Explaining NGO-State Wage Differentials in Afghanistan: Empirical Findings and New Theoretical Models with Policy Implications in General Equilibrium

Dost, Ahmad Najim and Khan, Haider

University of Denver, University of Denver

15 September 2015

Explaining NGO-State Wage Differentials in Afghanistan:

Empirical Findings and New Theoretical Models with Policy Implications in General Equilibrium

Ahmad Najim Dost*
Josef Korbel School of International Studies
University of Denver
adost@du.edu

And

Haider A. Khan
John Evans Distinguished University Professor
Josef Korbel School of International Studies
University of Denver
Denver, CO 80208
hkhan@du.edu

September 2015

***Corresponding author**

I. ABSTRACT

In this paper we present some novel findings on wage differentials between state and NGO (Non Government Organization) employees in Afghanistan. We find that high wages offered by NGOs, as high as 35 times those offered to civil servants, have strong distortionary effects on the local labor market and threaten the future fiscal sustainability of the state within a partial equilibrium setting. To complete the argument at a theoretical level, we also present a general equilibrium model with multiple equilibria that captures the deeper implications of the empirical finding. Among the most significant features of the model is the fact that the wage-gap feature can become permanent and lock the economy in a suboptimal social equilibrium.

In light of our empirical finding and theoretical model consistent with the empirics we ask what the appropriate policy measures are. We consider, short of the extreme and implausible case of shutting down the state sector, three recommendations to address the issue and assess the strengths and weaknesses of each. Firstly, the host country could cap NGO wages. This, however, may be the hardest for the NGOs to adhere to given their internal salary scale policies and the need to maintain horizontal and vertical equity. Alternatively, government wages could be raised by a factor to arrive at a less distortionary gap. This would require substantial financial resources, which lie beyond the capacity of the state and the aid community. Thirdly, the NGOs could make contributions proportional to the size of the wage gap to a stabilization fund, earmarked to support future wages and redress current distortions. We argue that this qualifies as the most desirable policy choice given the conditions on the ground.

II. INTRODUCTION

Since the fall of the Taliban in 2001, billions of dollars have been spent in Afghanistan through development assistance, yet there is very little evidence of positive change in the country. For example, the latest National Human Development Report indicated that Afghanistan had moved up only slightly in Human Development Index (HDI), from the 173rd country in 2004 to the 169th country in 2013. Similarly, a 2008 Oxfam International report described aid in Afghanistan as "slow, wasteful, ineffective or uncoordinated". Numerous recent reports by the Office of Special Inspector General for Afghanistan Reconstruction (SIGAR) revealed that tens of billions of dollars have been unaccounted for in the Afghanistan reconstruction efforts.

Although the performance of development assistance may be evaluated in a number of ways, this paper has a narrow and focused scope. Specifically, it is an effort to analyze and propose workable solutions to "one of the most critical policy issues" (Pritchett 2008) facing Afghanistan during the current decade, namely how to improve long-term aid effectiveness, focusing on NGO-state wage differentials. Given this premise, this paper aims at addressing the following three questions:

1. What are the current levels of NGO-state wage differentials in Afghanistan?
2. What are some of the distortionary effects of the wage gap, especially on the domestic labor market and future fiscal capacity of the state, at a partial- and general equilibrium level?
3. What can be done to minimize the distortionary effects of the wage gap, especially if the solution is supposed to be technically sound, administratively feasible and politically supportable?

To achieve this end, we begin with a brief discussion of the service delivery in the post-Taliban era of Afghanistan. In section IV, we discuss the problem definition and the methodology used in this research to analyze the issue. In section V, we discuss the key findings of the research, and finally present the recommendations in section VI.

III. BACKGROUND

Afghanistan's modern history has been characterized by invasions, wars and civil and political unrest. The last three decades of war have especially left damaging blows to the country's autonomy, legitimacy and capacity, not only shattering its physical infrastructure and depleting it of its human capital, but also significantly destroying its social and institutional capacity to the level that the state is left too weak to perform its most basic core functions (Skocpol 1985). Afghanistan dropped to 5th least developed country in the world, with higher than 40% unemployment rate, 43 years life expectancy, less than 30% of its citizens with access to clean water, and greater than 30% living in absolute poverty (NHDR 2007).

GDP growth has been quite high, starting at a double-digit rate of almost 27% right after the fall of the Taliban and ending the year 2014 also in double digit growth rate. The high growth rates may be explained by the post-conflict aid effect, with figures of foreign aid reaching as high as almost half of GDP or three times the central government expenditure. The gradually declining rates of growth may be pointing to the start of aid fatigue after a decade of heavy reliance on aid inflows. However, GDP *levels* are one of the lowest in the world, even after adjusting for purchasing power parity. Afghanistan has also suffered from one of the highest levels of inflation in the region.

Before the events of 9/11 and US invasion of Afghanistan, the NGO and donor community were active both inside and outside of Afghanistan, trying to help the poor and the disadvantaged through humanitarian services such as those delivered in the numerous refugee camps in Pakistan. The hope at that time was that once Afghanistan was secure and stable, the government would be able to help its war-strained population, and provide jobs and the means of normal living. Following the Bonn Agreement of December 2001, millions of Afghan refugees from neighboring countries returned home, mostly through the UNHCR repatriation programs. With their return came not only NGOs previously operating outside the country but also a whole range of new actors at the local, international and multinational levels. For example, according to the Agency Coordinating Body for Afghan Relief (ACBAR), the number of registered NGOs increased from 280 in 2002 to 1,400 in 2008 (only about 350 of which have voluntarily registered with different coordinating bodies, the remaining being registered with the Ministry of Interior only). Since then, billions of dollars have been pledged, not all of which have been committed and at times not all of the committed moneys have actually been disbursed. Of the actual amounts disbursed, very little has been put to productive use given low absorption capacity and enormous opportunity for corruption.

For example, at local level, it seems like "starting a new NGO is like opening up a new business" and a way to generate employment for oneself and one's close family and friends in addition to many other ways of funds embezzlement (Interviewee No.15). International NGOs are suffering from an urgency "to do something" given the crisis at hand and their timed grants. As the end of the fiscal year approaches, the NGOs "will do anything to make sure that the grant money is spent before the deadline" (Ibid).

Multinationals lie on the other extreme – their intricate long term plans seem too neat to be feasibly implemented and their goals are rarely met within the set time frame. As noted by William Easterly (2005, p.11), perhaps the NGOs are only cows, but are often treated as though they were racehorses. Ironically, very little has been learned from past failures. More of the same is being done with superficial goals and performance measures without taking a pause and reflecting on the past performance.

To their credit, during this period NGOs have been playing a more vital role in implementing projects around the country than the government for a variety of reasons. The most important reasons being the government's lack of capacity to deliver services and the NGOs' increased mobility and flexibility for efficient service delivery. They have also been better able to attract a more qualified pool of workforce by offering much higher wages than the government. Since most foreign aid has been channeled through NGOs, the state and NGOs find themselves in a competing environment, not only competing for financial resources, but also for scarce human resources and political legitimacy. For example, in 2004-2005 the External Budget, which bypasses the government, accounted for about 75% of all assistance. While a lot of such "off-budget" support is not unusual in early post conflict situations, it has enormous negative consequences for state capacity and legitimacy (Nixon 2007).

IV. METHODOLOGY

We use both empirical field work approach and a rigorous theoretical modeling approach. Empirically, the difficulty in obtaining reliable data, especially on such sensitive issue as wages, is a major obstacle to conducting effective research in

Afghanistan. Very few functioning labor organizations exist in the country. In such circumstances, one obvious place to look for data is in countries in similar situations. The challenge, however, is that extensive quantitative data or even qualitative studies are extremely rare on this specific topic in other countries, making comparative data difficult to obtain.

Therefore, this research is heavily reliant on qualitative research methodology and quantitative data gathering from a representative sample. In particular, we extracted data from published documents and reports, and verified the findings through in-depth interviewees with people most familiar with and knowledgeable on the issues. In order to assess the size of the wage gap and levels of wages offered by different organizations, we also gathered specific data on wages across sectors through a standardized *Pay and Benefits Questionnaire* sent along with interview requests to a representative sample of government and NGOs employees in the country. Specifically, we contacted 22 individuals from 17 organizations for interviews, of which 15 individuals from 11 organizations responded, representing views and data from an array of actors, including employees from the government, local and international NGO and donor agencies. We believe that the most likely reason for non-respondents is their unwillingness to share sensitive and confidential information about pay and benefits. As it is, wages and benefits are one of the strongest mechanisms for organizations to compete with one another for the limited pool of skilled labor willing to work in Afghanistan.

The process of data gathering and analysis was as follows: we contacted potential interviewees by email or phone initially and provided them with a brief project description and official interview request. We obtained consent from all interviewees and

provided them assurances of anonymity and confidentiality in writing, unless otherwise noted. Some of the interviewees chose to discuss the questions over the phone, while others responded by e-mail. After collecting their responses, we analyzed the information by recording all the responses and synthesizing key messages related to each question. For reasons of confidentiality, we have coded each responded by a number, from 1 to 15.

The research methodology, including interview questions and processes, were reviewed and approved by faculty advisors as well as Committee on the Use of Human Subjects at Harvard University. Interviewees were selected based on their knowledge, involvement and representation in different sectors. For instance, interviewees included individuals ranking from mid-level managers to country directors in organizations such as local and international NGOs, NGO coordination bodies and various government ministers.

V. EMPIRICAL FINDINGS AND DISCUSSION

Lack of coordination between state and NGOs, and among NGOs themselves, is not a new phenomenon. Duplication of effort was one of the main practical challenges that almost anyone working in the region must have witnessed. Almost all evaluations identified "lack of coordination" as a major constraint. This paper is addressing the need for cooperation and coordination in setting wages in a country where market forces have little, if any, effect on ensuring that wages approximate the value of the marginal productivity of labor, as suggested by standard economics.

In fact, our analysis indicates that wages offered in Afghanistan are a function of the employers' *ability* to pay, not the value of the marginal product of labor. For example,

on average a driver with similar qualifications receives a monthly salary of about $40 from the government, $110 from a small local NGO, $500 from a large international NGO and $800+ from the UN or other multinational donor agencies, resulting in a maximum wage differential of about twenty times between the lowest and highest paid driver. International consultants reportedly receive as high as US$60,000 a month. In fact, an Oxfam report found that "each full-time expatriate consultant costs up to half a million dollars a year" (Interviewee No.8). If the higher wages were reflective of higher premiums paid to attract better quality employees, one would expect the gap to shrink as we move to jobs requiring lower level skills. Although this is true in the data gathered here, the gap does not shrink nearly enough to warrant this thesis ample validity. In other words, even after controlling for education and skill, wage differentials are large.

Key Empirical Findings

Now we turn to addressing the three questions posed in the introductory section of this paper, the first of which relates to measuring the NGO-state wage gap. Measuring the exact size of the wage gap for people of similar skills is challenging for a variety of reasons. Firstly, it is hard to find people of *same* skill levels working for different sectors, which is why we opted for the second best option of looking for people with *similar* skill levels. The questionnaire, for instance, asked how much an organization would offer ***if*** they were to hire someone with the given level of qualifications, which included academic qualifications, years of experience, knowledge of languages and basic computer skills. In other words, each organization was given a list of hypothetical individuals with

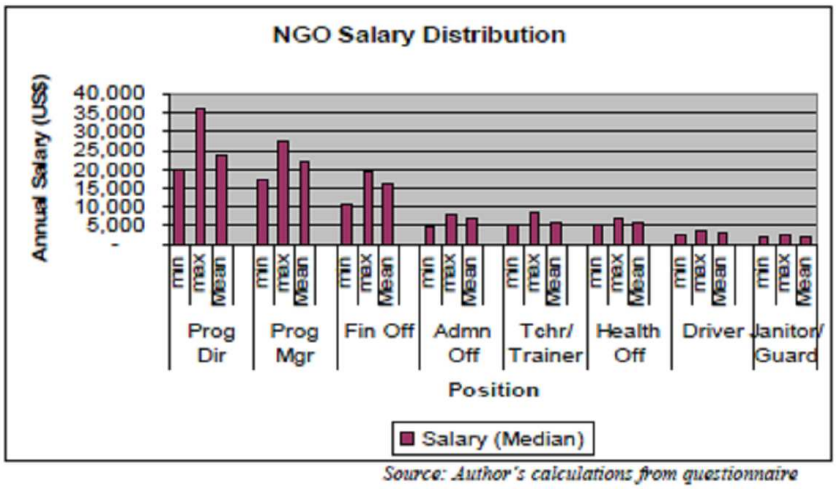
given qualifications and they were asked to state a range of salary and benefits that they would likely offer these individuals had they been hired in their respective organizations.

Secondly, there is a wide variety of organizations under the rubric of "NGO" including small grassroots organizations as well as well-established international organizations, many of whom function as de facto for profit firms. To address this issue, weighted average calculation was applied to the observed data. In addition, in order to minimize the effect of outliers on the data, donor agency data with much higher salaries were excluded from the analysis. Also, four measures of wages were constructed, namely wages in the upper bound (the maximum that an organization would offer), the lower bound (the minimum that an organization would offer), the median and the mean.

Thirdly, wage data is confidential in most organizations, thus making it extremely difficult to arrive at an accurate measure of the wage gap. To address this concern, all organizations were guaranteed anonymity. Besides, many titles were hypothetical – i.e. some organizations reported not having any "Health Officer," but they were asked to report how much they would offer him/her *if* they had one.

Keeping these caveats in mind, figure 6 shows the median wage distribution of local and international NGOs for eight different positions, from program directors to security guards. What is obvious from the chart is that at a median level, the highest wage earner in this list is an NGO director who may receive an average of $23,000 per year, while the lowest wage earner is a janitor or security guard who may receive an average pay of US$2,100 per year.

Figure 6. NGO Median Salary Distribution



Source: Author's calculations from questionnaire

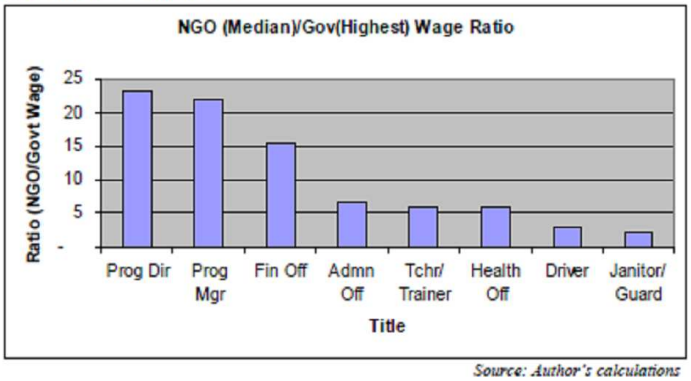
At first sight, the distribution above may suggest that variation in median salary increases as we move from lower skill level employees to higher skill levels. For instance, on average a driver receives an annual salary of US$3,096 ($258/month) with a standard deviation of 710 only. A program director, on the other hand, receives an average annual salary of US$25,782 ($2,149/month) with a standard deviation of 5,243. However, if we look at the standard deviation as a percentage of the mean, it is 23% for the driver and only 20% for the program director. The conclusion, therefore, is that there is a lot of variation in wages offered by different organizations at different levels, which is hard to explain by market forces alone, thus pointing to some kind of arbitrariness in salaries offered.

To find the size of the gap between NGO and government sectors, one would need to repeat the analysis carried out above when comparing people of similar skills among different NGOs. This kind of analysis includes both good and bad news. The good news is that there is little variation among salaries of government employees. The government salary scale has 10 grades. The maximum difference between the lowest and highest salary is about Afghanis 300 (about US$6 at an exchange rate of Afghanis

50/US$1), which is only about 8% of the highest salary. Therefore, we could safely use the maximum of the government salary (approximately US$84) as a benchmark to compare with any level of NGO salary.

The bad news, however, is that it is hard to find even people of *similar* skills and qualifications among the government employees to compare with the NGO employees. Government employees generally tend to have more experience in government-related jobs. NGO employees, on the other hand, are generally comprised of younger cohorts with knowledge of the English language and basic computer skills. While this generalization may be true at a broader level, exceptions on both sides abound too. Furthermore, one would expect that such differences should not matter at lower skill level jobs such as a driver, janitor or security guard. The data, however, suggests that the gap will not be significantly reduced by moving down the skill level and comparing actual salaries in both sectors.

Figure 7. NGO/Gov't Wage Ratio



Source: Author's calculations

As we can see in Figure 7, a typical NGO employee is paid between two and 22 times that of the highest paid government employee. If we consider the upper bound of NGO wages, the gap increases to as much as about 32 times. If we replace the currently fixed government employee wage of US$84 with more accurate actual wages offered by

the government for different positions, the size of the gap will obviously deteriorate even further. It should be noted that the values used in this analysis include the pure dollar amount of pay only, not including benefits such as per diems, health benefits, insurance, subsidized services and so on. In some cases, only a day's per diem for an NGO employee could far exceed a government employee's monthly salary.

One of the interview questions sought to find out what people thought was the cause of the higher wages offered by the NGO sector. The answers varied widely, with one answer dominating the rest i.e. they pay higher wages because they can. This pointed to the fact that the government would have also paid higher wages if they could afford to do so. One interviewee was insisting that he would not call the government pay "salary" because it is impossible to meet even the most basic necessities with $40-70 a month (Interviewee No.13). The second most common response was calling the NGO employees as "more competent" and ones with "higher skills" including English language and computer skills. In response, most government employees were asserting that government employees have more experience and "NGO workers receive more training and capacity building during their work", thus negating any market differentiation before hiring (Interviewee No.15).

Other answers to this question included the following: there is a lack of care and thought in spending "the tax dollars of donor countries" especially when NGOs pay exorbitant amounts of money to some consultants (Interviewee No.3); high wages "are paid out of the aid budget to poor Afghan people" but "very select few end up benefiting from it (Interviewee No.8)"; "donors and contractors are very much for-profit" and "consultant and contractor salaries are very high, especially when considered

cumulatively" (Interviewee No.12) and finally "high wages are due to market forces" suggesting high demand and low supply of qualified workforce (Interviewee No.6).

Although not explicit, some respondents were suggesting that most NGO wages are determined by what "peer organizations" pay, which places an upward pressure on wages due to even higher wages offered by donor agencies and multinational organizations (Interviewee No.9). Competition for attracting qualified workforce is so intense that one respondent found it peculiar that some NGOs "lost staff to government ministries" who offer even higher wages than International NGOs for employees seconded through the UN or the World Bank (Ibid).

For some organizations, it seems like higher wages are in part driven by the need to maintain some horizontal equity, i.e. pay similar wages for similar positions across different countries of operation. For others, higher wages, especially for lower skill levels are primarily driven by the need to maintain vertical equity i.e. the bar is set high by international staff, which drives the wages upwards for qualified local staff at higher positions, which in turn drives the wages upwards for everyone else in the organization.

What are some of the distortionary effects of this wage gap, especially on the labor market and future fiscal capacity of the country?

There are numerous ways in which the currently high wage gap is distorting the labor market and producing undesirable effects. We classify the negative externalities of the current wage gap into two groups: first for the domestic labor market and second for the future fiscal sustainability of service delivery in the post-aid era when the NGOs would have left the country.

The most obvious distortion for the domestic labor market is the unhealthy competition for the limited pool of qualified work force, which bids the price of labor up for a country where the opportunity cost of every dollar is quite significant. Since the competition is not only between the NGO sector and the government, but also among NGOs themselves, this creates yet further upward pressure on wages, thus paying much higher than their value of marginal productivity.

This may result in some "good" since it can function as efficiency wage, defined as wages higher than market-clearing wage set by employers to induce higher productivity or improve the applicant pool or raise employee morale. Our research in fact supports all these expected results i.e. NGO employees generally tend to have higher productivity by exerting higher level of effort; NGOs are able to absorb a more qualified workforce, equipped with relatively better skills; and NGO employees generally exhibit higher morale, all of which create a virtuous cycle of higher pay resulting in higher productivity.

This result may be "bad" if seen from the perspective of the government, because the reverse of all of these results will be true for them, assuming their ability to finance higher wage bill has not increased. In fact, the fiscal capacity has not increased much as evident from the NAHDR (2007), which shows that the Afghan economy was only able to increase its revenue from about 4.5% of GDP in 2004/05 to about 7% in 2006/07, still not enough to cover the government wage bill alone. Specifically, although government employee wages have not decreased, they felt highly demoralized when they witness people of similar skills, and often much less experience, earn many times their wages in the NGO sector. This may result in a vicious cycle of low wage and low productivity. It

may also be true, however, that since the more qualified are attracted by the NGO sector, only the less qualified are left working for the government. In fact, Ashraf Ghani, current president, who also used to be Chancellor of Kabul University and Afghan finance minister, was one of the earliest ones to note this problem by saying that "within six months of starting my job as finance minister, my best people had been stolen by international aid organizations who could offer them forty to a hundred times the salary we could" (Poston 2006, p.1).

Another major distortion is the sub-optimal allocation and use of human capital. As evident from the ratio of NGO wages to government wages, even the highest paid government employee has an incentive to move to the lowest level job in the NGO sector. In fact, it is not uncommon to find highly skilled people with university degrees and several years of experience working in low skill jobs such as administrative assistant, logistics officer or even as drivers or security guards in NGOs, attracted primarily by the higher wages. This signifies tremendous loss of scarce human capital, which is misallocated due to skewed incentives. It is also not uncommon to see people with Medical Doctor's degrees doing administrative or logistical works.

Most of these findings were echoed by the interviewees when asked about the potentially negative effects of the wage gap, especially at times when the employees of the two sectors have to work together. Some of the key responses include the following: "the higher-paid staff feel more dominant" (Interviewee No.1); government employees are "looked down upon" (Interviewee No.5); "frequent disputes arise which may result in failing to achieve the goals of the project" (Interviewee No.10); "government employees

have a lot of animosity towards NGO employees" (Interviewee No.14) and "the wage gap has created an unhealthy environment between the two sectors" (Interviewee No.15).

The second key aspect of the negative externality of the wage gap concerns the future fiscal capacity of the state to deliver the needed services in the post-NGO era. Two key questions can cause a concern. Firstly, what happens to the portion of the domestic labor force currently working for the NGO sector? Secondly, who will replace the NGO sector and the much work that they are currently doing?

To answer the first question, regarding the unemployment of the qualified workforce, it is only worrying if the portion currently working for the NGOs will not be willing to work for lower government wages, or if the government will not be able to offer them higher wages comparable to their previous NGO wages.

The answer to the second question is similarly troubling only if the government's fiscal capacity has not increased to be able to deliver the required services that the NGOs are currently delivering, or that the current NGO employees are not willing to work for lower government wages. Even if some of the NGO employees will be willing to work for the government, either by them lowering their expectations or the government offering them slightly higher wages, the interpersonal tension that is created now may be too deeply rooted to be resolved later, thus leaving the risk of uncooperative behavior and unhealthy working relationships in the future. Having created a dependency on foreign aid, the state would be unable to attract the talent they need to run the government operations smoothly, thus risking falling back into a fragile or failed state.

It is these potentially troubling scenarios that this paper is trying to predict, and prevent by taking the necessary measures. The case of East Timor after the withdrawal of

the international community provides textbook examples of some pitfalls to avoid. A report by Carnahan, Durch, & Gilmore (2006) found the negative effect of UN peace keeping operations in East Timor as "the largest negative effect" and warned that mitigating these effects required "revising the wage setting principles" by organizations as large as the UN, whose wages form the new floor based on which other NGOs determine their wage levels.

In fact, in the preceding section, we excluded UN and other donor agency wages from the calculation of wage gap, thus underestimating the size of the gap. Including these organizations would have driven the gap much higher. As an example, a UN National Officer could earn anywhere between US$23,535 and US$63,965 per year, up to a ratio of about 63 times of highest paid government employee. Some international employees receive a monthly hazard benefits - in addition to their normal pay and benefits - which is about 15 times the full salary of highest paid government employee or even several times higher than the pay offered to most NGO employees.

Box 1. A Simple Partial Equilibrium Economic Model

Figure A. Local labor market with NGO sector added

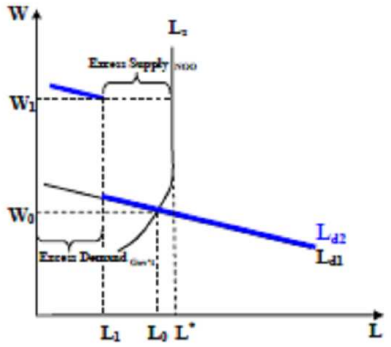
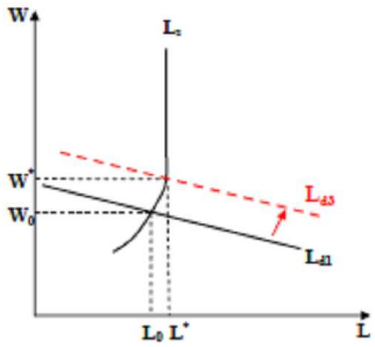


Figure B. Local labor market in the post-NGO era



The figures above are an attempt to graphically depict the effect of NGO sector on local wages (Figure A) and possible solution to mitigate the effect (Figure B).

Figure A, suppose the economy has only L^* number of qualified workforce and government is the sole provider of employment opportunities. L_S shows the supply of qualified workforce while L_{d1} (the think black line) shows the demand for qualified workforce. The equilibrium level of wage is indicated by W_0 and equilibrium level of current employment is indicated by L_0.

As the NGO sector starts operation, they increase the total demand for labor to L_{d2} (the thick blue line). The new demand curve is discontinued after L_1 as the NGO sector only wants to hire L_1 number of employees. This, therefore, pushes the wages up to W_1, but only hiring L_1 number of employees. At this wage, however, all L^* number of workforce are willing to supply labor, thus creating an excess supply of L_1L^*. Since L_1 number of "most talented" was drained from the government sector to the NGO sector, this leads to an excess demand of equal size in the government sector.

Those now working for the NGO are in fact receiving *Efficiency Wages*, while those left with the government feel demoralized as they saw their peers earning much higher wages in the NGO sector, thus creating a virtuous cycle for the former and a vicious cycle for the latter.

Figure B shows one possible solution for the post-NGO era. If all that has changed is the departure of NGO sector, there needs to be some way to absorb those left unemployed after the NGOs' departure that would cause the demand curve to shift from L_{d1} to L_{d3}. One way to achieve this shift is by using the current level of resources from the NGO sector to either private sector to create additional demand or to the government to increase their willingness to pay higher wages for more labor.

Figure B shows one possible solution for the post-NGO era. If all that has changed is the departure of NGO sector, there needs to be some way to absorb those left unemployed after the NGOs' departure that would cause the demand curve to shift from L_{d1} to L_{d3}. One way to achieve this shift is by using the current level of resources from the NGO sector to either private sector to create additional demand or to the government to increase their willingness to pay higher wages for more labor.

VI. A NONLINEAR GENERAL EQUILIBRIUM MODEL WITH MULTIPLE EQUILIBRIA CONSISTENT WITH THE EMPIRICS

In order to complete our argument we address the problem of formalizing complex interactions between labor markets, other markets and the public sector. We summarize here the basic structure of a 'simple' non-linear model embodying distinct markets and public sector which can be applied to analyze the dual labor markets in general equilibrium in countries like Afghanistan. At any single point in time, the model can be presented as a Social Accounting Matrix (SAM) representation of the socio-economic system. The key distinction here is the explicitly non-linear nature of the economy-wide functional relationships. The key theorem shows the existence of multiple equilibria which captures the duality in labor market. Some further considerations of complexity and increasing returns show that multiple equilibria are indeed the natural outcomes in such models. Thus, there would seem to be some role for domestic policy in guiding the economy to a particular equilibrium among many (Khan 2002, 2004, 2013).

The virtue of an economy-wide general equilibrium approach to labor market systems is the embodiment of various inter-sectoral linkages. In a SAM, such linkages are mappings from one set of accounts to another. In terms of dual labor systems with wage differentials that persist, the production activities can be broken down into a production (sub-) system and a set of public sector activities. In practice, this presents considerable difficulties of classification and empirical estimation. The findings above on Afghanistan illustrate some of the difficulties.

The production activities producing value added going to various factors---particularly to labor which is our focus here, are defined on the input-output subspace of

the general and abstract mathematical space X. We denote labor markets in both private and public sectors by indexing the vectors of inputs, outputs and value added across the specific rows and columns in the input-output matrix. In addition to the values of inputs and outputs, points in this space could also represent household and other institutional income and expenditure accounts. The key relationship in this context is that between the endogenous accounts (usually, production activities and technologies, factors and households) and the exogenous ones. It is this relationship that is posited to be non-linear and this together with some assumptions on the relevant mathematical space can lead to the existence of multiple equilibria.

Although the existence theorems for these multisectoral models provide some structure for the equilibria as sequences of fixed points in the socio-economic structure with evolving technology systems in both the private and public sectors, it is not specified a priori which equilibrium will be reached. The problem of equilibrium selection thus remains open. This is the policy question that we addressed in partial equilibrium model before. We want policies to enable the entire economy to reach the maximal fixed points that are attainable. These are in fact reached through a combination of market forces and policy maneuvers over time. It is also to be understood that path-dependence would rule out certain equilibria in the future. Thus initial choices of policies in the partial equilibrium context do matter crucially at times. This makes modeling the entire economy essential for going towards optimality.

The Model on a Lattice

Define X as a vector lattice over a subring M of the real field R. Let

$$x_+ = \{x \mid x \in X, x \geq 0\}$$

A non-linear mapping N is defined such that $N : X_+ \to X_+, N_0 = 0$. Given a vector of exogenous variables d, the following non-linear mapping describes a simultaneous non-linear equations model of an economy, E:

$$x = Nx + d \qquad (1)$$

for a given $d \in X_+$.

This non-linear system represents a socio-economic system of the type described previously. In order to specify the model further, the following assumptions are necessary.

X is order complete

N is an isotone mapping

3. $\exists \hat{x} \in$ such that $\hat{x} \geq N\hat{x} + d$

In terms of the economics of the model, the non-linear mapping from the space of inputs to the space of the outputs allows for non-constant returns to scale and technical progress over time. The 3 assumptions are minimally necessary for the existence of equilibrium. Assumption 3, in particular ensures that there is some level of output vector which can be produced given the technical production conditions and demand structure.

Existence of Multiple Equilibria:

Theorem: Under the assumptions 1 - 3, there exists $x^* \in X_+$ so that x^* is a solution of

$$x = Nx + d$$

Proof: Consider the interval $[0,x]=\{\hat{x} \mid \hat{x} \in X_+, 0 \le \hat{x} \le x\}$ where $\hat{x}$ is defined as in assumption 3. Take a mapping F.

$F: x \in X_+ \to Nx + d$

F is isotone and maps $[0,x]$ into itself.

Define a set $D \equiv \{x | x \in [0,x], x \ge Fx\}$.

By assumption 3, D is non-empty.

We now show $x^* \equiv \inf D$ is a solution to $x = Nx + d$. $x^* \equiv \inf D$; therefore $x^* \le x, \forall x \in D$. F is isotone; therefore $Fx^* \le Fx \le x$ for each $x \in D$ implying.

$$Fx^* \le x^*$$

From (2) we have $F(Fx^*) \le Fx^*$. Thus $Fx^* \in D$; hence $x^* \equiv \inf D \le Fx^*$ so, $Fx^* \le x^* \le Fx^*$. Therefore $x^* = Fx^*$.

This is an application of Tarski's and Birkhoff's theorem. The key feature to note here is that the equilibrium is not necessarily unique. It should also be noted that under additional assumptions on space X and the mapping N the computation of a fixed point can be done by standard methods (e.g. Ortega and Rheinboldt).

Multiple Equilibria on Banach Space:

In this section the results for multiple equilibria are extended to functionals on Banach Space. We can define the model again for monotone iterations, this time on a non-empty subset of an ordered Banach space X. The mapping $f: X \to X$ is called compact if it is continuous and if $f(x)$ is relatively compact. The map f is called completely continuous if f is continuous and maps bounded subsets of X into compact

sets. Let X be a non-empty subset of some ordered set Y. A fixed point x of a map $N : X \to X$ is called minimal (maximal) if every fixed point y of N in X satisfies

$$x \le y (y \le x)$$

Theorem: Let (E, P) be an ordered Banach space and let D be a subset of E.

Suppose that $f : D \to E$ is an increasing map which is compact on every order interval in D. If there exist $y,\ \hat{y} \in D$ with $y \le \hat{y}$ such that $y \le f(y)$ and $f(\hat{y}) \le \hat{y}$, then f has a minimal fixed point x. Moreover, $x \le y$ and $x = \lim F^k(y)$. That is, the minimal fixed point can be computed iteratively by means of the iteration scheme

$$x_0 = y$$

$$x_{k+1} = f(x_k) \qquad k = 0,1,2,....$$

Moreover, the sequence (x_k) is increasing.

Proof: Since f is increasing, the hypotheses imply that f maps the order interval $[\bar{y}, y]$ into itself. Consequently, the sequence (x_k) is well-defined and, since it is contained in $f[\bar{y}, y]$, it is relatively compact. Hence it has at least one limit point. By induction, it is easily seen that the sequence (x_k) is increasing. This implies that it has exactly one limit point $\bar{x}$ and that the whole sequence converges to $\bar{x}$. Since f is continuous, $\bar{x}$ is a fixed point of f. If x is an arbitrary fixed point in D such that $x \ge \bar{y}$, then, by replacing y by x in the above argument, it follows that $\bar{x} \le x$. Hence $\bar{x}$ is the minimal fixed point of f in $(\bar{y} + P) \cap D$. It should be observed that we do not claim that there exists a minimal fixed point of f in D.

We can also show that if $F : x \in X_+ \to Nx + d$ is an intersecting compact map in a non-empty order interval $[x, \hat{x}]$ and $x \le Fx$ and $F\hat{x} \le \hat{x}$ then F has a minimal fixed point x^* and a maximal fixed point x^{**}. Moreover, $x^* = \lim F^k(x)$ and $x^{**} = \lim F^k(\hat{x})$. The first of the above sequences is increasing and the second is decreasing.

VII. CONCLUSIONS AND POLICY RECOMMENDATIONS

We have now shown empirically the persistence of wage differentials in Afghanistan. We have also offered both partial and general equilibrium explanations. What policy recommendations can lead towards optimality in such a distorted economy as in Afghanistan?

Having addressed the first two questions posed in the introductory section of this paper, namely estimating the size of the gap and examining the negative effects of the gap on local labor market, we now turn to the third question above, the answer to which lies in the recommendations below. Based on the findings in the previous sections of this paper, we are proposing three potential policy choices, each to be examined with their strengths and weaknesses in the context of Afghanistan. The criteria against which the success of each policy choice would be determined are three. The policy design must be: i) technically sound i.e. getting the causal chains from action to outcomes right; ii) politically supportable i.e. ensuring the political environment is right to bring about and sustain change; and iii) administratively feasible i.e. ensuring proposed change is implementable with existing capacities and resources. The three policy recommendations are the following:

i) Cap the NGO wages: This policy would require imposing a ceiling on NGO wages. Although administratively the most efficient, it is the least politically supportable option, especially given the fact that most NGOs have their own internal wage policies and salary scale. Furthermore, as discussed earlier, NGOs need to maintain both horizontal and vertical equity. Imposing a cap on

the wages will limit their ability to comply with their internal policies and to maintain equity.

ii) Raise the wages for the government employees to arrive at a desirable gap: This policy option would necessitate determining the optimal increase in government wages given the wage level of the NGO sector, the analysis of which is beyond the scope of this paper. This would also increase the wage bill and impose further strains on the already fragile fiscal position of the government. It would not be feasible unless external financial support is made available up to a time when the government is able to raise its own revenues high enough to pay for the increased expenditure. On a brighter note, such a move has already been under way in the policy discussions in Afghanistan. In fact, the last parliamentary hearing increased the government salary scale to a large extent.

While this policy choice may score high on political supportability, it would score low both on implementability as well as on technical soundness. It is low on implementability because of the lack of adequate available resources to support a higher wage bill. It will score low on technical soundness mainly because it will address the symptom, but not the underlying cause, of the problem. The incentives of the two sectors seem to be misaligned, each trying to optimize their own objective function without heeding the general equilibrium effects. The most appropriate policy choice should therefore address issues of incentives as well.

iii) NGOs should contribute to a wage stabilization fund: This is the most desirable of the three policy options in that it seems technically right, politically supportable and administratively feasible. Although it does not directly close the gap, it first provides the NGO leaders with an incentive to reduce their wages relative to government wages. Secondly, it provides the government with an alternative source of revenue with which to stabilize future wages in the post-NGO era. This, however, has the increased administrative burden of actually measuring the wages for people of comparable skills and experiences, measuring the gap, and enforcing a mutually agreed upon level of contribution. Such a comprehensive analysis is also beyond the scope of this paper and may be taken up in future research.

A final remark about growth of the Afghan economy in a dynamic general equilibrium setting can tell us more about the long run viability of the second option. In the short run the third option may be practical. But an economy cannot be forever dependent on outside help. Therefore, we need to ask what development strategy can lead Afghanistan to a sequence of high wage equilibria. As studies of East Asian Development show, an export led viable learning economy can be created under certain conditions. Strategically then, this is the question that policy makers need to ask and answer.

References:

Center for Policy and Human Development. 2007. *Afghanistan Human Development Report 2007, Bridging Modernity and Tradition: Rule of Law and the Search for Justice*, http://www.cphd.af/nhdr/nhdr07/download/pdfs/eng/nhdr07_complete.pdf

IRIN News. 2007. Afghanistan: Oxfam calls for aid to be more effective, transparent, Nov 20, http://www.irinnews.org/Report.aspx?ReportId=75403 (Accessed Jan 15, 2011)

Carnahan, Michael, William Durch, and Scott Gilmore. 2006. *Economic Impact of Peacekeeping*, Final Report

Dart, Raymond, Being "Business-Like" in a Nonprofit Organization: A Grounded and Inductive Typology

Easterly, William. 2006. *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good*, New York: Penguin Press

International Monetary Fund (IMF), World Economic Outlook Database, http://imf.org/external/data.htm

Khan, Haider A. 2002."Innovation and Growth in a Schumpeterian Model" (2002), *Oxford Development Studies,* 30. (3): 289-306.

----------2004.. *Innovation and Growth in East Asia: The Future of Miracles*, (2004), Macmillan/Palgrave.

---------2013. "Development Strategies: Lessons from South Korea, Thailand, Malaysia and Viet Nam", in Augustin Fosu ed. *Lessons from Successful Development Strategies*, Oxford University Press, 2013

Moore, Mark H. 1995. *Creating Public Value Strategic Management in Government*, Harvard University Press

Nixon, Hamish. 2007. *Aiding the State? International Assistance and the State building Paradox in Afghanistan*, Afghanistan Research And Evaluation Unit, April

Oxfam. 2008. *Afghanistan: Development and Humanitarian Priorities*, January

Office of Special Inspector General for Afghanistan Reconstruction (SIGAR). 2010. *DOD, State and USAID Obligated Over $17.7 Billion to about 7,000 Contractors and Other Entities for Afghanistan Reconstruction During Fiscal Years 2007-2009*, Oct 27

Poston, Toby (2006) The battle to rebuild Afghanistan, BBC, online at http://newsvote.bbc.co.uk/2/hi/business/4714116.stm 26 Feb, 2006

Skocpol, Theda (1985) “Bringing the State Back In: Strategies of Analysis in Current Research,” in Evans, Rueschmeyer and Skocpol, eds. *Bringing the State Back In.* Cambridge: Cambridge University Press, 3-37.

Woller, Gary; Parsons, Robert. Assessing the Community Economic Impact of Nongovernmental Development Organizations