ANNALS OF ECONOMICS AND FINANCE **9-2**, 223–237 (2008)

The Effects of Foreign Aid on the Creation and Distribution of Wealth

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This paper develops a model to study the effects of foreign aid on the creation and distribution of wealth in the recipient country. It considers three types of foreign aid: permanent grants to all individuals, temporary grants to uneducated workers, and foreign aid in the form of low interest rate loans to individuals who invest in education. The model shows that the economy may have two long-run equilibria, a rich equilibrium and a poor one. All types of foreign aid can increase the proportion of individuals investing in education, which means more people converging to the rich equilibrium and higher average wealth in the economy. In addition, if permanent or temporary grants are sufficient large, it is possible that the whole economy may converge to the rich equilibrium.

Key Words: Foreign aid; Overlapping-generations model; Investment in education.

JEL Classification Numbers: F35, O19.

* Dingsheng Zhang thanks financial support from program for New Century Excellent Talents in University (No. NCET-07-0894).

1529-7373/2008

1. INTRODUCTION

Since World War II, the volume of foreign aid has increased drastically from a few hundred million US dollars to about US$50 billion in early 1980s, and peaked at US$69 billion (in 1995 prices) in 1991 (World Bank, 1998a). Foreign aid has also grown in significance in many recipient countries' government finance. For the 50 most aid-dependent countries, foreign aid accounted for, on average, 53.8% of central governments' expenditures over the period from 1975 to 1995 (World Bank, 1998b). Despite the vast transfer of resources, there is no clear evidence that foreign aid has delivered its promise of promoting economic development and reducing poverty (Michalopoulos and Sukhatme, 1989). Indeed many countries experienced declines in living standards over the period when the amounts of aid they received rose. According to United Nations' Human Development Report (1996), 70 countries had lower average incomes in 1995 than they did in 1980, and 43 of these countries had lower average incomes than they did in 1970. By the late 1990s, more than a billion people lived on less than $1 a day, and even more people lack basic services such as clean water, sanitation, electricity, and schooling (World Bank, 1998a). The dire situation has prompted renewed calls for increasing aid to poor countries. In July 2005, G8 leaders agreed to double aid to Africa by 2010 and eliminate debts for the poorest countries.

What can we realistically expect the increased aid effort to achieve? How to improve the effectiveness of foreign aid? To answer these questions, it is important to understand the mechanisms through which foreign aid may contribute to economic development in recipient countries, and the conditions under which these mechanisms work well or poorly. There is a large body of empirical literature on the effectiveness of foreign aid on economic development (see Hansen and Tarp, 2000 for a review). In comparison, there are only a few theoretical studies that investigate the mechanisms through which aid may impact on growth. Mosley et al. (1987) develop a model to investigate the how aid affects the constraints and decisions of the recipient governments which in turn influences the output level of the recipient country. Boone (1996) develops a theoretical model that examines how different types of governments may use aid funds differently. Djajic et al. (1999) and Benarroch and Gaisford (2004) analyse the role of aid in the context of international trade, with the former focusing on how aid affects technology transfer and the latter on the terms of trade. Gong and Zou (2000, 2001) study the impact of foreign aid on capital accumulation, foreign borrowing, labor supply and consumption. More recently, Chatterjee and Turnovsky (2005) examine how public investment financed by aid may affect economic growth and welfare.

This paper investigates a different channel through which foreign aid can affect the creation and distribution of wealth in the recipient country. In particular, we consider how three different types foreign aid — permanent grants to all individuals, temporary grants to uneducated workers, and foreign aid in the form of low interest rate loans to individuals who invest in education — may affect individuals' decisions to invest in education, which in turn determines the long-run average level of wealth in the economy as well as the distribution of wealth between uneducated (unskilled) and educated (skilled) individuals.

For our investigation, we develop an overlapping-generations model similar to that of Galor and Zeira (1993).[1] In our model, individuals live for two periods and derive utility from both consumption and a bequest. In the first period, they decide whether or not to invest in education. If they do, they work as skilled labor in the second period, otherwise they work as unskilled labor in both periods. All individuals are assumed to be ex ante identical in all aspects except in their inherited wealth. Education is indivisible and requires a lump sum payment in period one. Individuals can use their inheritance (if that is large enough) for their education, or they can borrow. It is assumed that lenders have to incur monitoring costs to ensure that loans are paid in full when they are due; as a result, interest paid by debtors are higher than that received by creditors. Because of relatively high borrowing costs, individuals who have sufficient inheritance to fund education without borrowing have better access to education than those who need to borrow (Becker, 1975). Consequently, the initial level of wealth can affect individuals' decisions regarding education. The education decisions in turn affect output and inheritance of the next generation, which then impact on later education decisions, and so on. Hence, initial wealth not only has short run implications but also affects education decisions and income distribution in the long run. This suggests that altering the level of initial wealth may have far-reaching effects on an economy's long-term prosperity. Given that foreign aid can be used to alter the initial wealth level of individuals, it can increase the aggregate level of education investment in the recipient country, thereby stimulating wealth creation through human capital accumulation, and improving income distribution by increasing the proportion of skilled workers in the labor force.

Two features of human capital in our model are worth noting. Firstly, in our model, an individual's education decision and consequently human capital formation is influenced by parental input (in the form of heritance). The role of parents in human capital formation of children has been studied by, for instance, Becker and Tomes (1986) and recognised in Galor

[1] Galor and Zeira (1993) explore how investment in human capital affects income distribution and macroeconomic adjustment to aggregate shocks. They do not consider foreign aid in their analysis.

and Tisddon (1997). Secondly, since in our model foreign aid stimulates economic development through promoting human capital formation, the driving force behind economic development is human capital, not foreign aid per se. The importance of human capital in economic development is of course well accepted in the literature. Indeed recent studies suggest that whereas physical capital accumulation was a prime engine of growth in earlier stages of economic development, modern growth is increasingly relying on human capital formation (see Galor and Moav, 2004).

The rest of the paper is organised as follows. Section 2 sets out the basic model and investigates the impact of permanent foreign aid. Section 3 and section 4 consider, respectively, the impact of temporary aid, and foreign aid in the form of low interest rate loans. Section 5 concludes.

2. AN OVERLAPPING-GENERATIONS MODEL WITH PERMANENT FOREIGN AID

2.1. The setup of the model

Consider a small open economy where individuals live for two periods in overlapping generations. An individual derives utility from his/her own consumption of a single good (which for simplicity is assumed to occur only in the second period) and from a bequest to his child. The utility function is:

$$u = \alpha \ln c + (1 - \alpha) \ln b \tag{1}$$

Where c is consumption in second period, b is bequest, and α is a parameter that lies between 0 and 1.

The single good in the economy can be produced with two different technologies, one using only unskilled labor and another using both skilled labor and capital. The production function of the first technology is:

$$Y_t^n = w_n L_t^n \tag{2}$$

where L_t^n is unskilled labour in period t, and w_n is a productivity parameter.

The second technology exhibits constant returns to scale and is described by:

$$Y_t^s = F(K_t, L_t^s) \tag{3}$$

Where K_t, L_t^s are capital and skilled labour inputs available in period t, respectively. For simplicity it is assumed that investments in both physical and human capital are made one period in advance and there is no capital depreciation.

Each individual is assumed to have one parent and one child, which means that the population size remain constant. In each generation there

is a continuum of individuals of size L. All individuals are ex ante identical except in their levels of inherited wealth. An individual can either work as an unskilled worker in both periods, or he can invest in human capital in the first period and work as a skilled worker in the second period. If he chooses to invest in human capital, he has to invest a fixed amount of h.

Individuals can lend and borrow in a competitive world capital market. The lending rate is r which is assumed to be constant over time. The borrowing rate is i_d which is higher than r because the lender has to incur monitoring costs to avoid loan defaults. It is assumed that monitoring raises the cost of defaults to debtors, thereby discouraging defaults. Specifically, if lenders spend a monitoring cost of z, the cost to the borrower to default will be βz, where $\beta > 1$.

Competition in the capital market implies that lenders make zero profits, that is, the differential in borrowing and lending rates is driven solely by monitoring costs:

$$d(i_d - r) = z \tag{4}$$

where d is the amount borrowed.

In order to prevent defaults, lenders will choose to incur a monitoring cost z that is just large enough to make default unattractive to debtors, i.e.,

$$d(1 + i_d) = \beta z \tag{5}$$

Equations (4) and (5) jointly determine the equilibrium borrowing interest i_d

$$i_d = i = \frac{1 + \beta r}{\beta - 1} > r \tag{6}$$

2.2. Impact of permanent foreign aid

Now we introduce permanent foreign aid into the model described as above and study its impact on individuals' decisions. Assume that a fixed amount of permanent foreign aid a is given to each individual during his first period of life, such that the individual's total initial wealth is $x + a$, the sum of his inheritance and the foreign aid.

If an individual decides not to invest in human capital, he works in both periods, lends his funds during the first period, consumes in the second period and leaves a bequest of:

$$b_n(x) = (1 - \alpha)[(1 + r)(x + a + w_n) + w_n] \tag{7}$$

His lifetime utility is

$$U_n(x) = \ln[(x + a + w_n)(1 + r) + w_n] + \varepsilon \tag{8}$$

where $\varepsilon = \alpha \ln \alpha + (1-\alpha)\ln(1-\alpha)$

If an individual decides to invest in human capital, and has sufficient funds to do so without borrowing (i.e., $x + a \geq h$), he is a lender and leaves a bequest of

$$b_{s1}(x) = (1-\alpha)[w_s + (x + a - h)(1 + r)] \tag{9}$$

And he has a lifetime utility of

$$U_{s1}(x) = \ln[w_s + (x + a - h)(1 + r)] + \varepsilon \tag{10}$$

If an individual decides to invest in human capital, but has insufficient funds ($x + a < h$), he is a borrower and leaves a bequest of

$$b_{s2}(x) = (1-\alpha)[w_s + (x + a - h)(1 + i)] \tag{11}$$

And he has a lifetime utility of

$$U_{s2} = \ln[w_s + (x + a - h)(1 + i)] + \varepsilon \tag{12}$$

We assume that, for those who have sufficient funds, investment in human capital will have a higher payoff. From equations (8) and (10), this requires that

$$w_s - h(1 + r) \geq w_n(2 + r) \tag{13}$$

For those who do not have sufficient funds, invest in human capital is preferable as long as $U_{s2}(x) \geq U_n(x)$, that is:

$$x \geq f(a) = \frac{1}{i - r}[w_n(2 + r) + h(1 + i) - w_s] - a \tag{14}$$

In other words, an individual will choose whether or not to invest in human capital depending on whether his initial wealth is greater or smaller than $f(a)$. Hence, initial distribution of wealth determines individuals' education choice, and therefore the proportions of skilled and unskilled labour in the economy.

Let D_t be the distribution of initial wealth (including foreign aid) by individuals born in period t, we have:

$$\int_0^\infty dD_t(x_t) = L \tag{15}$$

From equation (14), the quantity of skilled labour is given by:

$$L_t^s = \int_{f(a)}^\infty dD_t(x_t) \tag{16}$$

and the quantity of unskilled labour is

$$L_t^n = \int_0^{f(a)} dD_t(x_t) \tag{17}$$

From equation (14), it is clear that as the size of foreign aid (a) increases, the critical value of initial wealth $f(a)$ falls and the number of individuals who choose to invest in human capital rises. Thus we have

PROPOSITION 1. *At any given time period, permanent foreign aid can increase the proportion of individuals who choose to invest in human capital thereby increasing the relative size of skilled workers in the economy.*

The distribution of initial wealth at period t not only determines individual decisions in period t, but also affects inheritance and therefore initial wealth in the next period. Inheritance in period $t+1$ is described by:

$$x_{t+1} = \begin{cases} b_n(x_t) = (1-\alpha)[(1+r)(x_t + a + w_n) + w_n] & \text{if } x_t < f(a) \\ b_{s1}(x_t) = (1-\alpha)[w_s + (1+i)(x_t + a - h)] & \text{if } f(a) \le x_t < h - a \\ b_{s2}(x_t) = (1-\alpha)[w_s + (1+r)(x_t + a - h)] & \text{if } h - a \le x_t \end{cases} \tag{18}$$

The dynamic evolution of wealth distribution can be illustrated in Figure 1. In Figure 1, lines b_n and b_s depict the dynamic relationship between inheritance and bequest for unskilled and skilled workers, respectively. b_n and b_s intersect at where $x_t = f(a)$.

Figure 1 also depicts the long-run equilibrium levels of inheritance. If an individual's inheritance is less than $f(a)$, he does not invest in human capital, and all his descendants follow suit. Their inheritances converge to a long-run equilibrium level $\overline{x}_n(a)$:

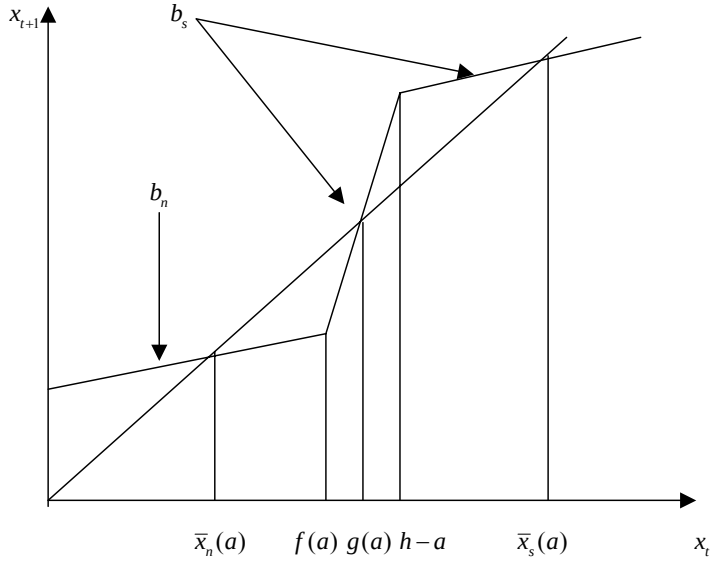
$$\overline{x}_n(a) = \frac{(1-\alpha)w_n(2+r) + (1-\alpha)(1+r)a}{1-(1-\alpha)(1+r)} \tag{19}$$

If an individual's inheritance is more than $h - a$, he invests in human capital using his own funds and so are all their descendants, generation after generation. Their bequests converge to $\overline{x}_s(a)$:

$$\overline{x}_s(a) = \frac{(1-\alpha)[w_s - h(1+r)] + (1-\alpha)(1+r)a}{1-(1-\alpha)(1+r)} \tag{20}$$

If an individual's inheritance lies between $f(a)$ and $h - a$, he borrows to invest in human capital, however not all of his descendants will invest in human capital. In order for all his decedents to choose to invest in human

FIG. 1. Dynamic relationships between inheritance and bequest for unskilled and skilled workers under permanent aid



capital, his inheritance needs to exceed the critical value $g(a)$

$$g(a) = \frac{(1-\alpha)[h(1+i) - w_s] - (1-\alpha)(1+i)a}{(1-\alpha)(1+i) - 1} \tag{21}$$

Thus, generations of individuals in this economy form two groups in the long run: rich dynasties which converge to an equilibrium with investment in human capital, and poor dynasties which converge to an equilibrium with no investment in human capital.

It should be noted Figure 1 is drawn under two implicit assumptions. Firstly, the slopes of b_n and b_s are smaller than one, at $\overline{x}_n(a)$ and $\overline{x}_s(a)$ respectively, which means that the following condition holds:

$$(1-\alpha)(1+r) < 1 \tag{22}$$

This assumption ensures that the evolution of bequests does not explode over time. The second assumption is that the steep part of b_s has a slope larger than one, which requires that

$$(1-\alpha)(1+i) = \frac{\beta}{\beta - 1}(1+r)(1-\alpha) > 1 \tag{23}$$

This assumes high loan enforcement costs which leads to a relatively large difference between lending and borrowing interest rates.

Given assumptions (22) and (23), it is easy to show that as a increases, $\overline{x}_n(a)$ and $\overline{x}_s(a)$ increase. Thus we have

PROPOSITION 2. *Permanent foreign aid increases the long run equilibrium levels of wealth for both unskilled and skilled workers.*

In addition, notice that the long-run number of unskilled workers is the number of individuals who inherit less than $g(a)$ in period t, i.e.,

$$L_t^{g(a)} = \int_0^{g(a)} dD_t(x_t) \tag{24}$$

and the long-run number of skilled workers is therefore $L - L_t^{g(a)}$. From equation (21), we know that as a increases, the critical value $g(a)$ falls. This means that in the long run, more individuals will choose to invest in human capital and join the skilled group which converges to the high equilibrium wealth level. The long-run level of average wealth for both groups is

$$\overline{x}_s - \frac{L_t^{g(a)}}{L}(\overline{x}_s - \overline{x}_n) \tag{25}$$

which increases as a increase.

Hence, we have

PROPOSITION 3. *Permanent foreign aid can increase the relative size of the skilled workers in the long run and increase the long run average wealth for the economy as a whole.*

Proposition 3 suggests that by enabling initially poor individuals to choose to invest in human capital, permanent foreign aid encourages more individuals and their descendents to join the skilled (or rich) group, thereby improving the average performance of the economy.

3. TEMPORARY FOREIGN AID

In this section we consider how the results of the last section may change if foreign aid is temporary (i.e., it is provided for one period only) and targeted (i.e., it is provided to only those who do not invest in human capital). Given such temporary foreign aid (a), in period t, those who would not invest in human capital enjoy a total wealth of $x_t + a$, where x_t

is inheritance from his/her parent, and leave a bequest of

$$x_{t+1} = \begin{cases} b_n(x_t) = (1-\alpha)[(1+r)(x_t+a+w_n)+w_n], & \text{if } x_t + a < f \\ b_{s1}(x_t) = (1-\alpha)[w_s + (1+i)(x_t+a-h)], & \text{if } f \le x_t + a < h \\ b_{s2}(x_t) = (1-\alpha)[w_s + (1+r)(x_t+a-h)], & \text{if } x_t + a \ge h \end{cases} \tag{26}$$

where $f = \frac{1}{i-r}[w_n(2+r) + h(1+i) - w_s]$.

After period t, there is no foreign aid, and the evolution of bequests over time satisfies the following rules:

$$x_{t+2} = \begin{cases} b_n(x_{t+1}) = (1-\alpha)[(1+r)(x_{t+1}+w_n], & \text{if } x_{t+1} < f \\ b_{s1}(x_{t+1}) = (1-\alpha)[w_s + (1+i)(x_{t+1}-h)], & \text{if } f \le x_{t+1} < h \\ b_{s2}(x_{t+1}) = (1-\alpha)[w_s + (1+r)(x_{t+1}-h)], & \text{if } x_{t+1} \ge h \end{cases} \tag{27}$$

From equations (26) and (27), it is clear that a temporary foreign at time t has the effect of increasing the bequests of aid recipients, thereby increasing the initial wealth of their descendants in period $t+1$. Consequently, in period $t+1$, there will be more people choose to invest in human capital. Moreover, to the extent that the temporary aid lowers the critical value $g(a)$, it also increases the long-run equilibrium relative size of skilled workers in the economy. Thus we have

PROPOSITION 4. *Temporary aid affects welfare creation and distribution in the recipient country via a similar mechanism as permanent aid. The main difference is that temporary aid affects initial wealth directly for only one period, after which the impact is indirectly through the increased bequests of aid recipients.*

4. FAVOURABLE LOAN

Now we consider the impact of foreign aid in the form of favourable loan provided to individuals who choose to borrow to invest in human capital. Assume that the interest rate for the favourable loan d, where $r < d < i$, and the maximum amount of this loan is l.

How will this favourable loan affect individuals' decisions? An individual may decide not to invest in human capital despite of the availability of the loan. He will leave a bequest of

$$b'_n(x) = (1-\alpha)[(1+r)(x+w_n)+w_n] \tag{28}$$

And enjoys a lifetime utility of

$$U'_n(x) = \ln[(x+w_n)(1+r)+w_n] + \varepsilon \tag{29}$$

where $\varepsilon = \alpha \ln \alpha + (1-\alpha)\ln(1-\alpha)$

An individual with a large inheritance ($x \geq h$) won't be affected by the favourable loan. He invests in human capital, leaves a bequest of $b'_{s1}(x) = (1-\alpha)[w_s + (1+r)(x-h)]$, and enjoys a life-time utility of

$$U'_{s1}(x) = \ln[w_s + (x-h)(1+r)] + \varepsilon \tag{30}$$

An individual with a small inheritance ($x < h$) may choose to borrow to invest in human capital. He now faces two types of loans, the favourable loan at an interest rate of d, and a market loan at the interest rate of i. If $x + l < h$, he will borrow the maximum amount l at the favourable rate, and the remainder at the market rate. His bequest is $b'_{s2} = (1-\alpha)[w_s - l(1+d) - (h-x-l)(1+i)]$, and his lifetime utility is

$$U'_{s2}(x) = \ln[w_s - l(1+d) - (h-x-l)(1+i)] + \varepsilon \tag{31}$$

If $x + l \geq h$, then he only needs to borrow at the favourable rate. His bequest is $b'_{s3}(x) = (1-\alpha)[w_s - (h-x)(1+d)]$, and his lifetime utility is

$$U'_{s3}(x) = \ln[w_s - (h-x)(1+d)] + \varepsilon \tag{32}$$

Similar to the cases above, we assume that investment in human capital has a higher payoff to an individual if the individual has sufficient funs to invest. This means, from equations (29) and (30), that:

$$w_s - h(1+i) \geq w_n(2+r)$$

For those individuals who need to borrow to invest in human capital, they will choose to invest as long as $U'_{s2}(x) \geq U'_n(x)$, that is

$$x \geq f(l) = \frac{1}{i-r}[w_n(2+r) + h(1+i) - w_s - l(i-d)]$$

In other words, individuals whose inheritance is smaller than $f(l)$ prefer not to invest in human capital. Human capital investment is, therefore, limited to individuals with large enough inheritance. Let D_t be the distribution of inheritances by individuals born in period t. This distribution satisfies

$$\int_0^\infty dD_t(x_t) = L$$

The number of skilled workers is $L_t^{s'} = \int_{f(l)}^\infty dD_t(x_t)$, and that for unskilled workers is

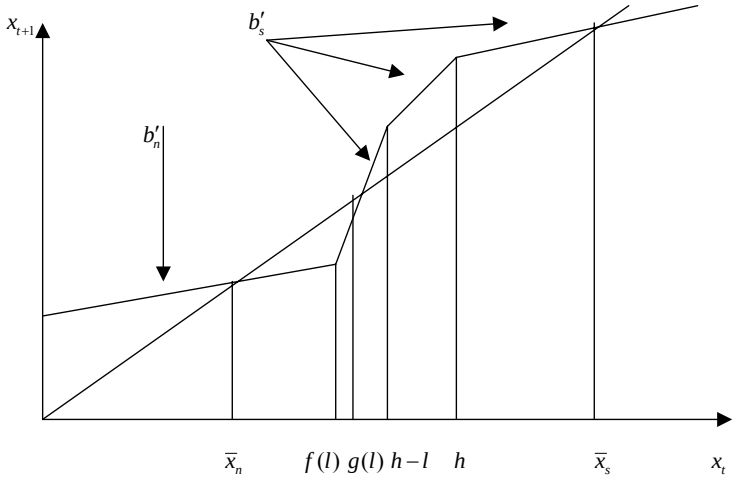
$$L_t^{n'} = \int_0^{f(l)} dD_t(x_t)$$

The evolution of inheritances over time is characterised by:

$$x_{t+1} = \begin{cases} b'_n(x_t) = (1-\alpha)[(1+r)(x_t+w_n)+w_n], & \text{if } x_t < f(l) \\ b'_{s1}(x_t) = (1-\alpha)[w_s - l(1+d) \\ \qquad -(h-x_t-l)(1+i)], & \text{if } f(l) \le x_t < h, x_t + l < h \\ b'_{s2}(x_t) = (1-\alpha)[w_s - (h-x_t)(1+d)], & \text{if } f(l) \le x_t < h, x_t + l \ge h \\ b'_{s3}(x_t) = (1-\alpha)[w_s + (x_t-h)(1+r)], & \text{if } x_t \ge h \end{cases} \tag{33}$$

The features of this evolution over time are depicted in Figure 2. In Figure 2, b'_n and b'_s describe the dynamic relationships between inheritance and bequest for unskilled and skilled workers, respectively. b'_n and b'_s intersect at where $x_t = f(l)$.

FIG. 2. Dynamic relationships between inheritance and bequest under favourite loan



As shown in Figure 2, individuals who inherit less than $f(l)$ do not invest in human capital and neither do their descendants in future generations. Their inheritances converge to a long-run level $\overline{x}_n$

$$\overline{x}_n = \frac{(1-\alpha)w_n(2+r)}{1-(1-\alpha)(1+r)}$$

Individuals who inherit more than $f(l)$ invest in human capital but after some generations, their descendants will choose not to invest. To ensure investment in human capital in all future generations, it is necessary that inheritance in period t is greater than the critical value $g(l)$

$$g(l) = \frac{(1-\alpha)[h(1+i) - w_s - l(i-d)]}{(1-\alpha)(1+i)-1}$$

Individuals whose inheritance is greater than $g(l)$, including those with inheritance more than h, invest in human capital and so will all their descendants. Their inheritances converge to $\overline{x}_s$

$$\overline{x}_s = \frac{(1-\alpha)[w_s - h(1+r)]}{1-(1-\alpha)(1+r)}$$

Similar to that in Figure 1, we assume that the steepest part of b'_s has a slope greater than 1, which means that $(1-\alpha)(1+i) > 1$. Given this assumption, it is easy to show that $g(l)$ decreases as l increases. Since the long-run number of unskilled workers is the number of individuals who inherit less than $g(l)$ in period t

$$L_t^{g(l)} = \int_0^{g(l)} dD_t(x_t)$$

The long-run number of skilled workers is $L - L_t^{g(l)}$, which increases as l increases. In other words, the larger is the maximum amount of favourable loans, the more individuals will choose to borrow to invest in human capital. The long-run level of average wealth is

$$\overline{x}_s - \frac{L_t^{g(l)}}{L}(\overline{x}_s - \overline{x}_n)$$

which increases as l increase. Therefore we have

PROPOSITION 5. *Foreign aid in the form of favourable loan encourages more individuals to borrow to invest in human capital. As a result, it increases the relative size of skilled workers in the long run and increases the average long-run wealth of the recipient economy.*

It should be noted that both permanent aid and favourable loans decrease the critical value of inheritance above which individuals will choose human capital investment generation after generation. The main between the two forms of aid is that permanent aid raises both the equilibrium wealth levels for unskilled and skilled workers, and the relative size of skilled workers. In contrast, favourable loans can only raise the average wealth by increasing the relative size of individuals belonging to the skilled group.

5. CONCLUSION

In this paper, we have explored a plausible mechanism through which foreign aid may affect wealth creation and distribution in the recipient

country. We have considered three types of foreign aid, permanent foreign aid, temporary aid targeted at unskilled workers, and favourable loans for investment in human capital. All types of aid are found to have the impact of encouraging more individuals to invest in human capital thereby increasing the relative size of skilled individuals which in turn increases the average wealth of the economy. Permanent aid has the largest impact, followed by favourable loans and temporary aid.

The key feature of our model is that there are two long-run equilibria. If foreign aid is sufficiently large such that the initial wealth of all individuals in a given period is greater the critical value, it is theoretically possible that all individuals will choose to invest in human capital, and there will only be a single equilibrium with a high level of wealth although it is unrealistic to rely on foreign aid to push an economy to a rich long-run equilibrium.

Finally it is worth noting that this paper investigates only one possible mechanism through which foreign aid may improve the welfare of the recipient country. It has not taken into account the issue of fungibility of foreign aid, nor does it consider any interactions between foreign aid and physical capital accumulation. We therefore would be reluctant to draw definite policy implications from the results. Future research is warranted to study the interactions between foreign aid, investment in physical and human capital, and policy environment of the recipient country.

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