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# China's Contribution to Development Cooperation : Ideas, Opportunities and Finances

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## Abstract

Conventional economic theories seem to be inadequate in explaining the diverse and multipolar world we live in. Having lost confidence in the Washington consensus, developing countries are increasingly looking East for development experiences and ideas: what worked, why and how. This paper examines China's role in development cooperation from the angle of structural transformation as a major driver of growth and job creation. Being a bit ahead in the structural transformation process, China can contribute ideas, tacit knowledge, implementation capacity, opportunities as well as finances. Based on a joint learning model, developing countries choose partners based on their respective comparative advantages, instruments of interaction and degree of complementarity.

... / ...

**Keywords:** Structural Transformation, Development Cooperation, Development Finance.

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.../... Countries that have a higher number of revealed comparative advantage (RCA) in sectors that needed strongly would be in a better position to help in structural transformation. We use empirical evidence to show that China-financed infrastructure projects do address Africa's infrastructure bottlenecks, and in addition, China's industrial upgrading and outward investment provide opportunities for light manufacturing development in low-income developing countries. Further, expanding the definitions of international aid or cooperation could induce more development financing from various sources. Rationales of China-led grand vision of "One Belt One Road" are discussed.

"Give a man a fish and you feed him for a day. Teach him how to fish and you feed him for a lifetime."

*Lao-Tze (Circa 571-470 B.C.)*

授人以鱼不如授人以渔。  
老子(约公元前571-470年)

## 1. Introduction and Summary

Today we are facing an increasingly diverse, multipolar and yet interdependent world. Monolithic explanations of international development seem to fall short in describing today's multipolar world that we live in. Having lost confidence in the Washington consensus in the Great Recession since 2008, developing countries are increasingly looking East for development experiences and ideas: what worked, why and how. Similarly, theories describing international aid seem to be inadequate in explaining the diversified financing flows for development goals. A major rethinking is in order.

History has shown that structural transformation is critical to economic development. It is the reason some nations prosper while others languish.<sup>1</sup> Developing countries have for decades been trying to catch up with the industrialized high-income countries, but only a few have succeeded. For Korea, it took only 35 years to grow from a war-torn agrarian economy in 1953 to a manufacturing leader in 1988. China, started the transformation with pragmatic and geographically differentiated strategies to overcome infrastructure bottlenecks and institutional constraints, achieved an average annual growth rate of 9.8% from 1978 to 2013, transforming itself from an agrarian economy to a manufacturing powerhouse within the time span of 35 years.

Why was it possible for China to achieve such a dramatic transformation without relying on international aid? What would be China's roles in the Post-2015 development cooperation? Based

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<sup>1</sup> There is an extensive literature on this, see for example, Arrow (1962), Akamatsu (1962), Gerschenkron (1962), Kuznets (1966), Greenwald and Stiglitz, (2013), Hausmann and Rodrik (2003), Lin (2010, 2012a), North (1981), Rodrik (2010), Stiglitz and Lin 2013, UNIDO 2013, among others.

on the theoretical foundation of New Structural Economics (Lin 2010, 2011, 2012a), this paper examines China's role in the Post 2015 era from the angle of **structural transformation**. The objective is to review past experiences and examine how China has been utilizing what she knows best to contribute to world development: providing new ideas, tacit knowledge, experiences, opportunities as well as finances. We go beyond the discussion of Official Development Aid (ODA) to cover South-South Development Cooperation with a broader definition, and provide a way of thinking "out of the box" of "aid effectiveness". In addition, we discuss the rationales of China-proposed "One Belt and One Road" in the context of providing global public goods for sustainable development.

We consider that all emerging and developing countries are at various stages of climbing the same mountain of structural transformation. Each climber has the freedom to select its many partners according to their respective comparative advantages, their alternative instruments of interaction and their respective degrees of complementarity.<sup>2</sup> China, being a bit ahead in structural transformation, has a high complementary and more instruments of interaction. With revealed comparative advantage in 45 out of 99 subsectors (HS-2 digit code), and demonstrated capacities in building large infrastructure projects such as hydropower, road and port facilities, China is in a position to provide a window of opportunity and help releasing "bottlenecks" to capture the opportunity in structural transformation in many developing countries. As the labor cost rising rapidly in China, low income countries can benefit from seizing the opportunities to attract labor-intensive enterprises relocating out of China (Lin 2012 and Lin and Wang 2014).

In the post 2015 era, incremental development financing will come less from official development assistance (ODA), but more and more from the other official flows (OOFs), OOF-like loans, and OOF-like investments from development banks, and Sovereign Wealth Funds (SWFs). In a multipolar world, a new set of broader definitions of development finances would facilitate transparency, accountability and selectivity by development partners, and encourage SWFs to invest in developing countries. A global consensus seems to have emerged in the light of recent OECD-Development Assistance Committee (DAC) decision on reforming the old concept of ODA and introducing a broader definition of Total Official Sustainable Development (TOSD)<sup>3</sup>, although the details of this new concept have yet to be worked out.

The second section summarizes China's dramatic transformation and the key underlying factors: Openness to ideas, trade, and the experimental /incremental approach. The third section examines the philosophy underlying China's South-South development cooperation (SSDC), and section four discusses some evidence. The Issues, challenges and prospects on development financing as well as the "one belt and one road" effort are discussed in the fifth section. The last section concludes.

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<sup>2</sup> Our joint learning model is applicable only to developmental finance, the issue at hand, not applicable to humanitarian aid in situations such as conflicts, disasters and epidemics.

<sup>3</sup> See OECD-DAC High Level Meeting decision on 16 December 2014  
<http://www.oecd.org/dac/OECD%20DAC%20HLM%20Communique.pdf>

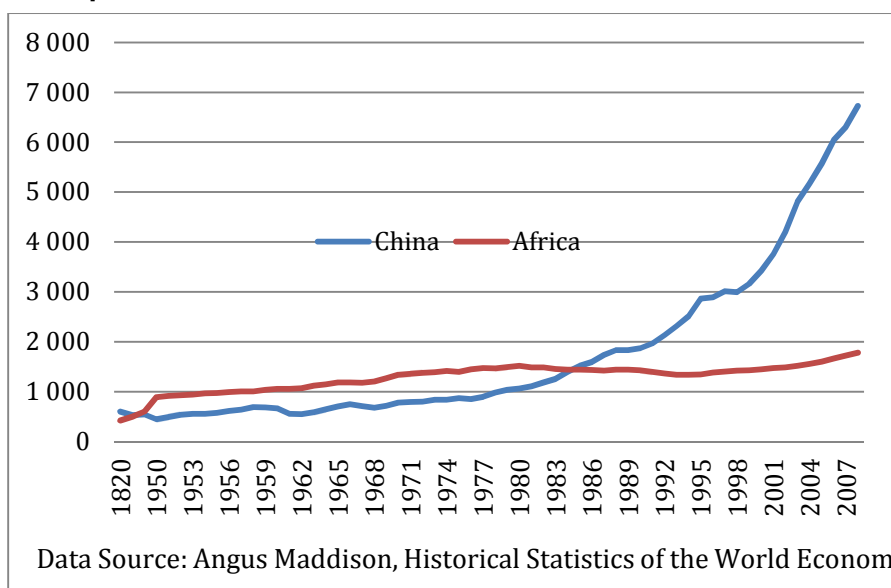
## **2. China's Contribution to Ideas: Development Economics 3.0**

Developing countries have for decades been trying to catch up with the industrialized high-income countries. Under the then prevailing development thinking, governments have been advised to adopt import substitution policies, intervening to overcome market failures, and to accelerate industrialization since World War II. The early development thinking can be labeled as "development economics 1.0". Countries following this approach had some initial success, but these were quickly followed by repeated crisis and stagnation. The development thinking then shifted to neoliberalism, as summed up in the Washington Consensus in the 1980s, with an attempt to overcome the government failures. Reforms in governance and the business environment were intended to transfer to developing countries the idealized market institutions of industrialized high-income countries. These policy prescriptions can be labeled "development economics 2.0." The result was lost decades of growth in developing countries –many of them have experienced de-industrialization.(Lin 2013a. p. xxiii)

The few developing economies that industrialized and grew dynamically after World War II – most of them in East Asia – followed an export oriented development strategy. Cambodia, China, Mauritius and Vietnam, which achieved stability and dynamic growth in their transition from a planned to a market economy, followed a gradual, dual track approach rather than the shock therapy advocated by the Washington Consensus. They continued to protect firms in priority sectors while liberalizing entry in other labor-intensive sectors, which led to structural changes which are more consistent with the countries' comparative advantages. For example, it took only 35 years for Korea to grow from a war-torn agrarian economy in 1953 to a manufacturing leader in 1988. The share of manufactures in GDP rose from merely 9% in 1953 to 30.1% in 1988, while that of agriculture and mining sector shrunk to single digits in the 1990s (Chandra, Lin and Wang 2013).

When China started its economic transformation in 1978, it was an agrarian economy with Agriculture as its largest sector accounting for 71% of total employment. Its per capita income was US\$154 in 1978, less than one-third of the average in Sub-Saharan African countries (Figure 1). In as late as 1984, 50% of China's export was concentrated in crude materials including oil, coal, food and animals and other agricultural products. Since 1979 China has achieved a miraculous average annual growth rate of 9.8%. Its per capita income reached \$6,560 dollars in 2013, more than four times of the average in Sub-Saharan countries. According to the World Bank estimate, in 1981, 84% of China's population lived below the international poverty line of \$1.25 a day. The ratio was reduced to 11.9% in 2009. During this period, 680 million people lifted themselves out of poverty, making the largest contribution to poverty alleviation in the world (Lin-speech at OECD-DAC, Ravallion and Chen 2007).

**Figure 1 Per Capita Income in China and Africa (in 1990 International Dollar)**



Past Development thinking has focused on what developing countries do not have and developed countries do (capital-intensive industries), on what developing countries cannot do well and developed countries can (Washington consensus policies and governance), and on areas that do not contribute directly to structural change in developing countries but are viewed as humanitarily important by high-income countries (health and education). Building on Adam Smith's insights and looking closely at the causes of structural change, Lin proposes a move to "development economics 3.0," which focuses on **what developing countries have** (their endowments) and areas in which they can do well based on **their (latent) comparative advantage** (as determined by their endowments), to allow them to initiative a process of dynamic structural transformation (Lin 2013a p.xxv).

The New Structural Economics (NES) (Lin 2012c) points out that economic development as a dynamic process entails learning, industrial upgrading and corresponding improvements in "hard" (tangible) and "soft" (intangible) infrastructure, at each level. Such upgrading and improvements require an inherent coordination, with large externalities to firms' transaction costs and returns to capital investment. Thus, the information and knowledge to identify a country's existing and latent comparative advantage are considered public goods and services that government should provide. In addition to an effective market mechanism, the government should play an active role in learning and facilitating structural transformation, diversification and industrial upgrading. (Lin 2012c, p. 14-15)

Against the criticism from Washington, China started the transformation through a dual-track approach, which continued to provide protections to old comparative advantage-defying sectors and liberalize the entry to new comparative advantage-conforming sectors, and an experimenting approach via Special Economic Zones (SEZs) and industrial parks to facilitate the growth of the new sectors. The people have been learning, imitating, investing, acquiring tacit knowledge, accumulating factor endowments such as human and physical capital, and expanding its

comparative advantages. Now China is utilizing its own ideas and experiences in providing South-South Development Cooperation, following the thousand-year tradition of not only “offering fish” but also “teaching how to fish” (Lao-Tze).

### **3. South-South Cooperation for Structural Transformation: Opportunities and Finances**

China’s South-South Development Cooperation (SSDC) has been the subject of many heated debates, which has escalated in the recent years. Many of the critics seem to have forgotten that China is big but not yet rich – it was a low-income country when it started providing development cooperation to other developing countries in the 1960s. The past 50 some years have witnessed a joint learning process for economic transformation in China and other countries in the South. The nature of this “South-South cooperation” for co-transformation is fundamentally different from that of the North-South donor-recipient relationship.

#### **3.1. A brief review of literature**

The past literature on aid or aid effectiveness has largely focused on donors’ behaviors – who provides aid, for what objectives/motivations, under what conditions, and their effects. There is an extensive literature on aid effectiveness, see for example, Burnside and Dollar (2000), Easterly, Levine, and Roodman. (2003), Easterly (2003), Collier and Hoeffler (2004), Rajan and Subramanian (2008), Roodman (2009), Arndt, Jones and Tarp (2010), among others. Only a limited number of authors have focused on the institutional economics of aid (Martens et al 2002), and recently on the sectoral allocation of foreign aid and growth and employment (Akramov 2012,<sup>4</sup> and van der Hoeven 2012<sup>5</sup>). In particular, Martens et al 2002 pointed out the “principal-agent” problems in the “donor-recipient” relationship, and found that “the nature of foreign aid – with a broken information feedback loop – ... put a number of inherent constraints on the performance of foreign aid programmes. All these constraints are due to imperfect information flows in the aid delivery process.” (Martens et al 2002, page 30). For example, the study quoted Streeten’s famous question about “Aid with conditionality”: “Why would a donor pay a recipient to do something that is anyway in his own interest? And if it is not in his own interest, why would the recipient do it anyway?”<sup>6</sup> This study among many others points squarely at the one of the basic dilemma in modern ODA i.e. the nonaligned incentives between donors and recipients. (See also Easterly (2003), Hynes and Simon Scott 2013).

The issues of imperfect information and agency problem in “aid with conditionality” are under-researched. From the angle of joint learning and co-transformation, we address the issues of

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<sup>4</sup> Akramov 2012, in particular, found that economic aid, including aid to productive sectors and economic infrastructure, contributes to economic growth by increasing domestic investment. Aid to social sectors, however, does not appear to have a significant impact on human capital and economic growth.

<sup>5</sup> Van de Hoeven 2012, took note of China’s approach of focusing on economic infrastructure, pointed to the neglect of concern for employment and inequality in MDGs in 2000. He called for the “refocusing of development efforts”, “combining a greater share of development aid for employment and productivity enhancing activities with a change in national and international economic and financial policies, so as to make employment creation (together with poverty reduction) an overarching goal.” (Van de Hoeven 2012 page 24).

<sup>6</sup> Bertin Martens, Uwe Mummert, etc, *The Institutional Economics of Foreign Aid*, Cambridge University Press, (2001), p.9.



principal-agent, imperfect information and a “broken feedback loop” in aid effectiveness. We suggest to use a model of “joint learning and co-transformation” where both development partners are **learners on equal footing**, but with different speed of learning. Learners can choose different partners or teammates according to their respective comparative advantages, instruments of interaction, and degree of complementarity. One learner could have multiple partners, upstream or downstream, each plays a complementary role in a mutually beneficial fashion. Potentially this model could align the interests of all partners (be they from the North or from the South) and reach “win-win” solutions (Lin and Wang, forthcoming, OUP Handbook chapter).

What are the unique features of China’s South-South Development Cooperation (SSDC)? China’s approach in SSDC differs from the international aid literature of established donors, focusing on “poor helps the poor” and “soldier teaches soldier” by utilizing China’s comparative advantage and by combining trade, investment and development cooperation. In official language, China follows the principles of equality and mutual respect, reciprocity, mutual benefit, and noninterference of domestic affairs. Aside from adherence to the “One China” principle, no political strings are attached to China’s cooperation (State Council 2011). This is not to say that China’s aid or development cooperative activities are “altruistic”, they are not. The government “never regards such aid as a kind of unilateral alms but as something mutual.” (Paragraph 1 in the “Eight Principles for Economic Aid and Technical Assistance to Other Countries”, January 1964). This “mutual (economic) benefit” is based on the simple idea of “exchanging what I have with what you have” (*hutong youwu*, or 互通有无) from which both can gain, as we learned from Adam Smith. This is actually a market-based approach which ensures the incentives of both partners are aligned.

The State Council 2006 White Paper on “China’s Africa Policy” listed “learning from each other and seeking common development” as one of its four principles guiding its engagement with the continent.<sup>7</sup> This is a unique principle that no western donor has specified in their documents. Since learning is an action initiated by the learners themselves (certainly not imposed by teachers), we found this is a feature very closely related to “country-on-the-driver’s- seat” and hence named our model as a “joint-learning model”.

### 3.2 the Size of China’s SSDC

First, the size of China’s aid and South-South cooperation is small but commensurate with its per capita income level. Many analysts have tried to compare the amount of Official Development Aid (ODA) between China and established donors such as the United States without considering the huge differences in income per capita, which is rather misleading.<sup>8</sup> When China started to provide development assistance to African countries 50 years ago, it was poorer than most of the Sub-

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<sup>7</sup> 《中国的非洲政策》, [China’s African Policy], MOFA of PRC Website (Jan 2006) from [http://www.fmprc.gov.cn/mfa\\_chn/ziliao\\_611306/tytj\\_611312/zcwj\\_611316/t230612.shtml](http://www.fmprc.gov.cn/mfa_chn/ziliao_611306/tytj_611312/zcwj_611316/t230612.shtml)

<sup>8</sup> Studies include, for example, Wolf, Wang and Warner (2013) from Rand, and Strange et al from Center for Global Development.

Saharan African countries. Even now, China's per capita income, at \$6,560 dollars in 2013, is only 1/8th or 1/10<sup>th</sup> of that for the established OECD donor countries. (See figure 2.1 in Box 1).

China's definition of aid differs from that of the OECD –Development Assistance Committee,<sup>9</sup> and therefore, direct comparison does not make sense. According to the State Council White Paper on China's Foreign Aid, China provides grants, interest-free loans, and concessional loans, with 8 forms of foreign aid: "complete (turn-key) projects, goods and materials, technical cooperation, human resource development cooperation, medical teams sent abroad, emergency humanitarian aid, volunteer programs in foreign countries and debt relief." (State Council 2011 p.8) See Brautigam 2011, Xu and Carey 2014 for detailed discussions of these definitions.

Due to demand from African countries, new types of SSDC have been added in the recent years, including for example, Other Official Flows (large but less concessional loans and export credit provided by the Eximbank of China), Resource for Infrastructure (Rfi) packages<sup>10</sup>, equity investment by China-Africa Development Fund (CAD Fund), infrastructure investment by China Development Bank (CDB) and other commercial banks (which are OOF-like loans and investments with the intention for development. But they are non-concessional, and suitable for long-term infrastructure investment).

**Box 1. China's Development Cooperation: small in size but commensurate with its per capita income level**

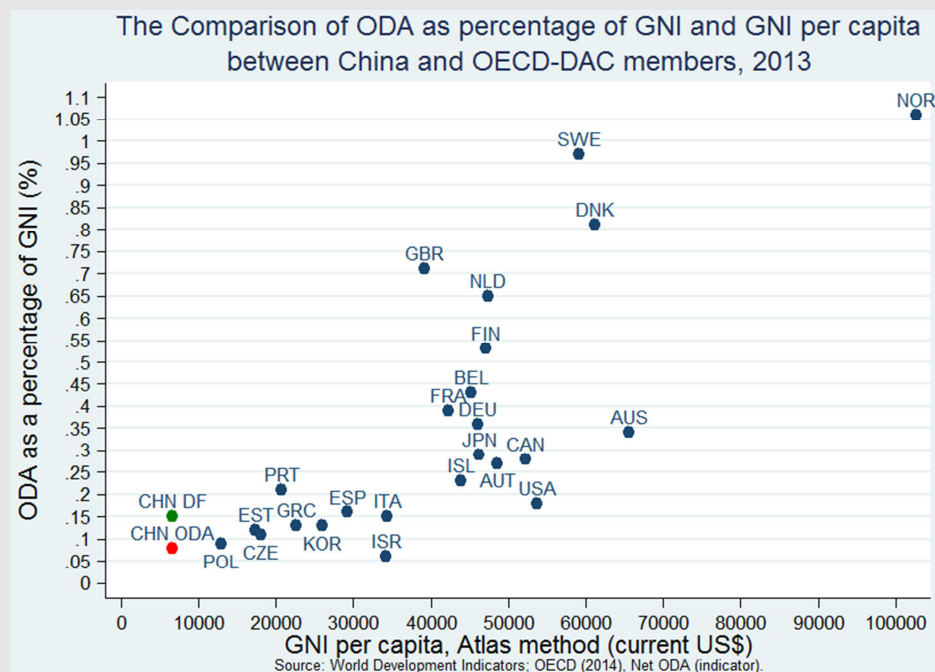
Many analysts, and OECD-DAC, have tried to compare the amount of Official Development Aid (ODA) between China and established donors such as the United States without considering the huge differences in income per capita.

Here we take into consideration of different stages of development, and compare China's total ODA as a percent of GNI, to those of the OECD countries. We found that China's aid to developing countries started from a relatively low per capita income level in the 1960s. We use a recent estimate of China's ODA carefully done by Kitano and Harada 2014, which puts China's net ODA at **\$7.1 billion** in 2013. They then estimated the net disbursement of preferential export buyer's credit of \$7 billion in 2013. Adding the two elements together, one would reach a total of **\$14.1 billion** as China's development financing (a conservative estimate). We found that China's net ODA accounted for 0.08 percent of GNI in 2013, while China's DF reached 0.15 percent of GNI in the same year. The first ratio is lower than some of the OECD Countries. However, if one draws a linear regression line on this scatter chart, China is located well above the regression line, indicating China is contributing a relatively significant proportion of its GNI to aid and development cooperation as compared to its per capita income level of \$6,560 in 2013. In other words, **China, at its current stage of development, is more generous in providing development financing than some of the rich countries.**

<sup>9</sup> According to the OECD definition, Official Development Assistance (ODA) includes grants or loans which are a) undertaken by the official sector; b) with promotion of economic development and welfare as the main objective; and c) "is **concessional in character** and conveys a grant element of at least 25 per cent (calculated at a rate of discount of 10 per cent)". See <http://www.oecd.org/dac/stats/officialdevelopmentassistance/definitionandcoverage.htm>. The IMF and World Bank use floating discount rates, the Commercial Interest Reference Rate (CIRR), as the discount rate. Since Oct 2013, World Bank has adjust its discount rate to 5%, as interest rates in global financial market have decreased significantly after 2008 Financial Crisis and arouse huge debates about the rationality of the 10% discount rate, see the website of World Bank, <http://www.worldbank.org/ida/grant-element-calculations.html>.

<sup>10</sup> See a new book on Rfi packages published by World Bank in June 2014, with comments from Lin and Wang.

**Box Figure 1. China's ODA: Comparison with OECD on two Dimensions, 2013**

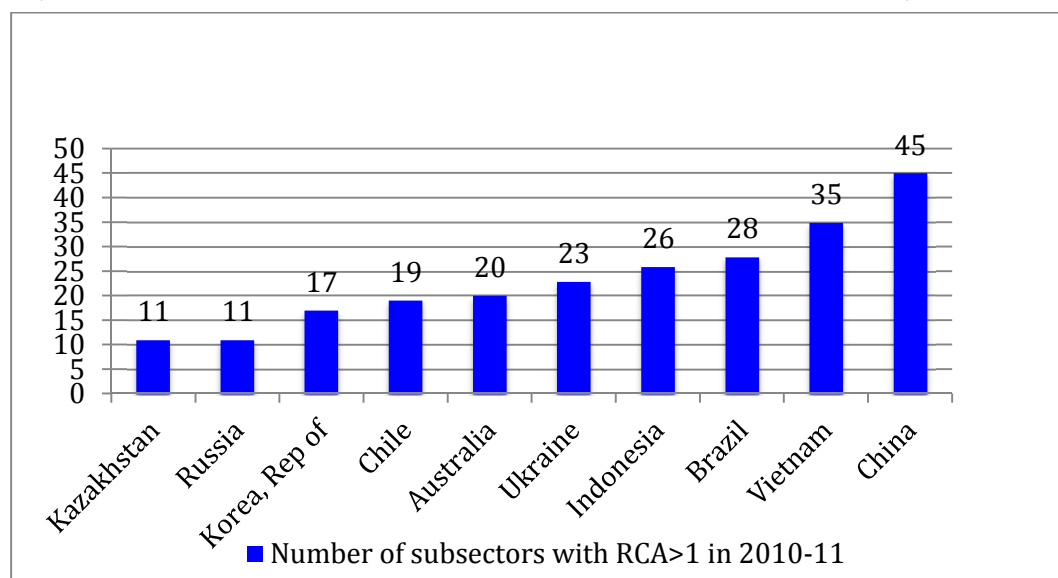


**Source:** Wang, Yan 2011, page22. Updated based on the AidFlow 2013 data, accessed on August 5 2014. See Kitano and Harada 2014 for their estimates of China's ODA.

#### 4. South-South Development Cooperation is effective

Based on our model of “joint learning and co-transformation”, our proposition 1 is that, **a partner who is successful in transformation can utilize its comparative advantage in development cooperation to help diffusing “tacit” knowledge on the “how to” issues of development.** This also provides a basis for two or more partner countries working together in one “host country” for structural transformation, job creation and welfare improvement – each partner can work in sectors where they have respective comparative advantages. The US for example has comparative advantage in health care, education, food production and Information technology, etc. China for example has revealed comparative advantage in 45 out of a total of 99 subsectors in merchandise export (HS 2-digit code), as well as demonstrated capacity in the infrastructure construction sector, including building hydro-power stations, roads, and port facilities, and thus, in a better position to transmit “tacit knowledge” in these sectors. In infrastructure, China is able to provide a “total solution” including design, engineering and construction implementation, that other donor countries may not able, or not willing, to provide. See Figure 3 on RCA, and Annex 1 on Hydropower.

**Figure 3. Number of subsectors with Revealed Comparative Advantage, 2010-11**

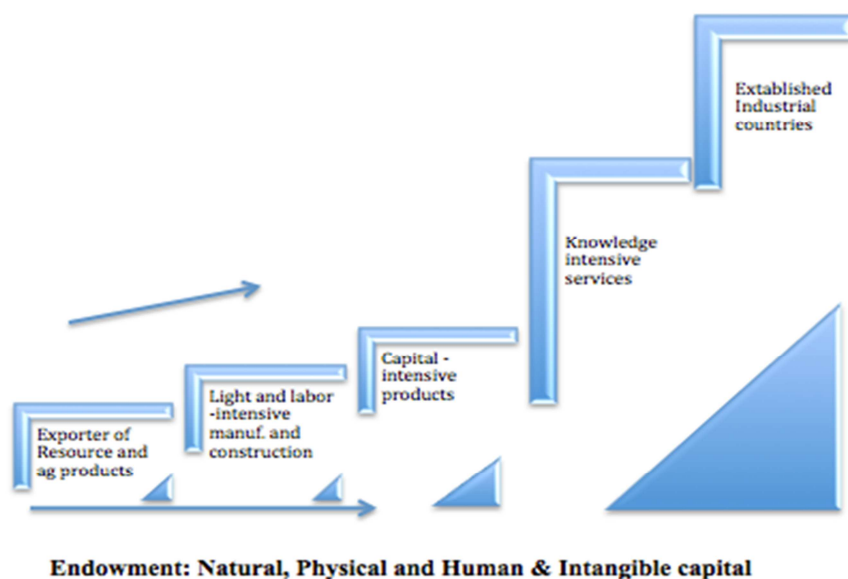


**Source:** Lin and Wang 2014 forthcoming for AsDB, based on RCA data from WITS using HS code at 2 digit level with 99 subsectors in total.

Our Proposition 2 is that **Learning can happen only by taking tiny steps, “one step at a time” which is commensurate to a country’s natural endowment or accumulated factor endowment.** Since China has conducted partial reforms via experimental approach, it can help others using the same partial reforms through SEZs and experimentation.

An analogy is that China and other developing countries are teammates in climbing the same mountain, one cannot climb to the top alone without the help from the others. In a globalized world, one country’s success depends heavily on the wellbeing of its many partners. A good climber can help teammates by pulling them up a step, but the good climber him/herself may also need to be “pushed up” in case of need. African people, the media and NGOs, can help to “pull” or “push” the partners and to be selective and induce the desired partner behavior: to abide by local laws and regulations, and follow international labor and environmental standards. See illustration below.

**Illustration 1. Learning can happen by taking “one step at a time” and building on the comparative advantage determined by a country’s endowment**



**Source:** Authors.

China’s development cooperation follows the logic of New Structured Economics by helping Africans to **take tiny steps** in agriculture, infrastructure, and labor-intensive light manufacturing sectors (Lin 2012c). Partial reforms through Special Economic Zones (SEZs) can also help in structural transformation, as shown by China’s experiences (Zeng 2011). Partner countries need to have more recent intimate “tacit” knowledge and experiences in order to be able to help in such an experimental approach because of similar endowment, similar institutional constraints, and similar human capital structure. In what follows, we present two kinds of evidence of effectiveness to support these arguments:

1. China has been helping to build “bottleneck releasing” infrastructures in Africa;
2. China has been helping to develop industrial clusters through industrial zones.

#### **4.1. China’s development cooperation helps to addressed Africa’s bottlenecks**

Non-traditional bilateral development financiers such as China, India, Arab countries and Brazil have emerged as major financiers of infrastructure projects in Africa. Overall, infrastructure resources committed to Africa by these countries jumped from US\$1 billion per year in the early 2000s to over US\$10 billion in 2010. China held a portfolio of some \$20 billion in active infrastructure projects in more than 40 African countries. Chinese financing for African infrastructure structure projects is estimated to have reached a record level of roughly US\$5.1 billion in 2009, though it fell to around \$2.3 billion in 2010 (C. Chen 2013).

In particular, China has been working in bottleneck-releasing sectors such as power generation and

transmission. While “Donors have neglected power since the 1990s”, (p.25, in Foster and Briceño-Garmendia 2010), 50% of China’s commitment on infrastructure was allocated to Electricity (Chen 2013). A recent study found that China has contributed, and is contributing, to a total of **9.024 Gigawatt** of electricity generating capacity, including completed, on-going and committed power projects.<sup>11</sup> The impact of this investment is likely to be transformative when one considers that the entire installed capacity of the 47 Sub-Saharan African countries excluding South Africa countries is 28 Gigawatt.

### **Box 2. China helps to address the Infrastructure Bottlenecks in Africa**

A recent study ranks the donors/providers of infrastructure in Sub-Saharan Africa for the period 2001-2008 in Sub-Saharan Africa. China is shown to be the largest infrastructure financier followed by three multilateral organizations, IDA, EC and AFDF. In total there are three Southern providers in the top ten, China, India and ISDB. **China alone accounts for 34% of the total official financing amount on infrastructure in SSA**, higher than any Northern partner. (Chen 2013)

In Lin and Wang 2014, we used a three-step method to address the question that whether, and to what extent, do China financed infrastructural projects match African’s bottlenecks? A short answer is that they seem to have matched in 63 per cent of the 168 infrastructure projects in 2001–10. Step 1, five indicators from the World Bank database are used to define Africa countries’ bottlenecks, including water, electricity, roads and rail, air transportation, and telecommunication. We then compare the ranking numbers for sectors 1 to 5 for the country,  $i$ , and select the lowest ranking sector to be the bottleneck 1 for country  $i$ ; and then exclude the selected sector  $j^*$ , select the next lowest ranking sector as bottleneck 2, and continue to follow this process for bottleneck 3.

This process can be expressed as,

$$\text{Bottleneck 1 for country } i = \min(R_{i,j}), \text{ where } j = 1, \dots, 5.$$

$$\text{Bottleneck 2 for country } i = \min(R_{i, -j^*}) \text{ where } j = 1, \dots, 5.$$

In Step 2, World Bank-PPIAF Chinese projects database is used to find the location and number of infrastructure projects financed by China in each sector during the period of 2001–10. There are 168 projects allocated in 5 sectors.

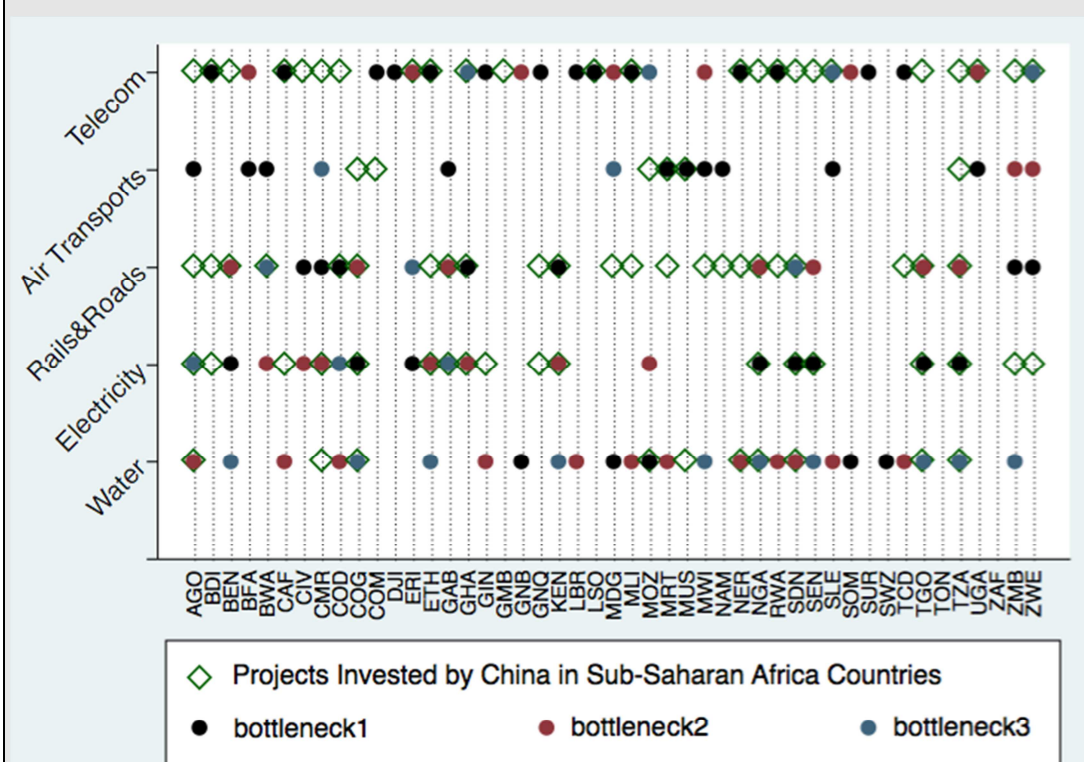
Step 3, the two datasets are merged by country code, and see if the locations of the Chinese financed projects match the bottlenecks. We have also calculated some probabilities of projects ‘hitting’ the bottlenecks. Results are as follows:

- Probability of (hitting one of the 3 bottlenecks) =  $105/168 = 0.625 = 62.5\%$
- Probability of (hitting the bottleneck 1) =  $39/168 = 0.232$
- Probability of (hitting the bottleneck 2) =  $31/168 = 0.185$
- Probability of (hitting the bottleneck 3) =  $35/168 = 0.208$

<sup>11</sup> The Hoover Dam in Colorado, by comparison, is a 2 Gigawatt facility, producing on average electricity for about 390000 US homes. See Chen 2013.

**Box Figure 2**

**China- Financed Projects matched with Bottlenecks in Sub-Saharan Africa in 62.5% of 168 cases in 2001-2010.**



**Source:** Lin and Wang 2014a, UNU-WIDER working paper 2014/046, Annex I.

In Box 2 above we provided empirical evidence to show that China financed infrastructure projects in 2001-2010 have, to a significant extent, targeted and addressed African countries bottlenecks in five sectors: water, electricity, road and rail, air transport, and telecom (based on PPIAF- China project data). The total number of project in the dataset is 168 allocated in the five sectors, and the probability of these China-funded projects “hitting the bottlenecks” is 62.5% in the period of 2001-2010. There is however much room for better targeting and improvement, especially in the water sector.

From 2010 to May 2012, China approved concessional loans worth a total of US\$11.3 billion for 92 African projects. For example, the Addis Ababa-Adama Expressway of Ethiopia and the Kribi Deep-water Port of Cameroon were both funded by concessional loans from China. Some of China's main commercial banks have also started buyer's credit businesses in Africa, supporting the power grid in Ghana, hydropower stations in Ethiopia, a west-east expressway in Algeria, and other projects (MOFCOM, August 2013).

## **4.2 China has been helping develop clusters-based industrial parks (CBIP)**

The idea that industrial clusters can promote structural transformation is not new. Economists have emphasized that clusters take advantage of economies of scale, reduce transactions- and search- and learning- costs (Krugman 1991; Greenwald and Stiglitz, 1986; Porter 1990, Lin and Monga, 2011). The role of Special Economic Zones or Industrial Parks has been proven by the successful experiences of emerging markets. Specifically, investing in SEZs can 1) provide a bundling of public services in a geographically concentrated area, 2) improve the efficiency of limited government funding/budget for infrastructure, 3) facilitate cluster development, or agglomeration of certain industries, 4) propel urban development and conglomeration of services, and thus 5) they are conducive to growth, job creation, and income generation. (Lin and Wang 2013, page 14)

In particular, China has been supporting 19 Special Economic Zones around the world, with six of them in Africa, aimed to improve regional infrastructure and encourage outward investment into these low-income developing countries if there is a need. According to detailed studies by Brautigam and Tang, in total China has jointly established six Industrial Zones in Africa. Over 80 companies have signed agreements and settled in these Industrial zones, creating over 11,000 jobs for African workers (Brautigam and Tang 2013), but this is underestimated and outdated..

China's labor cost is rising rapidly from \$150 per month in 2005, to \$500 in 2012, and over \$600 in coastal regions in 2013 (growing at the rate of 15% annually plus currency appreciation of nearly 3%). More Chinese enterprises facing the pressure of seeking low-cost locations are moving inland or "going global". China has an estimated 85 million workers in manufacturing, most of them in labor-intensive sectors, as compared to 9.7 million in Japan in 1960 and 2.3 million in Korea in 1980. The reallocation of China's manufacturing to more sophisticated, higher value-added products and tasks will open great opportunities for labor-abundant, lower income countries to produce the labor-intensive light-manufacturing goods that China leaves behind (Lin 2012d, Chandra, Lin, and Wang, 2013).

China is taking the lead amongst the BRICS countries in Outward FDI, with the amount rising from a few million to over \$101 billion in 2013, with Russia, Korea, India and Brazil following (UNCTAD 2013xx). Roughly 60% of outward FDI from developing countries went into other developing countries, mostly in the form of greenfield investments that can typically open the door for South-South relocation of various industries from China and other emerging economies. While there is widespread suspicion on China's motivations and criticisms of its record of following international standards, some studies have shown that the investment has generated employment opportunities.<sup>12</sup> Manufacturing is China's key investment field in Africa. From 2009 to 2012, Chinese enterprises' direct investment volume in Africa's manufacturing sector totaled US\$1.33 billion. By the end of 2012, China's investment in Africa's manufacturing industry had reached

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<sup>12</sup> A few studies have found that China's Outward FDI has contributed to employment generation in both developing and industrial nations, see for example, Shen 2013, Weisbrod and Whalley 2011, Mlachila and Takebe 2011, Rosen and Hanemann 2011, and Derek Scissors 2012, and World Bank 2012 on "China's FDI in Ethiopia".



US\$3.43 billion (MOFCOM August 2013). Official data however is incomplete and underestimated OFDI to the order of 3:1 according to Shen 2013.

**Box 3. Results in 4 months: Huajian in the industrial park in Ethiopia**

African countries can achieve the same growth miracle if their governments can play an enabling role to facilitate the private enterprises' entry to sectors of their comparative advantages and grasp the opportunities of labor-intensive sectors relocating out of China. They can utilize their limited resources and implementation capacity strategically to build up industrial parks /special economic zones to overcome the constraints of poor infrastructure and business environment. The quick success of Huajian Shoe Factory in Ethiopia provides a convincing example for the approach. The wage rate of the footwear industry in Ethiopia is 1/8 to 1/10 of that in China, while its labor productivity is about 70% of that in China, so Ethiopia is highly competitive in the footwear industry. The late Prime Minister Meles Zenawi came to Shenzhen to invite Chinese shoe manufacturers to invest in Ethiopia in August 2011. The Chairman of Huajian Group, Mr Huarong Zhang, visited Addis Ababa in October in 2011, subsequently established a shoe factory in the Oriental Industrial Park near Addis Ababa in January 2012, hiring 550 Ethiopian and expanding to 2000 by December 2012. Within one year, Huajian had more than doubled Ethiopia's shoe exports. Huajian's employment reached 3500 by December 2013 and projects to hire 30,000 by 2016. Without the joint effort in establishing the Oriental Industrial Park supported by China's South-South Development Cooperation, it is highly unlikely that Huajian could have achieved so much in four months.

**Source:** Lin and Wang 2014.

## **5. Recent Progress and Future prospects of development finance**

This section first discusses Chinese government's two White Papers on "Foreign Aid" and discuss the issues and future prospect of China's Development Finance (DF).

### **5.1 The State Council White Paper 2011**

It is clear from the White Papers (State Council 2011, 2014) that Chinese government has not accepted the idea of Official Development Assistance (ODA) and shown little interests of trying to adopt OECD-DAC's reporting system. More specifically,

**Policy:** the White Papers 2011 marked five policies for its foreign aid:

- "Unremittingly helping recipient countries build up their self-development capacity.
- Imposing no political conditions. (Five Principles of Peaceful Coexistence)
- Adhering to equality, mutual benefit and common development.
- Remaining realistic while striving for the best.
- Keeping pace with the times and paying attention to reform and innovation."

**Financing:** Financial resources for Chinese foreign aid are a) grant, b) interest-free loan from the government budget, and 3) concessional loans issued by the ExIm Bank of China. Although debt cancellation is said to be part of the aid effort, it is cleared not included into the aid figures but with a separate category. Differing from the OECD-DAC, for concessional loans, only the government

subsidies (budget outlays) to cover the gap between agreed rate and the benchmark rate of People's Bank of China would be recorded in the official figures as "foreign aid". Currently, the interest rate for Chinese Concessional Loans is between 2-3 percent (fixed), with a maturity of 15-20 years, with 5-7 years of grace period. Up to 2009, 61% of concessional loans were used in infrastructure construction, while 16% in industrial development, 8.9% in extraction of natural resources and 4.3% in agriculture development.

**Approaches:** there are eight forms of approaches for China's foreign aid projects, which are not categorized as the way the Westerners do. Basically, it could be divided into aid-in-kind, turnkey project, capacity training, medical assistance, disaster relief, international volunteers and debt cancellation. Chinese industrial assistance, which undertakes its policy orientation as helping recipient to "build up self-development capacity", is a quite different approach comparing to ODA.

**Project Allocation:** According to the White Papers, Chinese assistance towards LDCs and LICs has always maintained about two thirds of its total. By geographic allocation, 45.7% of Chinese aid went to Africa and 32.8% to Asia in 2009. Clean energy and coping with climate change is also marked as one area for Chinese aid, which then got much more emphasized in the White Paper 2014.

**Managing System:** there is still not a unified agency in Chinese government to handle its aid-related activities. They rely on a coordination system among ministries, departments and the ExIm Bank of China, with a central role played by the MOFCOM. In 2011, the "liaison system" among different government apparatus was upgraded into a coordination system.

## 5.2 The White Paper 2014

The much expected new White Paper came out in July 2014, two months after the landmark speech by Chinese Premier Keqiang Li delivered at the African Union convention center on May 5 2014. Although adopted a much more "internationalized" approach in addressing poverty reduction and social welfare, the report still did not break new ground in publishing aid data disaggregated by countries and years, not to mention using the OECD-DAC definitions.

In this new White Paper, China's official stance is clear that, 1) it reiterates a position in supporting South-South Cooperation as a differentiated category from the North-South Cooperation. 2) China's supports for "trade for aid", or trade for development, but it is separated from other forms of SSDC like infrastructure, capacity and environment protection assistance. 3) China seems to plan to formulate new groupings with other developing countries (such as the BRICS Bank) on global public good issues. 4) consistent with the White Paper 2011, financial resources for China's external assistance include grant, interest-free loans, and concessional loans. 5) "Aid for infrastructure construction" is clearly elaborated as one of the most significant way for Chinese aid. By comparison, while China reported to have helped to build 390 "economic infrastructure" projects (road, rail, telecom and power generation) between 1950 and 2009, the number is boosted to 156

projects in three years between 2010 and 2012. 6) The share of assistance to Africa is increased from 45.7% in 2009 to 51.8% in the three years 2010-2012 (State Council White Paper 2014).

### 5.3 Future Prospect of Development Financing

As some established donors are constrained by their heavy debt burden and slow growth, development financing will come less from ODA, but more and more from the Other Official Flows (OOF), OOF-like loans, and OOF-like investments from development banks in emerging economies. Therefore, the prospect of China's South-South Development Cooperation (SSDC) is likely to expand. For instance, Chinese President Xi Jinping and Premier Li Keqiang have made fresh commitments to invest in Africa and Latin America. (Li Keqiang 2014) These loans are not necessarily ODA, but more likely to be OOF-like loans and OOF-like investment due to the nature of large infrastructure projects.

China's official stance in the White Papers has reflected a renewed confident in China's own approaches in development cooperation, which stresses "blood creation" rather than "blood transfusion",<sup>13</sup> as well as a deeper doubt about Western donors' approach of providing "aid with conditionality". Meanwhile, the credibility and relevance of ODA for global development have been questioned by OECD members themselves.<sup>14 15</sup> The concept of ODA has been under criticism in the recent years and the OECD publically opened the debate in December 2012 (Boussichas and Guillaumont 2014).

To "integrate" emerging economies into a global support system for development and to lower the transaction cost would require us to keep an open mind to the Chinese perspective about international development, especially allowing for developing countries to help each other on the basis of "equality and mutual respect, reciprocity, and mutual benefit".

We propose to broaden the definitions of "Development Financing". The OECD-DAC definitions of ODA and OOFs are a good starting point, but they need to be reformed to clarify and to take into account all forms of finances aimed to support development.<sup>16</sup> In monetary policy instruments we have M0, M1, M2, and M3. In development finance, we can define DF1, DF2, DF3 and DF4 similarly, according to (a) the extent of "concessionality" with a consistent benchmark market interest rate, (b) the source (the extent of "official" or state involvement), (c) the destination countries (low- or middle- income developing countries), and (d) objectives of the financing (for economic development and welfare). These ideas were also eluted in several pervious studies including Brautigam 2011, Center for Global Development (China-aid database 2013), OECD-DAC 2014,

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<sup>13</sup> Freeman, 2012.

<sup>14</sup> William Hynes and Simon Scott, "The Evolution of Official Development Assistance: Achievements, Criticism and a Way Forward," *OECD Development Co-operation Working Papers*, No. 12, OECD Publishing (2013).

<sup>15</sup> OECD-DAC, 2014. *Modernizing the DAC's Development Finance Statistics*, DOD/DAC(2014)9, Developing Cooperation Directorate submitted for DAC Senior Level Meeting on 3-4 March 2014 at OECD Conference Center in Paris, 17 Feb, 2014.

<sup>16</sup> There is a heated debate on the calculation of concessional loans – whether face value (OECD-DAC approach) or budget subsidies (China's approach) should be used, or what interest rate should be used as the discount rate. Li Ruogu claims that "all China's loans for development [from the EXIM Bank of China] are concessional in character" if a "proper" benchmark interest rate can be used for CIRR / discount rate. (Li 2007).

Boussichas and Guillaumont 2014, and other studies. A new set of clearer definitions would facilitate transparency, accountability and selectivity by development partners, encourage SWFs to invest in developing countries, as well as facilitate Public-Private Partnerships (PPP) in developing country infrastructure. In particular, Sovereign Wealth Funds in the world are managing huge amount of assets, in excess of \$7 trillion US dollars (SWF Institute), and many of them are seeking higher risk-adjusted returns.

Concretely, we propose to re-define development finance (DF) in the following ways, for instance,

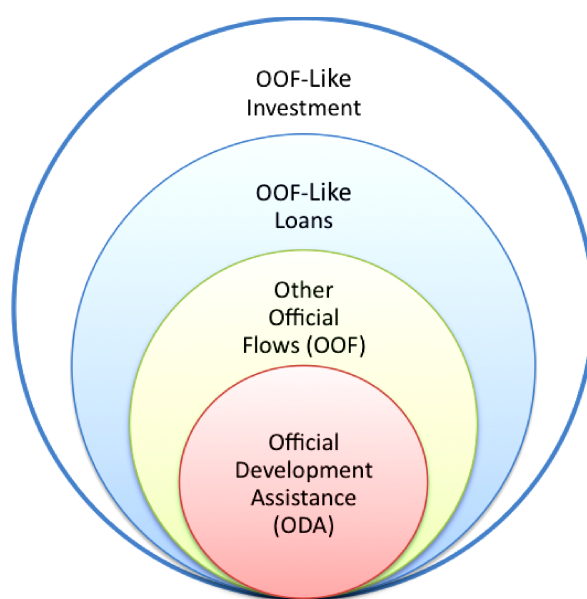
- DF1 = Official Development Assistance (ODA, as defined by OECD-DAC with reforms as proposed in the 16 December 2014 decision);
- DF2= DF1+Other Official Flows (OOF) including preferential export credit;
- DF3= DF2+OOF-like loans [non-concessional loans from State entities for development but at market interest rate];
- DF4=DF3+OOF-like investment [equity investment by SWFs or development projects supported by State guarantees, or public-private partnership (PPP) projects for public infrastructure, which provide Global Public Goods for sustainable development]. This latter concept will be consistent with the Total Official Sustainable Development (TOSD) proposed by OECD-DAC.

Special attention should be paid to the non-monetary development assistance provided by Southern partners, such as “turnkey projects”, “real sector (barter) exchanges”, and “resource financed infrastructure” (RFI). In our view, the RFI concept can help connect resource extraction with the construction of “bottleneck releasing” infrastructure – two otherwise separated supply chains, thereby reducing transaction cost and making public infrastructure more attractive to the private sector. “An RFI credit may be the **least-cost option** for obtaining essential infrastructure that cannot generate sufficient revenue to support a project finance transaction”. (Lin and Wang in World Bank 2014a, page 76) <sup>17</sup>Some element of SSDC cannot be monetized, such as number of volunteers and medical doctors, separate categories can be established for those. The Illustration below roughly summarizes our ideas.

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<sup>17</sup> The RFI model allows the exchange of one resource for another productive asset in the long term, and thus support real sector diversification without relying completely on the financial market. In addition, it reduces the leakages due to resource rents /revenues being transferred out of the developing country, or capital flight. This “real-for-real” exchange could help overcome severe financial and governance constraints suffered by low-income but resource-rich countries. (Lin and Wang in World Bank 2014a, page 76). Available at <http://elibrary.worldbank.org/doi/abs/10.1596/978-1-4648-0239-3>

## Illustration 2. Proposal for an expansion of the definition of Development Financing



Source: authors. The circles correspond to  $DF1 = ODA$ ;  $DF2 = ODA + OOF$ ;  $DF3 = DF2 + \text{OOF-like loans}$ ; and  $DF4 = \text{OOF-like investment}$ . Another category may be added separately for SSDC that cannot be monetized.

### **Global Governance Matters**

The availability of international development finances, however, also depends on the institutional arrangements, the channels of financing and coordination, and ultimately, the global environment and the structure of global governance. In other words, it depends on whether the SSDC or DF are welcomed, whether and how much the voice of emerging market partners are being included, and whether they are invited to the table for shaping the global “rules of the road”.

**The availability of China’s Development Finances depends on many factors, so a linear extrapolation is not appropriate. A better method is to use China’s projected growth rate in the next 10 years and use the proportion of DF/GNI as a guide to make projections** (as shown in our box 1). The following source may provide a clue on the availability of China sourced development financing (a broad definition). According to one of the studies by staff of the People’s Bank of China, the estimated outward investment in infrastructure “will not be less than US\$100 billion annually (that is RMB630 billion yuan)” (Jin 2012). “Considering the increased potentials, China could well afford to have outward investment of RMB600 billion to RMB1000 billion yuan per year. Assume that this amount consists of 95% in loans and equity investment, and 5% in grant, this means that China’s Ministry of Finance will need to budget RMB30 billion to 50 billion yuan for international aid. This number is only about 0.3 % to 0.5% of China’s 2011 fiscal revenue, accounting for less than 0.1 % of GDP, much lower than the fiscal burden of the Marshall Plan (to the US Treasury)”. (Jin Zhongxia 2012, page 62)

In our view, as China's GNI and fiscal revenue continue to grow, the amount of DF will continue to grow even if its % of DF/ GNI is maintained at the present level of 0.15%, which is likely to grow. However, this depends on the global governance system. Two possible trends are emerging:

1. **Multilateralism.** China and southern partners may move toward more multilateral and trilateral collaboration with the World Bank and other established regional development banks. This can provide more learning opportunities for emerging partners, enhance triangular knowledge exchange, and hopefully, improve the effectiveness of both the established and emerging donors. For example, recently China Eximbank and CDB have both signed MOUs with the World Bank (September 2013), to conduct trilateral collaboration. Concrete "parallel projects" are being prepared in Africa and moving forward. China has also contributed significant amount to the Africa Development Bank, Development Bank of Southern Africa (DBSA) and Inter-America Development Bank (IDB). In addition, China has long been cooperating with FAO on trilateral cooperation. There are however obstacles on this path, for instance, the issues related to enhancing the voice of Southern partners in the IMF and the World Bank have not been resolved.
2. **New Groupings with plural-lateral features.** In response to this gridlock in reforming the global governance structure,<sup>18</sup> new groupings have emerged and will continue to emerge outside the "established" international development financial organizations. For example, Trans-Pacific Partnership (TPP) negotiations and ASEAN plus 6 negotiations are moving in parallel. BRICS countries have made concrete progress and funding commitment to establish a "New Development Bank" (formerly, BRICS Bank) with \$50 billion initial capital commitment, and a Contingency Reserve Arrangement (CRA) with initial commitment of \$100 billion (Fortaleza Declaration<sup>19</sup> by the BRICS leaders, July 2014). In addition, Chinese leader Xi Jinping has in the APEC summit proposed a new vision to build "one silk road economic belt and a maritime silk road" (One Belt One Road, in short), which are supported by over 50 countries along the proposed route (Annex 2). As concrete financing mechanisms, The Asian Infrastructure Investment Bank (AIIB), and a Silk Road Fund will be established. Twenty-four (24) countries have signed the agreement to be the founding member of the AIIB with New Zealand joined on 4 January 2015. Premier Li Keqiang has signed several agreements with Eastern European countries to jointly develop High-Speed Rails (HSR), and negotiations with some 17 countries are under way. There is also an additional proposal to establish a Global Structural Transformation Fund, which will help funding the transformation process in Africa (Lin and Wang May 2013 for the United Nations "Post 2015 High Level Panel").

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<sup>18</sup> The shares of emerging market economies in the IMF have not been increased, after many years of discussing. Now "Denying Brazil, Russia, India, China, and South Africa (the BRICS) a share of voting in the International Monetary Fund (IMF) in line with its weight in the global economy has finally backfired. At the 6<sup>th</sup> BRICS Summit, held in Fortaleza, Brazil, in July 2014, several pending issues for the two new BRICS institutions - the Contingency Reserve Arrangement (CRA) and the BRICS development bank - seem to be resolved, with the latter to operationalise in 2016." (Hou, Zhenbo, ODI, 2014)

<sup>19</sup> <http://brics6.itamaraty.gov.br/media2/press-releases/214-sixth-brics-summit-fortaleza-declaration>

What are the rationales behind the grand vision of “One Belt One Road”? In our view,

The “One belt one road” vision reflects China’s ideas and experience toward economic development – Openness and reform, “in order to get rich you need to build roads first”, and “building infrastructure as a countercyclical measure to boost aggregate demand and long term productivity”. China has used expansionary monetary and fiscal and investment policy to overcome the contractionary pressure during two crises – the 1998 Asian financial crisis, and the 2008-09 global financial crises and in the aftermath of the “Great Recession”. Now, after six years of resistance, the idea of building infrastructure as a countercyclical measure in a low interest environment is well accepted (see Larry Summers 2014) and recommended by IMF (IMF 2014).

The “One belt one road” vision reflects the demand from relevant countries for releasing infrastructure bottlenecks and improving connectivity with large markets in China and Europe, as well as the need from China’s own development and security. As explained earlier, China and other developing countries are teammates in climbing the same mountain of structural transformation—one country cannot climb to the top without others doing equally well. Other developing countries are constrained by inadequate capacity, tacit knowledge and financing resources, China is facing constraints in energy, land, skilled labor and the environment. Working together they can complement each other and achieve win-win solutions.

The “one belt one road” vision reflects Chinese leaders’ vision for “peaceful co-existence with differences” and commitments for providing global public goods, peace and security, and sustainability. Deeply rooted in China’s thousand-year history and civilization, there is a firm belief among Chinese people for “one should not impose on others what he himself does not desire” (“己所不欲，勿施于人”)<sup>20</sup>. This principle has been consistently implemented by China’s foreign aid in the last 50 years, and will be further modernized and strengthened by the current generation of leaders, that “the Pacific Ocean is large enough” to allow the emergence of many developing nations peacefully, and that China’s rising is conducive to world development and peace.

### ***Issues and challenges in China’s SSDC***

The first challenge is the lack of transparency in China’s South-South Development Cooperation projects – official data at the project level is not readily available. The publication of the “*White Paper on China’s Foreign Aid*” (State Council 2011, and 2014) and “*China Africa Economic and Trade Cooperation 2013*” (MOFCOM 2013), is a progress in the right direction. The government needs to be more open and pro-active in providing more accurate data, making laws and regulations clear on development cooperation. This would be favorable to increased accountability to tax payers in China, as well as to the international development community. China does not have a legal

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<sup>20</sup>“己所不欲，勿施於人。” can be translated as “What you do not wish for yourself, do not do to others.”

Zi Gong (a disciple of Confucius) asked: “Is there any one word that could guide a person throughout life?” The Master replied: “How about ‘shu’ [reciprocity]: never impose on others what you would not choose for yourself?” --Confucius, *Analects* XV.24.

framework governing foreign aid, nor does it have an independent aid agency. So it is difficult for Chinese citizens to participate in the decision-making process on foreign aid, for Chinese officials to be held accountable, and for international bodies and governments to seek collaboration on international development or financing issues. In our view, drafting China's law on foreign aid and cooperation, and establishing an independent aid agency should be a priority in the policy agenda.

The second concern is about "tied aid" and inadequate technological diffusion and spillover effect. Most of Chinese aid is tied, a practice the members of OECD-DAC agreed to move away from progressively since 1995, since tied aid may increase the cost and reduce efficiency. However, China's own experience indicates that "tied aid" had some advantage of facilitating "learning by doing" and learning by implementing projects, viewing from the learning model discussed in the paper. According to Hausmann, "the tricks of the trade are acquired from experienced senior workers" (Hausmann 2013). There is an academic literature on aid and trade, which found mixed results (Wagner 2003, Lloyd et al 2000, and Morrisay and White 1996). The value of implementing actual projects in learning and development seems to be under-appreciated by economists and the donor community. In the 1980s and 90s most donor financed projects located in China were "tied aid", and Chinese workers and project managers have learned and benefited from them (Wang, Yan 2011). Actually, "learning from aid projects" is one of the reasons why Chinese companies are so competitive in implementing construction projects (see Annex 1).

The third concern is that Chinese aid projects seem to have generated few local employment opportunities. Many African officials are concerned that Chinese workers are displacing local workers. Although data and evidence need to be discussed on a case by case basis, clearly, the indirect employment generation from China-financed economic infrastructure has been under-researched. The IMF finds that "In recent years, China has become the largest single trading partner for Africa and a key investor and provider of aid." And "a 1 percent point increase in China's real domestic fixed asset investment growth has tended to increase Sub-Saharan Africa's export growth rate on average by 0.6 percentage point." (IMF 2013, page 5) Better education and training should be provided to Chinese companies to abide by laws and regulations regard labor and social and the environmental standards. In addition, better training and capacity development programs should be provided to African workers and managers, in order to fulfill the requirement of timely completion of projects showing tangible results.

Not two countries are the same in their economic transformation. China has made some mistakes and paid "high tuition" in the process: for instance, China's strong drive for rapid growth and industrialization is associated with widening rural-urban income disparities and a degrading environment. In March 2007, the former Chinese Premier Wen Jiabao pointed out that **China's growth was "imbalance, inequitable and unsustainable"**. Since then there has been tremendous effort to "rebalance" the economy - reducing its reliance on export, investment and paying more attention to the quality and efficiency of growth. However, making deep transformations and upgrading industries is proven extremely difficult, as reforms often go against the vested interest groups. In this sense African countries need to be selective, to avoid these



mistakes China has made. African governments, NGOs and civil societies can play important roles in providing pressure to “push” development partners including China and Chinese companies to the right directions.

## **6. Conclusion**

Development financing is not a zero-sum game. Addressing the bottlenecks in low-income countries could yield good returns for all stakeholders as well as putting developmental results on the ground. We believe that the post-2015 era will witness a significant structural transformation in most of the low-income countries, if all emerging and established development partners could work together with /in these countries.

To be effective, aid or development cooperation must be in the host country’s own interest and demand-driven. Combining trade, aid and investment –a market based approach- can ensure the alignment of incentives among equal partners, as shown by the successful experiences in many East Asian countries.

China needs to continue to learn to become a better development partner, by listening to the voices from partners and interacting with the governments, NGOs and civil societies. China needs to be more open and transparent in providing accurate data on international development financing and activities. It is our view that “any deals made in the dark are more likely to be revoked or renegotiated by the next government of the client country in the future” (Lin and Wang, World Bank 2014, page 77). The political economy dynamics must be taken into consideration when discussing with the current government of the client country.

The established donors among OECD countries also need to see if China’s approach provides useful lessons to improve the effectiveness of the conventional North-South aid. A recent study by the World Bank (2014) has also reviewed the approach of “Resource for Infrastructure (RFI) deals”, finding this approach to be more effective in advancing the developmental impact “many years ahead of” the conventional North-South approaches. Many African leaders find China’s approach (in RFI) more desirable as it has led to “inexpensive and tangible results” within the time span of 3-4 years, coinciding with the political cycle in a democracy.

In the post- 2015 era, development financing will come less from ODA, but more and more from the Other Official Flows (OOF), OOF-like loans, and OOF-like investment from development banks, SWFs, in emerging economies. Therefore, we propose to expand the definitions of development finances, which could induce more contributions from SWFs and other public or private entities. Our proposal has been influential domestically as well as internationally, as reflected by the recent OECD-DAC decision to introduce a new and broader concept of TOSD, although the details have yet to be worked out.

In a multipolar world, the prospect of South-South Development Cooperation is likely to expand, as shown by the “one belt one road” vision and the establishment of the New Development Bank and

AIIB. However, established donors/ partners need to be more inclusive to enhance the voice of emerging partners, and provide a place “at the table” for these emerging partners. In the post-2015 era the emergence of new multilateral or regional development banks and funds is encouraging, bringing positive energy and momentum to the world economic development arena. In a multipolar world, it seems inevitable to have multipolar development organizations and different plural-lateral and multilateral development banks and funds. Based on some evidence presented above, we are cautiously optimistic that a common ground can be found for partners from the North and the South to work together on “win-win” solutions for sustainable development and world peace.

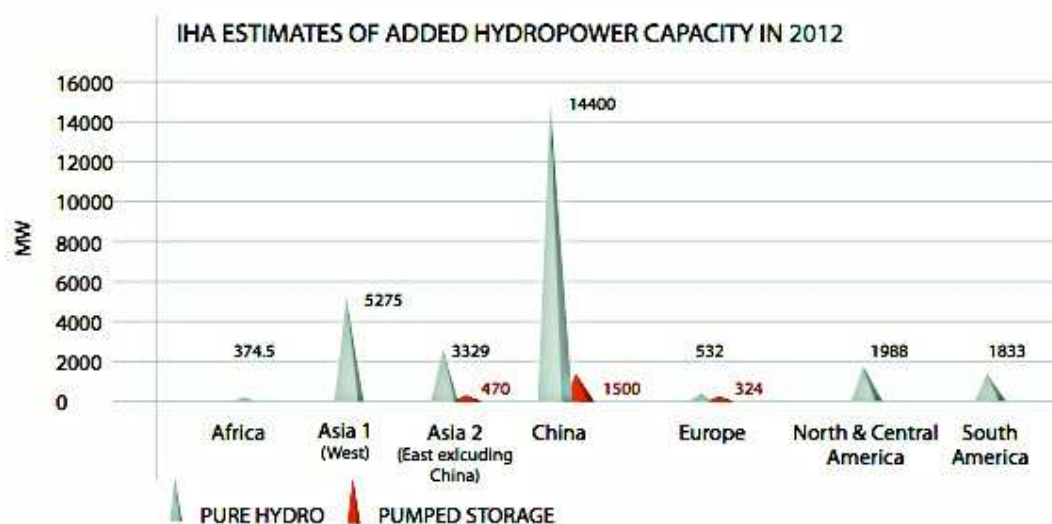
## Annex 1: China's Comparative Advantage in Renewable Energy-- Hydro Power

China is currently the world's largest producer of renewable energy, and hydroelectricity is its dominant clean energy source. Currently over 281.5 GW of hydroelectric power is installed domestically, making it the largest hydroelectricity producing country in the world. Just six percent of China's electricity came from hydroelectric sources. The government has signaled its intentions to increase hydroelectric capacity to 290 GW by 2015. (Source: KPMG "Infrastructure in China: Sustaining quality growth" January 2014. )

In 2013 alone, China's pure hydro installed capacity increased by 28.8 GW to reach 260 GW, with a further 1.2 GW of pumped storage commissioned to reach a total of 21.5 GW. China now has more installed pure hydropower capacity than the next three countries combined (Brazil, USA, and Canada). The total 2013 investment in hydropower of RMB 124.6 bn (\$20bn) was roughly at the same level as for the previous year. (Source: IHA 2013, IHA Hydropower Report. Country profile: China) (See figure A1)

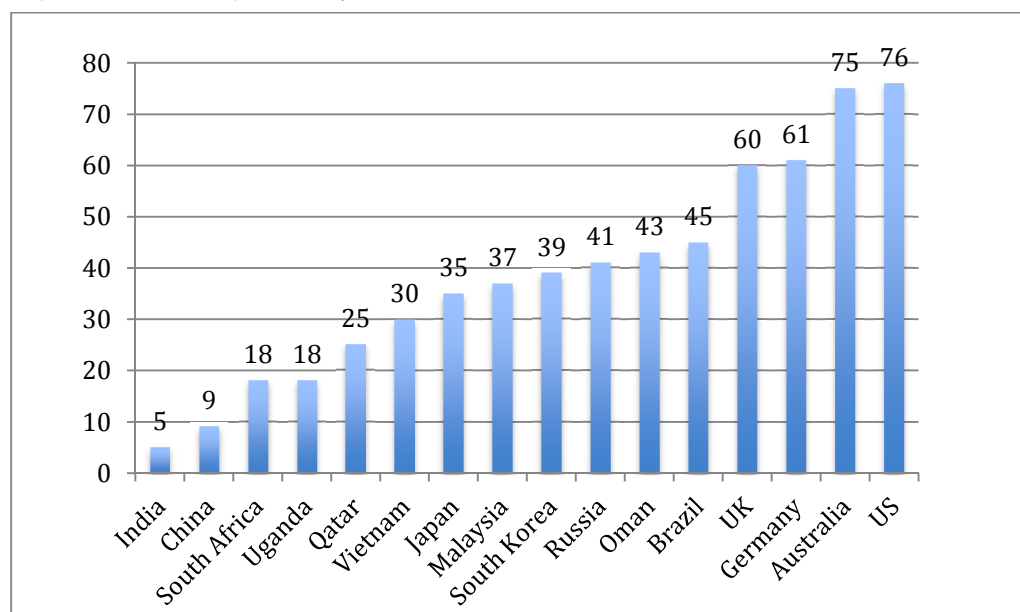
We further argue that China has the **demonstrated comparative advantage (DCA)** in exporting construction services in the hydropower sector, including design, engineering and implementation, based on the following evidence: 1) existing domestic capacity of hydropower, build by Chinese companies, 2) lower cost of labor and foreman (see Figure A2), 3) ability to bring financiers to these projects, and 4) large scale hydropower projects that have been implemented in Africa and the rest of the world. According to Lin and Wang 2013, China has contributed to 9 gigawatts of electricity generating power, and about 32 power projects are being discussed or constructed by Chinese companies (Lin and Wang 2013 p. xx).

**Figure A1. IHA Estimates of Added Hydropower Capacity in 2012.**



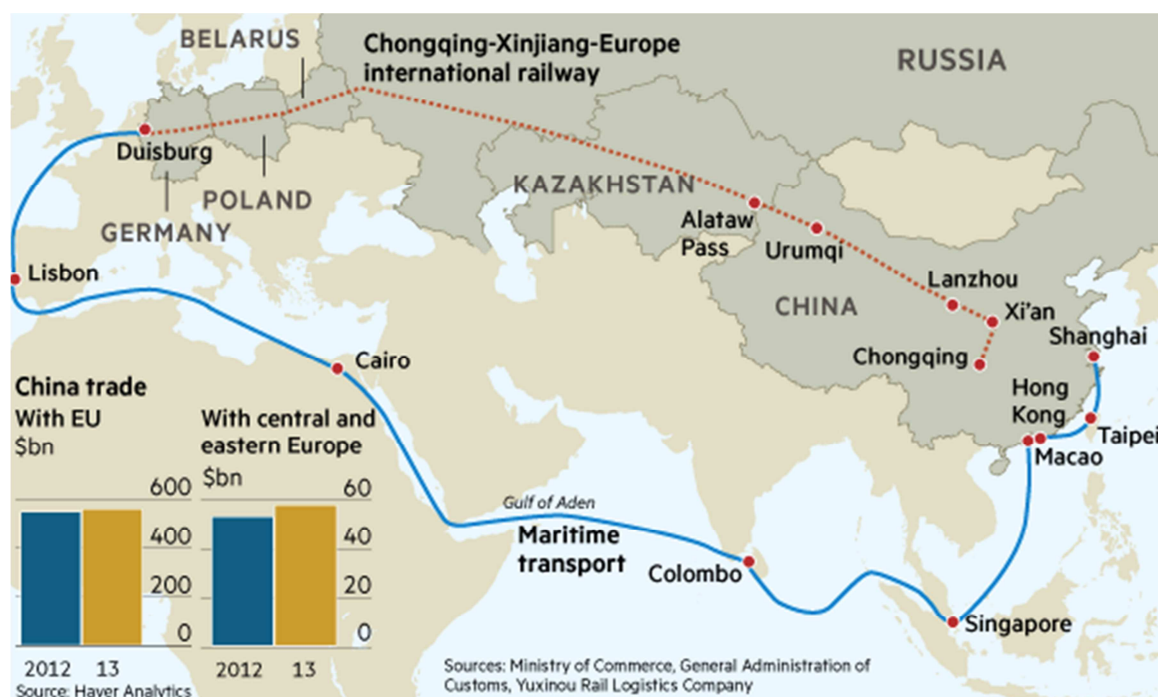
**Source:** International Hydropower Association (IHA) 2013, IHA Hydropower Report. P.1.

**Figure A2. Average Hourly Labor Cost in Construction, for site foreman, PPP 2013**



Source: based on data from International construction cost survey 2013.

**Annex 2: Map of the proposed “One Belt One Road”,**



**Source:** Shawn Donnan, “Geopolitics cast shadow over New Silk Road,” Financial Times, October 17 2014. See also Shannon Tiezzi, “China’s ‘New Silk Road’ Vision Revealed”, The Diplomat, May 09, 2014. <http://thediplomat.com/2014/05/chinas-new-silk-road-vision-revealed/>

## References

- Acemoglu, D., S. Johnson, and J. A. Robinson. (2005). "Institutions as the Fundamental Cause of Long-Run Growth." In *Handbook of Economic Growth*, vol. 1A, ed. P. Aghion and S. N. Durlauf, 385–472. Amsterdam: Elsevier.
- Akamatsu, Kaname. (1962). "A Historical Pattern of Economic Growth in Developing Countries." *The Developing Economies* 1(s1):3–25, March –August.
- Akramov, Kamiljon T. (2012). *Foreign Aid Allocation, Governance, and Economic Growth*, International Food Policy Research Institute, Washington DC.
- Arndt, Channing, Sam Jones and Finn Tarp. (2010). "Aid, Growth and Development: Have we come full circle?", UNU-WIDER Working Paper no. 2010/96.
- Arrow, Kenneth J. 1962. "The Economic Implications of Learning by Doing," *Review of Economic Studies*. 29/3: 155–173.
- Bahar, Dany; Ricardo Hausmann, and Cesar A. Hidalgo. (2013). "Neighbors and the Evolution of the Comparative Advantage of Nations: Evidence of International Knowledge Diffusion?" Faculty working paper RWP13-025, August 2013.
- Boussichas, Matthieu and Patrick Guillaumont. 2014. "Measuring Official Development Assistance. Why and how to change", FERDI Policy Brief, August 2014.
- BRICS Summit, 2014. The Fortaleza declaration. <http://brics6.itamaraty.gov.br/media2/press-releases/214-sixth-brics-summit-fortaleza-declaration>
- Bräutigam, Deborah. (2009). *The Dragon's Gift: The Real Story of China in Africa*. Oxford University Press: New York.
- Bräutigam, Deborah. (2011). "Aid with Chinese Characteristics: Chinese Foreign Aid and Development Finance meet the OECD-DAC Aid Regime", *Journal of International Development*, 2011.
- Bräutigam, D. and Tang, X. (2013). "Going Global in Groups: Structural Transformation and China's Special Economic Zones Overseas." Forthcoming in *World Development*.
- Burnside, C., and D. Dollar (2000). 'Aid, Policies, and Growth', *American Economic Review*, 90(4): 847-68.
- Chang, H. (2003). *Kicking Away the Ladder: Development Strategy in Historical Perspective*. London: Anthem Press.
- Chandra, V., J.Y. Lin, and Y. Wang, (2013). "Leading Dragon Phenomenon: New Opportunities for Catch-up in Low-Income Countries," *Asian Development Review*, vol. 30, no. 1: 52-84.
- Chen, Chuan, (2013). *South-South Cooperation in Infrastructure in Sub-Saharan Africa*, Working paper for ECOSOC, United Nations, 2013
- Collier, P., and A. Hoeffler (2004). 'Aid, Policy and Growth in Post-conflict Societies', *European Economic Review*, 48(5): 1125-45.
- Dinh, Hinh, Vincent Palmade, Vandana Chandra, and Frances Cossar. (2012). *Light Manufacturing in Africa: Targeted Policies to Enhance Private Investment and Create Jobs*. The World Bank Publications. Washington DC.

- Easterly, W. (2003). 'Can Foreign Aid Buy Growth?', *Journal of Economic Perspectives*, 17(3): 23-48.
- Easterly, William, Ross Levine, David Roodman. (2003). "New data, New Doubts: A Comment on Burnside and Dollar's Aid, Policies and Growth (2000)" NBER Working paper no. 9846.
- Foster, Vivien, and Cecillia Briceno- Garmendia, (2010), *Africa's Infrastructure: A time for transformation*, The World Bank, Washington DC, 2010
- Freeman, Carla (2012). "From 'Blood Transfusion' to 'Harmonious Development:' The Political Economy of Fiscal Allocations to China's Ethnic Regions," *Journal of Current Chinese Affairs* 41(2012), 22-23.
- Gerschenkron, A. (1962). *Economic Backwardness in Historical Perspective: A Book of Essays*. Cambridge, MA: Belknap Press of Harvard University Press.
- Greenwald, B. and J. E. Stiglitz, (2013). "Industrial Policies, the Creation of a Learning Society, and Economic Development," in J. E. Stiglitz and J. Y. Lin (eds), pp. 43-71.
- Hausmann, Ricardo. (2013). "The Tacit Knowledge Economy." Project Syndicate, October 30, 2013.
- Hausmann, Ricardo, and Bailey Klinger. (2006) "Structural Transformation and Patterns of Comparative Advantage in the Product Space." Center for International Development Working Paper no. 128. Harvard University. August.
- Hynes, William and Simon Scott, (2013) "The Evolution of Official Development Assistance: Achievements, Criticism and a Way Forward," *OECD Development Co-operation Working Papers*, No. 12, OECD Publishing (2013),
- IMF (2013). "Regional Economic Outlook: Sub-Saharan Africa –Keeping the Pace" October, 2013, page 5.
- IMF (2014). *World Economic Outlook*, October, 2014.
- Jin, Zhongxia, *China's Marshall Plan – a discussion on China's Overseas Infrastructure Investment Strategy*, International Economic Review (in Chinese), [year??]
- Kitano, Naohiro, and Yukinori Harada. 2014. "Estimating China's Foreign Aid 2001-2013", JICA Research Institute Working Paper No. 78. Comparative Study on Development Cooperation Strategies: Focusing on G20 Emerging Economies. June.
- Kuznets, S. (1966). *Modern Economic Growth: Rate, Structure and Spread*. New Haven, CT: Yale University Press.
- Li, Keqiang. 2014. "Bring About a Better Future for China-Africa Cooperation," (speech, AU Conference Center, Addis Ababa, Ethiopia, May 5, 2014), Foreign Ministry People's Republic of China, [http://www.fmprc.gov.cn/mfa\\_eng/topics\\_665678/lkqzlcfasebyfmrlyaglkny/t1154397.shtml](http://www.fmprc.gov.cn/mfa_eng/topics_665678/lkqzlcfasebyfmrlyaglkny/t1154397.shtml).
- Li, Ruogu. 2007. "A Proper Understanding of Debt Sustainability of Developing Countries," *World Economics and Politics* 4(2007), 72.
- Lin, J. Y. (2010). "New Structural Economics: A Framework for Rethinking Development." Policy Research Working Paper 5197, World Bank, Washington, DC.
- . (2011). "New Structural Economics: A Framework for Rethinking Development," *World Bank Research Observer*, 26 (2), Sep 2011: 193-221.

- . (2012a). *Demystifying the Chinese Economy*. Cambridge: Cambridge University Press.
- . (2012b). *The Quest for Prosperity: How Developing Economies Can Take Off*, Princeton, NJ: Princeton University Press.
- . (2012c). *New Structural Economics: A Framework for Rethinking Development and Policy*, Washington, DC: World Bank.
- . (2012d). "From Flying Geese to Leading Dragons: New Opportunities and Strategies for Structural Transformation in Developing Countries," *Global Policy*, Vol. 3, issue 4, November 2012: 397-409.
- Lin, Justin Yifu. (2013). *Against the Consensus: Reflections on the Great Recession*. Cambridge University Press. Cambridge, New York. 2013.
- Lin, J. Y., and C. Monga. (2011). "Growth Identification and Facilitation: The Role of the State in the Dynamics of Structural Change," *Development Policy Review*, Vol. 29, No. 3, (May 2011): 264-290.
- Lin, Justin Yifu and Yan Wang, (2013). "Beyond the Marshall Plan: A Global Structural Transformation Fund", paper for the United Nations Post-2015 High Level Panel on development agenda. May 22, 2013. Available at [http://www.post2015hlp.org/wp-content/uploads/2013/05/Lin-Wang\\_Beyond-the-Marshall-Plan-A-Global-Structural-Transformation-Fund.pdf](http://www.post2015hlp.org/wp-content/uploads/2013/05/Lin-Wang_Beyond-the-Marshall-Plan-A-Global-Structural-Transformation-Fund.pdf)
- Lin, Justin and Yan Wang. (2014) "China-Africa Cooperation in Structural Transformation: Ideas, Opportunities and Finances", UNU-WIDER working paper 2014/046. See [http://www.wider.unu.edu/publications/working-papers/2014/en\\_GB/wp2014-046/](http://www.wider.unu.edu/publications/working-papers/2014/en_GB/wp2014-046/)
- Lin, Justin and Yan Wang. (forthcoming 2015) "China and Africa Cooperation in Structural Transformation." A chapter in Justin Lin and Celestin Monga, eds. *Handbook of Africa and Economics*, forthcoming, Oxford University Press. 2014.
- Lloyd, Tim, Mark McGillivray, Oliver Morrissey, and Robert Osei. (2000). "Does Aid Create Trade? An Investigation for European Donors and African Recipients," *European Journal of Development Research*, Vol. 12, No. 1, 2000, pp. 107–123.
- Maddison, A. (2001). *The World Economy: A Millennial Perspective*. Paris: OECD Development Centre.
- . (2007). *Chinese Economic Performance in the Long Run—Second Edition, Revised and Updated: 960–2030 AD*. Paris: OECD Development Centre.
- Martens, Bertin, Uwe Mummert, Peter Murrell and Paul Seabright. (2002). *The Institutional Economics of Foreign Aid*. Cambridge, U.K.: New York: Cambridge University Press.
- MOFA (Ministry of Foreign Affairs). 2006. "中国的非洲政策" ("Zhongguo de fei zhou zhengce," "China's African Policy"), January 2006, accessed July 20, 2014, [http://www.fmprc.gov.cn/mfa\\_chn/ziliao\\_611306/tytj\\_611312/zcwj\\_611316/t230612.shtml](http://www.fmprc.gov.cn/mfa_chn/ziliao_611306/tytj_611312/zcwj_611316/t230612.shtml).
- MOFCOM, (2013). "China Africa Economic and Trade Cooperation 2013", published in August 2013, see <http://english.mofcom.gov.cn/article/newsrelease/press/201309/20130900285772.shtml>
- Monga, C., (2013). "The Mechanics of Job Creation: Seizing the New Dividends of Globalization," *Policy Research Working Paper No. 6661*, World Bank.
- Morrissey, Oliver and Howard White, (1996). "Evaluating the Concessionality of Tied Aid," The Manchester School, 1996.
- North, D. (1981). *Structure and Change in Economic History*. New York: W.W. Norton.



- OECD-DAC. 2014a. High Level Meeting Communiqué, 16 December 2014. See <http://www.oecd.org/dac/OECD%20DAC%20HLM%20Communique.pdf>
- OECD-DAC, 2014b. *Modernizing the DAC's Development Finance Statistics*, DOD/DAC(2014)9, Developing Cooperation Directorate submitted for DAC Senior Level Meeting on 3-4 March 2014 at OECD Conference Center in Paris, 17 Feb, 2014
- Rajan, R.G., and A. Subramanian. (2008). 'Aid and Growth: What Does the Cross-Country Evidence Really Show?', *The Review of Economics and Statistics*, 90(4): 643-65.
- Ravallion, Martin and Shaohua Chen, (2007), "China's (Uneven) Progress Against Poverty." *Journal of Development Economics*, 82(1): 1-42.
- Rodrik, Dani. 2010. Globalization, Structural Change and Productivity Growth. NBER Working Paper No. 17143.
- Roodman, D. (2007). 'The Anarchy of Numbers: Aid, Development, and Cross-Country Empirics', *World Bank Economic Review*, 21(2): 255-77.
- Shen, Xiaofang, (2013). *Private Chinese Investment in Africa: Myths and Realities*, World Bank Policy Research Working paper no 6311. Washington, DC, 2013.
- Sheng, Andrew. (2013). "Outlook for Global Development Finance: Excess or Shortage?" paper for the United Nations Post 2015 HLP on Development Agenda. Available online.
- Solow, R. M., (1957). "Technical Change and the Aggregate Production Function," *The Review of Economics and Statistics*, vol. 39, no. 3, pp. 312-320.
- State Council Information Office. (2011). "China's Foreign Aid", White Paper, Beijing, April 2011.
- State Council Information Office. (2014). "China's Foreign Aid (2010-2012)", White Paper, Beijing, July 2014.
- Stiglitz, J. E. (1996). "Some Lessons from the East Asian Miracle," *World Bank Research Observer*, 11(2), August 1996, pp. 151-177.
- Strange, Austin, Bradley Parks, Michael J. Tierney, Andreas Fuchs, Axel Dreher, and Vijaya Ramachandran. (2013). *China's Development Finance to Africa: A Media-Based Approach to Data Collection*, Center for Global Development Working Paper 323, April 2013.
- Van der Hoeven, Rolph. (2012). "Development Aid and Employment", UNU-WIDER working paper No. 2012/17.
- Wagner, Don. (2003). "Aid and Trade—An Empirical Study," *Journal of the Japanese and International Economies*, Vol. 17, No. 2, 2003, pp. 153–173.
- Wang, Yan, (2011). Development Partnership, in *Economic Transformation and Poverty Reduction: How it happened in China, helping it happen in Africa*, China-OECD/DAC Study Group, 2011. Available at <http://www.oecd.org/development/povertyreduction/49528657.pdf>
- Weisbrod, Aaron and John Whalley. (2011). "The Contribution of Chinese FDI to Africa's Pre-Crisis Growth Surge," NBER Working Paper No. 17544, October 2011.
- Wolf, Charles, Jr., Xiao Wang, Eric Warner. (2013). *China's Foreign Aid and Government –Sponsored Investment Activities: Scale, Content, Destinations, and Implications*. Rand National Defense Research Institute.



World Bank. (2011) "Chinese investments in Special Economic Zones in Africa: Progress, Challenges and Lessons Learned," Final Report, Washington, DC, January.

\_\_\_\_\_, (2012). *Chinese FDI in Ethiopia*. A World Bank Survey, 2012.

World Bank. (2013). "Financing for Development Post 2015". Staff report for the Post-2015 agenda, October 2013.

World Bank. 2014. *Resource Financed Infrastructure: A discussion on a new form of infrastructure financing*. World Bank, Washington DC. Available at <http://elibrary.worldbank.org/doi/abs/10.1596/978-1-4648-0239-3>

Xu, Jiajun and Richard Carey. 2014. "China's Development Finance: What Issues for Reporting and Monitoring Systems?" IDS Bulletin Volume 45 no. 4, July 2014.

Zeng, Douglas Z. (2010), *Building Engines for Growth and Competitiveness in China: Experience with Special Economic Zones and Industrial Clusters*. Washington, DC: World Bank.



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