Welfare Implication of Foreign Aid and Domestically Funded Microfinance Programs

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Abstract

Microfinance as well as women's economic participation has welfare implications in developing countries. A two-sector model has been developed to analyze these implications. The findings suggest that the welfare cost of microfinance depends on the country's overall level of development and society's attitude towards women's economic participation. The difference in the welfare cost of government funded microfinance and donor funded microfinance programs can be minimized by increasing the administrative efficiency of public spending on microfinance.

Keywords: Welfare, Poverty, Gender

1. Introduction

Many studies identified social and economic benefits of microfinance programs. The benefits include the reduction of fertility rate (Hashemi and Schuler 1994, 1996, Steele, Amin and Naved 1998, Basher 2007), increased access to health and schooling of the offspring (Pitt et al. 1998), improvement in the bargaining position of women within the household (Holvet 2005, Kabeer 1999, 2001), and the increase of household and national income (Alamgir 1998, Pitt and Khandkar 1998, Basher 2001).

Many countries, motivated by the demonstrated social and economic benefits, are currently financing microfinance programs through budgetary allocation in addition to foreign aid. For example, about 25 percent of total microfinance programs in Bangladesh are publicly funded. . Use of public funds for microfinance affects other public works which have direct and indirect welfare implications. Microfinance programs help the rural women to build a network- social capital (Note 1) - among the participants, which is welfare augmenting. At the same time, they slacken the existing network of the rural women with their neighbors and relatives who do not concur to women's economic participation and mobility, which is welfare diminishing.

Despite its importance, the welfare implication of the microfinance programs, is not very is not well-researched in the literature. This paper develops a two-sector model involving the formal and the informal sectors to analyze this issue. The formal sector uses the inelastically supplied male labor only whereas the informal sector uses both male and female labor.

The finding of the model suggests that the welfare implication of microfinance can be time invariant for three reasons. First, the marginal resource cost of microfinance decreases overtime as an outcome of learning by doing. Second, the marginal benefit of resources forgone to finance the microfinance activities decreases as the economy grow. Finally, the welfare diminishing effect of participation in microfinance activities decreases over time as the society becomes more receptive to such participation (Note 2).

2. The Model

2.1 Household utility

Majority of the participants of microfinance activities are women. In many cases, their participation involves defiance of the existing social and cultural norms which teach them confinement to specific tasks (Note 3), and restriction to the defined social spaces. Women who go beyond the defined limits to participate in microfinance and other economic activities are sometimes laughed and pointed at, and denied any kind of help by neighbors in the rainy days. However, the microfinance participants form a network of mutual trust and reciprocity to help one another in times of need. Each participant also contributes 5 percent of the loan to a common fund (Note 4) to hedge against any possible rainy day. Thus participation in microfinance activities reduces their reliance on neighbors and the cost of their economic participation. To capture the above contribution of the microfinance activities, the utility function of the representative household is assumed to be

$$U(C) + G(M).V(L_w) \tag{1.1}$$

$$U_c > 0, U_{cc} < 0, V_L (= \frac{dV}{dL_w}) < 0, V_{LL} < 0, U_{cL} = V_{Lc} = 0$$

where,

M = An index for the microfinance activities

C = The level of household consumption

The representative household is assumed to be endowed with two types of labors; male (L_m) and female (L_w). Household utility depends on the level of consumption and supply of female labor in economic activities, and assumed to be additively separable. The household derive positive but diminishing marginal utility from consumption. The utility function, being additively separable, also implies women's economic participation does not affect the marginal utility of consumption.

The second term of the utility function, $G(M).V(L_w)$, represents the welfare loss involved with women's economic participation. By imposing the appropriate restrictions on $G(M).V(L_w)$, we can capture different types of impacts of microfinance activities. For example, following restriction would imply that participation of microfinance does not have any impact on cost of women's economic participation.

(i) $G(F) = 1$, and

(ii) $G_M = \frac{dG(M)}{dM} = 0$

In contrast, the following restrictions would imply that participation of microfinance would reduce the cost of women's economic participation.

(ii) $G(M) < 1$, and

(iv) $G_M = \frac{dG(M)}{dM} < 0$

2.2 Production

The economic environment is represented by a two-sector closed economy. The sectors are formal and informal. Both sectors produce a homogenous commodity which can be either consumed or converted into capital without any cost. The formal sector uses capital (K) and male labor. The production function of the formal sectors is $F(K, L_{mf})$, where L_{mf} is the amount of male labor used in this sector and also.

$$F_K = \frac{dF}{dK} > 0, F_L = \frac{dF}{dL_{mf}} > 0, F_{KK} < 0, F_{LL} < 0, F_{KL} > 0.$$

Microfinance is used in the informal sector which uses both male and female labor, and has very limited access to the formal capital market. It is assumed that the informal sector operates only with a fixed amount of capital.

The amount of loan available to the informal sector depends on the scale of the microfinance activity. If the scale goes up, the amount of loan available to household can also increase as a result of simultaneous participation in more than one microfinance programs. Household always exploits any opportunity exhaustively to get loan. Therefore, availability of loan is assumed to be exogenous from household's point of view. Formally, the loan available to the informal sector is assumed to be $N(M)$, where, $N^{/}(M) > 0$. So the production function in the informal sector is $S(L_w, N(M), 1 - L_{mf})$, where, $S_L > 0, S_{LL} < 0, S_M > 0, S_{LM} > 0$.

2.3 Government

Government collects lump-sum taxes from the households, provides transfers to them, and issues short-term bonds to finance the deficit. At any instant of time, government is subject to the following flow constraint

$$\dot{B} = rB + T_R - T_L \tag{1.2}$$

Where, $B =$ Holdings of government bonds by households

$r =$ Short-term real interest rate

$T_L =$ Lump-sum tax; $T_R =$ Transfer provided to the household by government

This equation asserts that government finances the deficit by issuing additional bond.

2.4 Household optimization

The representative household is assumed to have an infinite planning horizon, and perfect foresight to choose consumption, supply of female labor, capital stock, sectoral allocation of labor, and holdings of government bonds in order to maximize

$$\int_0^\infty [U(C) + G(M).V(L_w)]e^{-\beta t} dt \tag{2.1}$$

subject to the budget constraint

$$\dot{K} + \dot{B} + C = F(K, L_{mf}) + S(L_w, N(M), 1 - L_{mf}) + rB - T, \tag{2.2}$$

and initial conditio

$$B(0) = B_0, \quad K(0) = K_0 \tag{2.3}$$

where,

$$T = T_L - T_R$$

$$\beta = \text{Rate of time preference}$$

Household considers T, β and r as given in maximizing utility. The Hamiltonian of the above problem is

$$\mathrm{H} = [\mathrm{U(C)} + \mathrm{G(M).V(L_w)}]\mathrm{e}^{-\beta \mathrm{t}} + \lambda\, [\mathrm{F(K, L_{mf})} + \mathrm{G(L_w, N(M), 1 - L_{mf})} + \mathrm{rB} - \mathrm{T} - \mathrm{C} - \dot{\mathrm{K}} - \dot{\mathrm{B}}]\mathrm{e}^{-\beta \mathrm{t}}$$

where λ is the co-state variable associated with the budget constraint and represents the marginal utility of wealth.

The optimality conditions are as follows;

$$U_c(C) = \lambda \tag{2.4}$$

$$G(M).V_L(L\_w) = -\lambda\, \mathrm{S_L} \tag{2.5}$$

$$F_L = S_L \tag{2.6}$$

$$\dot{\lambda} = \lambda(\beta - F_K) \tag{2.7}$$

$$\dot{\lambda} = \lambda(\beta - r) \tag{2.8}$$

$$\lim_{t\to\infty} \lambda K e^{-\beta t} = 0 \tag{2.9}$$

$$\lim_{t\to\infty} \lambda B e^{-\beta t} = 0 \tag{2.10}$$

The first three equations are efficiency conditions. Equation (2.4) asserts that for the consumer to be in equilibrium, the marginal utility of consumption must be equal to the marginal utility of wealth. Equation (2.5) implies the marginal disutility of an additional unit of female labor has to be equal to the increment in consumption weighted by the marginal utility of consumption. Equation (2.6) shows that the allocation of male labor between formal and informal sector is determined by the equalization of its marginal product in these two sectors. Equations (2.7) and (2.8) represent the intertemporal arbitrage condition, and equate the rate of return from consumption to the rate of return from capital and short-term interest rate. Equations (2.9) and (2.10) are the transversality conditions and assert that as long as the agent assigns some positive marginal value to assets, the present discounted value of its stock at the end of the planning horizon must be reduced to zero. Otherwise, household would be wasting what would be a valuable asset. Substituting equation (1.2) into the budget constraint faced by the household (2.2) leads to the product market clearing constraint

$$\dot{K} = F(K, L_{mf}) + S(L_w, N(M), 1 - L_{mf}) - C \tag{2.11}$$

This equation describes the short-term market clearing condition, and implies that total output must be either consumed or accumulated as additional capital stock. Note that although microfinance (M) affect the production of the informal sector, they do enter into domestic resource constraint. This is due to the assumption that these institutions are financed by foreign grant, and therefore do not use up any domestic resources. If microfinance is financed by government, assume that $P(M)$ represents the total resources required to finance M amount of microfinance activity. In that case government budget constraint (1.2), and the market clearing condition (2.11) will be respectively

$$\dot{B} = rB + T_R + P(M) - T_L \tag{1.2$'$}$$

$$\dot{K} = F(K, L_{mf}) + S(L_w, N(M), 1 - L_{mf}) - C - P(M) \tag{2.11$'$}$$

2.5 Macroeconomic equilibrium and dynamics of the system

Equations (2.4)-(2.6), can be simultaneously solved for C, L_{mf} and L_w in the form:

$$C = C(\lambda, K, M) \tag{2.12}$$

$$L_w = L_w(\lambda, K, M) \tag{2.13}$$

$$L_{mf} = L_{mf}(\lambda, K, M) \tag{2.14}$$

Combining (2.7) and (2.8), we obtain the equality between the interest rate and the marginal product of capital;

$$r = F_K(K, L_{mf}(\lambda, K, M)) \tag{2.15}$$

Equation (2.7), (2.8) and (2.15) yield the intertemporal arbitrage relationship

$$\beta - \frac{\dot{\lambda}}{\lambda} = r = F_K(K, L_{mf}(K, \lambda, M)) \tag{2.16}$$

It asserts that the rates of return on the two assets in the economy (capital and bond) must be equal to the rate of return on consumption given by the left-hand side of (2.16). By taking the time derivative of (2.4) and using (2.16) we get,

$$\frac{\dot{C}}{C} = \theta[F_k(K, L_{mf}(K, \lambda, M)) - \beta] \tag{2.17}$$

where, $\theta = -\frac{U_c}{U_{cc}.C}$, and represents the elasticity of marginal utility of consumption, which can also be interpreted as instantaneous elasticity of substitution between consumption over time.

The dynamics of the system are obtained by substituting the solutions for C, L_{mf} and L_w, presented in (2.12)-(2.14), into the product market clearing condition (2.11) and the equation (2.17), rewriting them as

$$\dot{K} = F\left\{K, L_{mf}\left(K, M, \lambda\right)\right\} + \mathrm{S}\left\{\mathrm{L_w}\left(\mathrm{K, M}, \lambda\right), \mathrm{N(M)}, 1 - \mathrm{L_{mf}}\left(\mathrm{K, M}, \lambda\right)\right\} - \mathrm{C(K, M}, \lambda) \tag{2.18}$$

$$\dot{C} = \theta C\left(K, M, \lambda\right)[F_K(K, L_{mf}\left(K, M, \lambda\right) - \beta] \tag{2.19}$$

Equations (2.18) and (2.19) comprise an autonomous dynamic system that jointly determines the intertemporal evolution of K and C, and hence the economy as a whole. The steady state of the economy, reached when $\dot{K} = \dot{C} = 0$,, is obtained from the equations (2.18) and (2.19) as follows;

$$F\left\{K, L_{mf}\left(K, M, \lambda\right)\right\} + \mathrm{S}\left\{\mathrm{L_w}\left(\mathrm{K, M}, \lambda\right), \mathrm{N(M)}, 1 - \mathrm{L_{mf}}\left(\mathrm{K, M}, \lambda\right)\right\} = \mathrm{C(K, M}, \lambda) \tag{2.20}$$

$$F_K\left(K, L_{mf}\left(K, M, \lambda\right)\right) = \beta \tag{2.21}$$

Equation (2.20) describes the steady-state equilibrium in the product market when investment is zero. Equation (2.21) states that in the long run the marginal product of capital equals to the rate of time preference. Given the assumption that output can be consumed or converted into capital without any cost, accumulation of one unit of capital means sacrifice of one unit of consumption. Therefore, the increment in consumption from the accumulated capital has to be sufficient enough to compensate the rate of time preference. Otherwise, the agent will accumulate or consume capital. Because of the homogeneity of $F(.)$, (2.21) determines the long run capital-labor ratio. Once the total labor in the formal sector is determined, supply of the female labor in the shadow economy will then be determined by the equality of the marginal product of labor across sectors.

Linearizing the system (2.18) and (2.19) around the steady-state equilibrium, the dynamics can be approximated by the following equation in K and λ:

$$\begin{pmatrix} \dot{K} \\ \dot{C} \end{pmatrix} = \begin{pmatrix} \omega_{11} & \omega_{12} \\ \omega_{21} & \omega_{22} \end{pmatrix} \begin{pmatrix} K - \tilde{K} \\ C - \tilde{C} \end{pmatrix} \tag{2.22}$$

where,

$$\omega_{11} = F_K + S_L \frac{dL_w}{dK}, \qquad \omega_{12} = -1$$

$$\omega_{21} = \left(F_{KK} + F_{KL}\frac{dL_{mf}}{dK}\right), \qquad \omega_{22} = 0$$

The determinant, $(F_{KK} + F_{KL}\frac{dL_{mf}}{dK})$, is negative, the system has one positive and one negative root, and therefore, is saddle path stable.

3. Welfare Effects of Microfinance Programs

In this section we analyze the welfare of the representative household following a permanent increase in microfinance activities. With all households being assumed to be identical, the welfare implications for the household are then extrapolated to represent those of the aggregate economy. The welfare of the households is measured in terms of utility, and we consider both the time path of the instantaneous utility level and the overall accumulated welfare over the infinite planning horizon.

Following Turnovsky (2000), the instantaneous level of utility of the representative household at time t, $Z(t)$ is specified to be

$$Z(t) = U\big(C(t)\big) + G(M).V(L_w(t)) \quad (5.1)$$

with the overall accumulated utility over the infinite planning horizon being the discounted value of (5.1), namely:

$$W = \int_0^\infty Z(t)e^{-\beta t} = \int_0^\infty [U\big(C(t)\big) + G(M).V\big(L_w(t)\big)]e^{-\beta t}dt \quad (5.2)$$

Differentiating $Z(t)$ with respect to 'M' we get;

$$\frac{dZ(t)}{dM} = U_c\big(C(t)\big)\frac{dC(t)}{dM} + G_M V\big(L_w(t)\big) + G(M).V_L(L_w(t).\frac{dL_w(t)}{dM} \quad (5.3)$$

Using the optimality condition (2.4) and (2.5), equation (5.3) becomes

$$\frac{dZ(t)}{dM} = U_c\big(C(t)\big)\{\frac{dC(t)}{dM} - G_L\frac{dL_w(t)}{dM}\} + G_M V\big(L_w(t)\big) \quad (5.4)$$

By differentiating the product market clearing condition (3.11) with respect to M, we get

$$\frac{d\dot{K}(t)}{dM} = F_K\frac{dK(t)}{dM} + S_M + S_L\frac{dL_w(t)}{dM} - \frac{dC(t)}{dM} + \frac{dL_{mf}(t)}{dM}(F_L - S_L) \quad (5.5)$$

Optimality condition (3.6) and equation (5.5) enable us to rewrite equation (5.4) as follows;

$$\frac{dZ(t)}{dM} = U_c\big(C(t)\big)(S_M - P_M) + G_M V\big(L_w(t)\big) + U_c\big(C(t)\big)\{F_K\frac{dK(t)}{dM} - \frac{d\dot{K}}{dx}\} \quad (5.6)$$

To get a linear approximation to the resulting welfare, I assume that $U_c\big(C(t)\big)$ is evaluated at steady state, so that it remains constant over time. It is evident form equation (5.6) that the effect of an increase in microfinance activities on the instantaneous welfare can be broken down into three components. The first component $U_c S_M$ includes the effect of the increase in consumption as a result of increase in productivity in the informal sector. The second term, $G_M V\big(L_w(t)\big)$ captures the reduction in the welfare loss involved with women's economic participation, and this is always positive.

The final component, $\{F_K\frac{dK(t)}{dM} - \frac{d\dot{K}(t)}{dM}\}$, consists of the inter-temporal influences that operate through the response of the capital stock, and corresponds to what has been termed as *intertemporal capital accumulation effect* in literature (Turnovsky 2000). It depends on how the changes in microfinance activities affect the rate of capital accumulation $\frac{d\dot{K}(t)}{dM}$, and how in the resulting changes in capital stock in turn affect output of the formal sector, $F_K \frac{dK(t)}{dM}$. These two effects are opposite to each other. If $\frac{d\dot{K}(t)}{dM} > 0$, increase in microfinance activities will be welfare deteriorating in the short run, but as capital accumulates over time, the higher level of output permits higher consumption, thus this is welfare improving in the long run.

Denoting the roots of the system (2.22) by μ_1 and μ_2, where $\mu_1 < 0$ and $\mu_2 > 0$, the purely stable path of adjustment of capital stock starting from the initial stock of capital $K = K_0$ is described by

$$K = \tilde{K} + (K_0 - \tilde{K})e^{\mu_1 t} \tag{5.7}$$

From equation (5.7), we can derive

$$\frac{dK}{dM} = (1 - e^{\mu_1 t})\frac{d\tilde{K}}{dM}, \text{ and } \frac{d\dot{K}}{dM} = -\mu_1 e^{\mu_1 t}\frac{d\tilde{K}}{dM}$$

Substituting these results into (5.6), we get

$$\frac{dZ(t)}{dM} = U_c.S_M + G_M V\big(L_w(t)\big) + U_c\{F_K(1 - e^{-\mu_1 t}) + \mu_1 e^{-\mu_1 t}\}\frac{dK(t)}{dM} \tag{5.8}$$

By evaluating equation (5.8) at $t = 0$, and $t = \propto$ we can get the immediate and steady state effects as follows;

Immediate impact:
$$\frac{dZ(0)}{dM} = U_c S_M + G_M V\big(L_w(0)\big) + U_c \mu_1 \frac{dK(0)}{dM} \tag{5.9}$$

Steady-state impact**:**
$$\frac{dZ(t)}{dM} = U_c S_M + G_M V(L_w) + U_c F_K \frac{dK}{dM} \tag{5.10}$$

The intertemporal trade off involved in the welfare effects that work through the *capital accumulation* becomes clear from the comparison between equations (5.9) and (5.10). The exact nature of this tradeoff depends on the empowerment. If microfinance involves reduction of cost of women's economic participation, $\frac{d\tilde{K}}{dM}$ will be negative (Note 5) implying an initial enhancement of welfare, i.e., $U_c \mu_1 e^{\mu_1 t}\frac{d\tilde{K}}{dM}$ is positive. But such enhancement in welfare is eventually reversed due to the fall in capital stock in the long run, i.e., $U_c F_K \frac{d\tilde{K}}{dM}$ is negative. If microfinance activities involve empowerment, $\frac{d\tilde{K}}{dM}$ can be positive or negative, so the increase in microfinance activities can also be welfare deteriorating or enhancing, but it is also reversed in the steady state.

The linear approximation of the overall level of welfare along the stable path, $Z(t)$ is as follows;

$$Z(t) = \tilde{Z} + [Z(0) - \tilde{Z}]e^{\mu_1 t} \tag{5.11}$$

Substitution of (5.11) into (5.2) and integrating, yields

$$W = \frac{\tilde{Z}}{\beta} + \frac{[Z(0) - \tilde{Z}]}{\beta - \mu_1} \tag{5.12}$$

The first term of equation (5.12) is the capitalized value of instantaneous welfare, $Z(t)$, evaluated at the steady state. It is the level of welfare that would result if the steady state were attained immediately. The remaining terms reflects to the adjustment to this as steady state is reached only gradually along the transitional path.

By differentiating equation (5.12) with respect to M and using equations (5.9), (5.10), and the equilibrium condition $F_K = \beta$, we get the following;

$$\frac{dW}{dM} = \frac{1}{\beta}\{U_c S_M + G_M \left\{V\big(L_w(0)\big) - \frac{\mu_1}{\beta - \mu_1}\left[V(\widetilde{L_w}) - V\big(L_w(0)\big)\right]\right\}\} \tag{5.13}$$

If $V\big(L_w(t)\big)$ is always evaluated at steady state, the reduction of welfare loss can be approximated as $G_M V(\widetilde{L_w})$,, which remains constant over time. In that case equation (5.13) can be rewritten as

$$\frac{dW}{dM} = \frac{1}{\beta}\{U_c S_M + G_M V(\widetilde{L_w})\} \tag{5.14}$$

Equation (5.14) implies the net welfare effect of a permanent increase in microfinance activities is the consumption effect due to increase in productivity plus the reduction in the cost of women's economic participation. Total welfare effect is positively related with empowerment.

4. Analysis of Government Financed Microfinance Activities

The analysis of microfinance activities so far is based on the assumption that they are financed by the foreign aid. Therefore, the increase in microfinance activities does not involve any direct implications for domestic resource constraint. In this section we present the results of the same analysis for government financed microfinance activities. Suppose, $P(M)$ represents the total resources required to finance M amount of microfinance activities, where $P_M = \frac{dP(M)}{dM}$ represents the marginal cost of financing microcredit activities.

Now government budget constraint (2), and the market clearing condition (3.11) will be respectively

$$\dot{B} = rB + T_R + P(M) - T_L \tag{2'}$$

$$\dot{K} = F\big(K, L_{mf}\big) + S\big(L_w, N(M), 1 - L_{mf}\big) - C - P(M) \tag{3.11'}$$

Equation (5.5) will be as follows;

$$\frac{d\dot{K}(t)}{dM} = F_K \frac{dK(t)}{dM} + S_M + S_L \frac{dL_w(t)}{dM} - \frac{dC(t)}{dM} + \frac{dL_{mf}(t)}{dM}\big(F_L - S_L\big) - P_M \tag{5.5'}$$

The instantaneous and overall welfare effects of a permanent increase in microcredit activities will now be respectively

$$\frac{dZ(t)}{dM} = U_c\big(C(t)\big)(S_M - P_M) + G_M V\big(L_w(t)\big) + U_c\big(C(t)\big)\{F_K \frac{dK(t)}{dM} - \frac{d\dot{K}}{dx}\} \tag{5.6'}$$

$$\frac{dW}{dM} = \frac{1}{\beta}\{U_c(S_M - P_M) + G_M\left\{V\big(L_w(0)\big) - \frac{\mu_1}{\beta-\mu_1}\left[V\big(\widetilde{L_w}\big) - V\big(L_w(0)\big)\right]\right\}\} \quad (5.13^{/})$$

As can be seen from the comparison between equations (5.6) and (5.6$^{/}$), and (5.13) and (5.13$^{/}$), that both instantaneous and overall welfare effects are now reduced by $U_c P_M$ amount. This represents the crowding out effect. Any increase in spending on the microfinance activities reduces the total disposable income for other activities lump-sum tax. $-U_c P_M$ represents the effect of such reduction in disposable income.

Welfare cost of public funds used for microfinance can vary over time for different reasons. First, the marginal resource cost, i.e., resource required to finance one unit of microfinance, decreases overtime as an outcome of learning by doing. Second, the marginal utility of resources forgone to finance the microfinance decreases as the economy grows over time. Finally, the welfare diminishing effect of women's participation in microfinance and economic activities decreases over time as the society becomes more receptive to such participation (Note 6).

5. Conclusion

Microfinance is becoming an important part of the economies of the developing countries with increasing use of public funds. A holistic framework to analyze the welfare implication of microfinance is still missing in the literature. This paper develops a two-sector model to fill up this gap. The two-sector model, as developed in this paper, involves the formal and the informal sectors, where the inelastically supplied male labor is used in both sectors, but the elastically supplied female labor is used only in the informal sector.

The findings suggest that the welfare implication of microfinance depends on marginal utility of consumption and impacts of microfinance on women's economic participation. From policy perspective, it means removal of hurdles to women's economic participation will reduce the welfare cost of resources used for microfinance. The difference between the externally funded and government funded microfinance depends on the marginal utility of consumption and marginal cost of microfinance. This difference can be minimized by increasing the administrative efficiency of microfinance institutions.

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Notes

Note 1. Informal network works as a source for financial and non-financial support in the rainy days.

Note 2. Basher (2007) finds that the percentage share of participants who did not face any criticism from family member and neighbors for joining the Grameen Bank has increased by 4.31 percent every year.

Note 3. Mainly the household and domestic chores.

Note 4. This fund is known as 'group fund'.

Note 5. If microfinance does not reduce the cost of women's economic participation, male labor moves switch from formal to informal sector.

Note 6. Basher (2007) finds that the percentage share of participants who did not face any criticism from family member and neighbors for joining the Grameen Bank has increased by 4.31 percent every year.

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