesses of inequality and address poverty, and to promote advances in technology. There is an increased need for government to push creating a learning society, to reduce productivity differences.

Many services can be more easily inserted into the global economy through internet, especially if there can be standard setting, with quality certification, either through peer monitoring or certification services, possibly provided by the government. Success will entail an increasing need for skills training, including languages.

### *The multiple forms of services*

The term services embraces a wide range of economic activities, with quite different characteristics. Some developing countries, for instance, have successfully promoted tourism. Developing a tourist industry can promote jobs and learning and generate considerable foreign exchange. Countries like Bhutan and Namibia have, moreover, managed the sector in ways that minimize impacts on the environment and the domestic culture.

Government plays an important role in many key service sectors (housing, education, and health), and understandably so. This means that as economies move to towards a service

sector economy, the role of the government should naturally increase.<sup>34</sup> Let me say a few words about housing and education.

### *Housing services*

The process of urbanization will require large investments in housing, with a large job creation potential. Government will need to take an active role, including in planning “livable cities”—important part of well-being— in providing finance and local public transportation, and in ensuring that there is affordable housing for all income groups. In many cities, there is no affordable housing for low income individuals anywhere near the city center, forcing these individuals to travel long distances—a hidden tax. The benefits of agglomeration are often captured by those who happen to own real estate in the center; a high tax on this real estate can recapture these windfall benefits for the public, and be used to ensure that cities are more economically integrated.

Private financial markets have, in many countries, done a dismal job of providing mortgages. Governments should at least consider the possibility of providing income contingent long term mortgages to those who have paid income taxes for a number of years. Such a program will have the further benefits of encouraging formality in the labor market.

### *Education*

Good systems of education can both create jobs and enhance development. In many developing countries, recruitment of new enterprises is hindered by a lack of education—not just “quantity” (average level of attainment, see Figure 3), but quality. Making education economically accessible through state support is an important step, but there has to be corresponding efforts to ensure quality. Otherwise there will be disappointment.

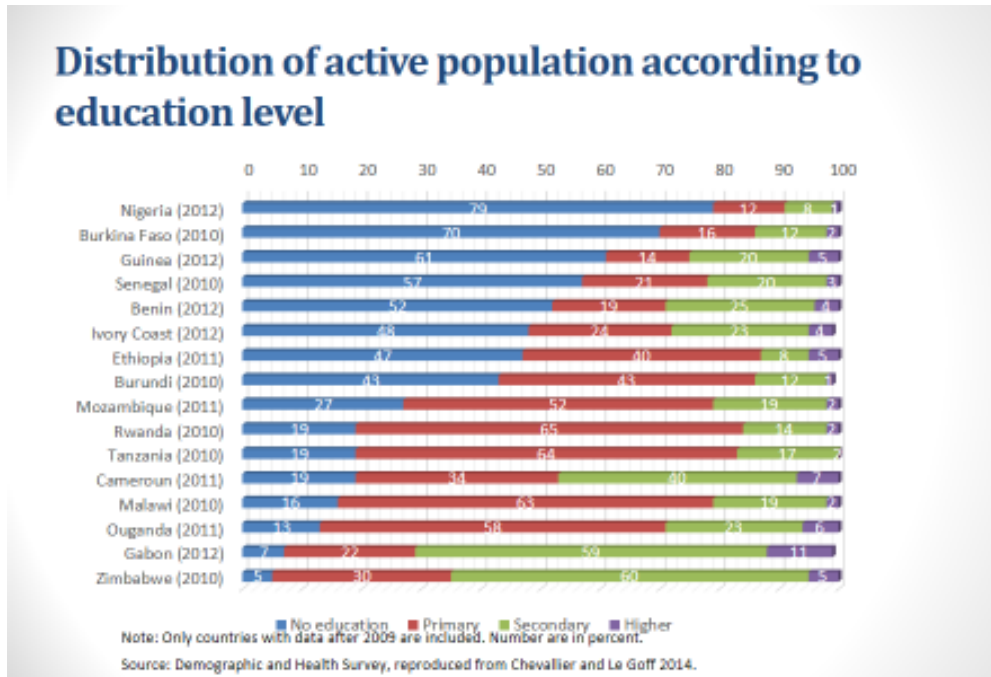
Low education levels also presents an increasing challenge to modernization, as the importance of learning grows.

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<sup>34</sup> Earlier, we described the important role for the government in providing agricultural services, in marketing of output, in the provision of inputs (credit, seeds, and fertilizers) and in extension services, improving agricultural technology.



**Figure 3**



*Other service sectors*

Many service sectors, like telecommunications and business services, can be as modern and hi-tech as manufacturing, with learning benefits similar to those in manufacturing. Unfortunately, many developing countries have allowed foreign companies to develop these sectors, without any focus on encouraging learning. Maximizing the development potential from foreign investment requires maximizing these learning spillovers.

**5. Industrial Policies and Dynamic Comparative Advantage**

We have already made clear that there is a need for government to take a large role in development and the associated structural transformation. Development and structural transformation is rife with market failures. It is costly to move from the “old economy” to the new. Imperfections of capital markets become particularly evident in the process of transformation: the value of the assets of those in the “old economy” are diminished, so firms and workers in the old economy don’t have resources to make necessary investments or the

collateral with which to obtain finance. Moreover, there are important learning externalities, which those making investments and production decisions don't take into account.

The need for government was made evident in the earlier transition in developed countries from agriculture to manufacturing, where the failure of government to assist in the movement of individuals out of agrarian rural to urban manufacturing contributed to the Great Depression. It was only through an unintended government industrial policy—moving people to the urban sector as part of the war effort—that the Great Depression was overcome and a successful transition was accomplished. But as we have already explained, the role of government in this transition to a service sector economy, through the multi-pronged approach described in the previous section, will entail an even greater role, e.g. in closing knowledge gap between the small production units in the service sector and in promoting technological advances in both the service sector and agriculture.

Among the important instruments that government will need to employ is industrial policy. Industrial policy simply entails actions that aim to alter the allocation of resources (or the choice of technology) from what the market would on its own bring about. As we noted earlier, industrial policies are not confined to industry but also to policies aimed at other sectors e.g. finance or IT and agriculture. Modern industrial policies might more accurately be called Learning, Industrial and Technology (LIT) policies. LIT policies take many different forms. Rwanda used such policies to promote IT, Kenya to promote tea and flowers, Ethiopia to promote modern agriculture and shoes. The green revolution in South Asia was facilitated by policies of price support (setting a floor on output prices, thereby affecting the risk of using the new technology) as well as input subsidies, including notably for electricity, which enhanced the profitability of tube-well irrigation. Industrial policies were central to almost all countries that “caught-up” (or nearly so) with the technological frontier and became developed.

These policies have, of course, played an important role even in advanced countries. As Mazzucato emphasizes in her book *The Entrepreneurial State*<sup>35</sup>: government has played a central role in all of the major advances, including the internet. But the role of government in

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<sup>35</sup> Mazzucato (2013).

shaping in the economy is pervasive: because there is a widespread perception that without government assistance, there would be an undersupply of credit to small enterprises, most advanced countries, including the US, have lending programs directed at this “market failure.”<sup>36</sup> Industrial policies arise naturally in response to the multiple market failures that characterize development and structural change, from the capital market imperfections to the learning spillovers that we have already made note of.

Greenwald and Stiglitz (2012) go further: they argue that all countries have implicit industrial policies, though citizens in some countries don’t realize it. Markets don’t exist in a vacuum, and the way they are structured gives advantages to some, disadvantages to others. The priority given derivatives in bankruptcy in the US encouraged derivatives; and the rule that said that student loans could not be discharged, even in bankruptcy, provided encouragement to that sector. Moreover, governments have to make decisions about what infrastructure to construct or how to design the educational system. These decisions about public expenditures help shape the economy. When citizens aren’t aware of this, it means that the rules and patterns of expenditure are more likely to be determined by special interest groups, who are typically very aware of the consequences of these government actions. When these decisions are made in an open and transparent way, with full discussion of the implications for the country’s growth strategy, the scope for this kind of rent seeking is reduced.

Thus, we are arguing here that government must ask how the structure of its rules and regulations and expenditures can be used to promote those forms of industrialization which most enhance the country’s long run development strategy, e.g. promoting learning, with broad societal spillovers, and generating foreign exchange and jobs. The same question needs to be asked as we consider each of the other prongs of the strategy that we are laying out here. (The identification of which particular forms of manufacturing are most conducive to development is a broader question beyond the scope of this paper. (See Greenwald and Stiglitz, 2015)). Here, we simply note that there is a growing body of research associating development with complexity: more advanced countries have the ability to produce a wide

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<sup>36</sup> In the US, through the Small Business Administration.

range of products, including, in particular, products entailing greater complexity.<sup>37</sup> Thus, it may make sense for a country to consciously think about how it can move up the complexity scale; and how the knowledge associated with such production can be absorbed into the economy. China's strategy of joint ventures may perhaps best be thought of in this light. It was not about stealing intellectual property, as the Trump Administration has claimed. It was not about obtaining, for instance, otherwise secret blue prints. It was about learning—especially about tacit knowledge, the kind of knowledge that isn't written down, that one can't learn from a textbook. One only learns it through the process of production itself.

Some sectors are more amenable to learning and some learning in specific sectors has more spillovers to others. The general principles of industrial policies apply in each of the multipronged strategy, that is, not just to manufacturing, but to agriculture, services, and natural resources. Governments need to identify, for instance, "learning" and "learning spillover" service sectors and agricultural activities. These can have much of the benefits of the learning provided by manufacturing. And as we noted, industrial policies need to exploit linkages with natural resources—one of the country's key comparative advantages.

### ***Reassessing Comparative Advantage***

Older theories of development were based on countries exploiting their static comparative advantage. This implied, for instance, that in the 1960's, when Korea was formulating its development strategy after the Korean War, it should have focused on growing rice. But Korea realized that even were it to become the best rice grower in the world, it would still be poor, or at least poorer than the more advanced countries. If it were to close the gap in incomes, it had to close the gap in knowledge, and that entailed heavy investments in education and industrialization. Korea realized that a country's comparative advantage could change. Thus, as countries, the new strategies must be based more on dynamic comparative advantage. But assessing dynamic comparative advantage is difficult; but indeed, even assessing static comparative advantage in today's global economy is not so easy. Traditionally, it has been

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<sup>37</sup> See Hausmann, Hidalgo et al (2011).

argued, using the Heckscher-Ohlin model, that developed countries have a comparative advantage in capital intensive high technology (skilled labor) intensive goods.

But capital is highly mobile, and many aspects of technical knowledge (especially when embedded in machines) relatively mobile. So too, skilled labor is relatively mobile.

What then is the real source of comparative advantage? It is place based characteristics, the immobile “factors,” more importantly, the embedded knowledge of society, its institutions and norms, the institutional infrastructure (its political system, and its stability; its rule of law; its systems of checks and balances), its physical infrastructure, its reputation (“branding”), and the skills, health and discipline of work force. All of these affect ability to attract and retain talent and capital. Young people care about the environment, about “meaning” in their work, and cooperation and challenge (including intellectual challenge) in the work place.

It is hard—but essential—to change these in constructive ways. It is also essential not to change these in adverse ways: the move in many countries in recent years to more authoritarian governments has increased the uncertainties.

## **6. How can developed countries help?**

Having characterized a new multi-pronged development strategy, the natural question is, how can developed countries help? There is a role that they can play in each of these areas. A fairer global trade regime would obviously help, especially in both agriculture and manufacturing. The current regime has agricultural prices depressed by massive subsidies in the developed countries, and yet inhibits the developing countries from assisting their economy in making transitions out of agriculture.

The investment regime which developed countries are attempting to impose is also adverse to development. It impedes domestic requirements, which can facilitate learning. Investment agreements impede renegotiation that would allow developing countries to get a fair share of the value of their natural resources. They also impede the imposition of regulations that protect the environment, health, safety, and economic stability.

While international trade agreements typically have provisions for compulsory licenses, the advanced countries have put pressure on developing countries not to exercise those rights. The developed countries need to recognize that the IPR regime which is appropriate for a developing country is different from that appropriate for an advanced country—and the intellectual property regime in the advanced countries itself, a variant of which they have tried to impose around the world, is designed not to promote innovation, but to promote the profits in certain politically powerful sectors. Moreover, the developed countries (especially the US) refuse to recognize the valuable environmental services (biodiversity) provided by the developing countries. The result of all of this is that there is a risk of either a growing knowledge gap or of a large flow of money from developing countries to developed—rather than the other way around.

At the same time, the developed countries have not done what they should to stymie the flow of corrupt funds out of developing countries—providing safe havens both in off-shore secrecy havens and in on shore centers for money laundering.

The developed countries have, at the same time, not lived up to their commitment to provide support for developing countries, either in general assistance or in assistance targeted at climate change adaptation and mitigation.

There is a simple way of providing the resources which will, at the same time, promote global stability and growth. Every year, countries around the world put aside several hundred billions of dollars in reserves—as protection against the economic volatilities and uncertainties they face. These amounts increased significantly in the aftermath of the East Asian crisis, when developing countries around the world saw the consequences of not having enough reserves: crisis and a loss of economic sovereignty, as the IMF imposed harsh and unreasonable conditions in return for assistance. But this money—income not spent—depresses global aggregate demand. At times, this is offset by countries spending beyond their means, but most countries have realized the dangers of doing so, so that overall, there is a bias towards weak global aggregate demand.

Today, most countries hold their reserves largely in dollars (though also in gold, euros, and yen). This creates a problem known as the Triffin Paradox: as the reserve currency owes more and more money to those abroad, confidence in the country may erode. Thus, the current reserve system risks both weak aggregate demand and global macro instability.

These problems can be easily rectified by creating a global reserve system—where countries agree to convert the global reserve currency into their own currency. The annual emissions can be designed to offset the amounts put into reserves, maintaining the global economy at near full employment. And the emissions can be transferred to the accounts of the developing countries, increasing their purchasing power, but without subtracting from the purchasing power of those in the developed countries.

## **7. Concluding remarks: Reformulating development thinking**

Success in development over past 60 years was greater than anyone anticipated: simply contrast Myrdal's predictions for Asia with what happened. There is an enormous gap in knowledge, as well as in resources, that has to be closed. Most of the advanced countries are engaged in the service sector—that sector accounts for 80% or more of GDP. So if there are disparities in standards of living, it relates to productivity in these service sectors. There are huge disparities in productivities within countries, even greater between countries.

The basis of the success of growth over past half century was export-led growth. We have deconstructed what enabled manufacturing to provide this growth spurt, this structural transformation. It won't be able to do so in the future to anything like that extent. There has to be another strategy—that performs some of the essential roles that manufacturing export-led development did.

Successful development policy will need to be explicitly more multi-pronged, addressing separate “challenges” that manufacturing sector addressed simultaneously. We have shown how a coordinated {Agriculture, Manufacturing, Mining, Service Sector} strategy has the prospect of attaining the same success of the old manufacturing export-led strategy.

### *Comprehensive Development Strategy*

In short, what is needed is a comprehensive development strategy, leading to inclusive growth, with inclusive participation, including a balance between markets, government, and society, based on the new understandings of what leads to successful economic and societal transformation, responding to the particular strengths of the country and addressing the particular challenges—including those posed by demographics. Most importantly, it must create new dynamic comparative advantages.

Resources will be needed. Current policies of advanced countries not only impede the possibility of developing countries learning, of their closing the gap between themselves and the advanced countries, but actually encourage a flow of resources out of developing countries.

We have put forward a simple proposal for a global reserve system which would generate revenues to finance large amounts of assistance to developing countries—at the same time that it would contribute to global growth and stability.

The challenge facing the less developing countries in coming decades is enormous. Even when successfully implemented the multi-prong strategy we have outlined is unlikely to provide successes of the magnitude experienced in the East Asia miracle. And it is not an easy strategy to implement. It is far more complex than the manufacturing-export led strategy. The developed countries can provide substantial help. Helping the developing countries is a moral issue. But beyond that, there will be enormous economic and political consequences of not helping the developing countries can be enormous, not the least of which will arise from the inevitable migration pressure that will result from an ever increasing gap in income.



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