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The Two Poverties

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There are at least two distinct and inconsistent views of poverty. These views, which can be called "poverty as desperation" and "poverty as vulnerability", have different implications about anti-poverty policy. It is important to confront this conflict and to try to devise empirical stategies which will help us distinguish between these views. JEL codes D31, I32, I38.

Are the poor just like you and me except in that they have less money, to invert Hemingway's famous line? Or is it useful to think of them as being subject to different pressures from the rest of the population and therefore sometimes making choices that are very different? For a long time the dominant view in economics was that the distinction had only descriptive usefulness, that behaviorally the poor were much like anyone else.[1] One of the most important developments of the last two decades within formal economics, fueled by attempts to rigorously study the evolution of the distribution of consumption and wealth, is a movement away from this position. There is growing emphasis on poverty as a distinct analytical concept rather than purely as a category of description.[2] That is, less "who are the poor" and more "what do they do and why"? The roots of this shift are complex but an important part came from developments in microeconomics: A better understanding of preferences towards risk and the sources of asset market failures made it easier to see why there may be problems that affect the poor more than everybody else. The waning of the neo-Marxist and neo-Ricardian models, with their automatic assumption that the poor were workers and owned no assets, also made it easier to focus on the fact that the poor, like everybody else, make life-time choices, albeit under less favorable circumstances.

It has been more than twenty years since this new literature was launched with the work of people like Kanbur (1979), Kihlstrom and Laffont (1979) and Loury (1981). It remains true, however, that the conceptualization of poverty in this literature is usually implicit, i.e., in the form of an

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1. A very influential statement of this view is to be found in Schultz (1964).
2. This is not to say that descriptions are unimportant. The work of Amartya Sen (see Sen, 1999) and others on who we should think of as the poor have had an enormous impact on how we assess the effectiveness of anti-poverty policies.

assumption in the model, rather than explicit: "the right way to model poverty is...". The goal of this paper is to make the conceptualization explicit. In the process, it will emerge that there are at least two distinct and, *prima facie*, inconsistent views of poverty in these models, which I will call these "poverty as desperation" and "poverty as vulnerability". These views have rather different implications about anti-poverty policy and this makes it important that we confront the conflict between them.

Poverty as Desperation

The poor are different because they are desperate: they have too little to lose.[3] To give formal content to this idea, imagine a world where there is one good produced and a population of identical people who each live for one period and always have one child. Each person starts life with an endowment which her parent gave her. Her life is simple, verging on the drab. At the beginning of her life, she chooses among income earning opportunities (which we will describe later). At the end she decides on what to do with her realized income – she can leave it to her child or eat it herself. For simplicity, assume that she has Cobb-Douglas-like preferences over consumption (c) and bequest (b):

$$U(c,b) = \frac{A[c^{1-\beta}b^{\beta}]^{1-\alpha}}{1-\alpha}, 0<\beta<1, 1>\alpha>0, A>0$$

Since she allocates her end-of-period wealth between these two uses, this immediately implies that if her end-of-period income (or wealth) is y:

$$c = (1-\beta)y, \quad b = \beta y.$$

It follows that her (indirect) utility from having an income of y is:

$$V(y) = \frac{\tilde{A}y^{1-\alpha}}{1-\alpha}.$$

The end-of-period income, y, should clearly depend on beginning-of-period endowment, w, though to understand the exact nature of the dependence, we would need to say something about the nature of income-earning opportunities in this economy. Moreover, choices made during the person's lifetime, C, and luck in the form of some random shock, θ, must play a role. For the time being, we just write the income function as:

$$y = y(\omega,\theta,C), \quad y_w > 0.$$

While we do not pretend that this is, or ought to be, all of life, this framework does capture important aspects of it. A large part of what we start out life with – health, education, land, money – comes from our parents, and is mostly a result of a choice that they make (or rather, one we make together). While the label we attach to the bequest [4] may vary (and, indeed, there are usually multiple types of bequests), to assume that

3. This idea is implicit in the models that draw the link between credit market imperfections and the persistence of poverty. See, among other papers, Aghion and Bolton (1997), Banerjee and Newman (1993), Galor and Zeira (1993), Piketty (1997) and Ghatak, Morelli and Sjostrom (1998). It is explicit in Banerjee and Newman (1994).

4. To the above list of possible types of bequest, we might add "culture" where culture is interpreted narrowly as attitudes toward work and corruption. One "learns" this kind of culture either from one's parents or from one's peer group, and in either case what we learn reflects choices made by our parents (which include our choice of peer group).

one starts life with a bequest from one's parent and then makes choices about the kind of income one will get fits the pattern of most people's lives.

With this somewhat elaborate preamble, we are now ready to return to the problem of conceptualizing poverty. The simplest way to capture the idea that the poor are desperate is to assume that there is some bound on how low $V(\cdot)$ can get. That is to say, there is some effective utility function,

$$V^*(y) \equiv \max [\underline{V}, V(y)].$$

In other words, if the end-of-period income ends up being such that $V(y) < \underline{V}$, the person's utility will be $\underline{V}$, rather than $V(y)$.

There are several possible interpretations of $\underline{V}$. It could be the result of social policy: $\underline{V}$ may just embody the guarantees given by the welfare system. Or it may reflect private generosity (or the lack of it) – friends and neighbors will simply not allow any one to fall below $\underline{V}$. Or, less obviously, it could reflect the failure of imagination: perhaps people cannot conceive of being worse off than $\underline{V}$. In other words, beyond some point, having less to eat either really stops mattering (perhaps because the body gives up) or stops mattering in the mind of someone who is not yet there but is thinking of it as a possibility. The interesting case for us, obviously, is the one in which for some choice c and some random realization θ:

$$V(y(0, \theta, c)) < \underline{V}.$$

That is, for someone who starts with wealth 0, and therefore for those close enough to 0 as well, the constraint that $V(\cdot) \geq \underline{V}$ is sometimes binding. To see what this can tell us about poverty, let us use this assumption in a model of credit.

Consider the following specialization of our basic model: Assume that once one gets one's bequest, one has the choice of putting it in the bank (where it earns a gross interest rate r) and going to work for a wage, W, or starting a business. If one starts a business, the rate of return on each dollar invested in the business up to $\bar{I}$ is $R>r$, the market interest rate, and there is never any reason to invest more than $\bar{I}$. Starting a business is however more work: let us assume that starting a business has disutility of effort, E, whereas working has no disutility.

It remains to say something about credit itself. Our typical agent has a wealth of ω, but may want to invest an amount $I>\omega$. The constraint comes from the possibility of borrower misbehavior. Once a borrower has borrowed and invested the money, she has no obvious reason to want to repay. What stops her from defaulting is the fact that the lender will come after her (legally or otherwise) and will try to extract the money. Let us assume that a borrower who tries not to repay gets away with it with probability q. With probability $1-q$, she gets caught and suffers having her entire income confiscated, i.e., she ends up with an end-of-period income of 0. Assume $V(0) < \underline{V}$.

A borrower who defaults therefore has an expected utility of:

$$V^{*\,dishonest} = qV^*(IR) + (1-q)\underline{V},$$

which she will compare with:[5]

$$V^{*\,honest} = V^*(IR-(1-\omega)r).$$

She will prefer not to default if:

5. Since she has wealth ω, $I-\omega$ what she borrows.

$$V^{*\,dishonest} = V^*(IR-(1-\omega)r) \geq qV^*(IR) + (1-q)\underline{V} = V^{*\,dishonest}$$

Therefore, the maximum amount anyone can invest starting with wealth of ω is given by $I(\omega)$, defining $V^*(IR-(1-\omega)r) = qV^*(IR) + (1-q)\underline{V}$.

To avoid keeping track of many cases, let us assume ω is large enough that $V(\omega r) \geq \underline{V}$. Using the expression for V^* we now have:

$$V(I(R-r) + \omega r) \geq q \max\{V(IR), \underline{V}\} + (1-q)\underline{V}. \quad (1)$$

The two sides of this equation are drawn in figures 1a and1b as functions of I.

These are the two cases: In Figure 1a the two curves intersect, which gives us a finite investment cap $I(\omega)$. An increase in ω pushes $V^{*\,honest}$ up and therefore raises the investment cap. Richer people get to invest more. In Figure 1b there is no intersection and consequently no limit to the amount she can borrow.

The basic logic behind this credit limit comes from the fact that for relatively low values of ω, the left-hand side may not be much greater than $\underline{V}$. As a result, the borrower cannot lose very much by trying to default, while she may indeed gain a lot. As ω becomes larger, she has more to lose and her investment cap moves up as a result.

This intuition is confirmed by looking at $\underline{V}$. Raising $\underline{V}$ raises $V^{*\,dishonest}$ and therefore exerts downward pressure on the investment cap. If the borrower has less to lose, she gets to borrow less.

A related point emerges when we look at the condition for getting our Figure 1a rather than Figure 1b. For our assumed preferences,

Figure 1a.

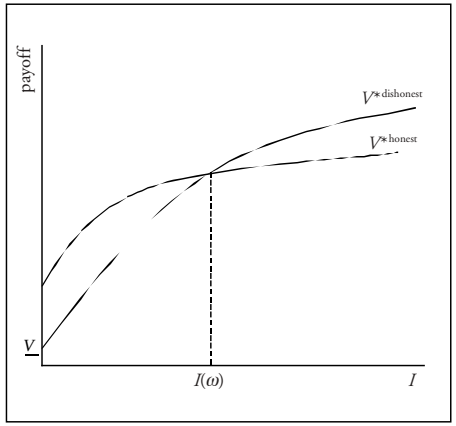
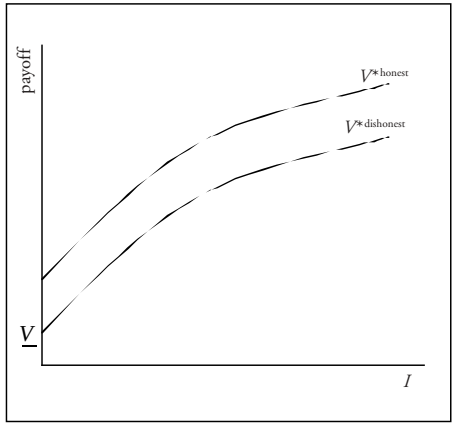


Figure 1b.



for the case where I is large enough, the condition turns out to be:[6]

$$R - r < q^{\frac{1}{1-\alpha}}R.$$

6. This follows from directly substituting the expression for the utility function into the inequality $V(I(R-r)+\omega r) < qV(IR) + (1-q)V$ and looking at the effect of making I large.

The reader will recognize α to be the coeficient of relative risk aversion. Note that as α goes up, this condition become harder and harder to satisfy, and for α close to 1, since $q^{\frac{1}{1-\alpha}}$ is close to 0, it cannot be satisfied.[7] In other words, the more risk averse the investor, the less likely it is that she faces a credit limit. Once again, this ought to make sense: the credit limit comes from the fact that she is too willing to gamble. Making it costlier to gamble (by making her risk averse) acts as an obvious antidote.

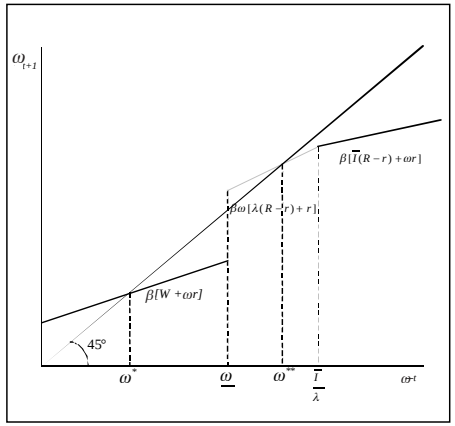
We summarize this discussion in:

Claim 1 *People may face investment caps in this model. Richer people will face less stringent investment caps. Making the minimum guaranteed utility level higher makes the investment cap more stringent. Finally, more risk averse people will face less stringent investment caps.*

The first, second and third part of this result would hold in most models of imperfect credit markets. The fourth property is probably more specific to a class of models, though given that it is driven by the fact that defaulting increases risk, it ought to be relatively robust.

What does this model of credit limits and investment caps tell us about investment behavior among the poor? To fix ideas, let $\alpha = 0$ so that $V(y) = y$ and assume $\underline{V} = 0$. It follows from Equation 1 that $I = \lambda\omega$ where $\lambda = \lambda(\cdot) = \frac{r}{r-(1-q)R}$. The investment cap is linear in wealth. Someone who has a wealth close to zero will only be able to invest a very small amount. Therefore, she will clearly not want to give up the wage income she could get if

Figure 2a.



she did not invest. More specifically, anyone who has a wealth of ω will get a utility of $\lambda\omega(R-r) + \omega r - E$ if she invests and $W + \omega r$ if she goes to work for someone else. Clearly, she will not invest unless her wealth was more than $\underline{\omega} = \frac{W+E}{\lambda(R-r)}$.

For those who start with a wealth of $\omega_t < \underline{\omega}$ in period t, their end-of-period income will be $W + \omega_t r$ and their children will start life with $\omega_{t+1} = \beta(W + \omega_t r)$. Those who start with a wealth $\omega_t > \underline{\omega}$ will invest and their children will start life with $\omega_{t+1} = \beta[\lambda(R-r)+r]\omega$ unless $\lambda\omega > \bar{I}$,[8] in which case $\omega_{t+1} = \beta[\bar{I}(R-r) + \omega_t r]$.

Under the assumption that $\beta[\lambda(R-r)+r] < 1$ these dynamics can look like Figure 2a.

This is the classical poverty trap diagram. Poverty is a steady state and so is being rich. Both ω^* and ω^{**} are attractors with basins of attraction given by $[0, \underline{\omega}]$ and $[\underline{\omega}, \alpha]$

7. The reader will notice that we have only allowed α to be less than 1 whereas it is more usual to allow α to take all non-negative values. The reason is that for α greater than 1, utility is negative and therefore the V constraint always binds. This makes our exercise meaningless. We assume $\alpha \leq 1$ to avoid this problem.
8. Recall that I is the maximum it is ever worth investing.

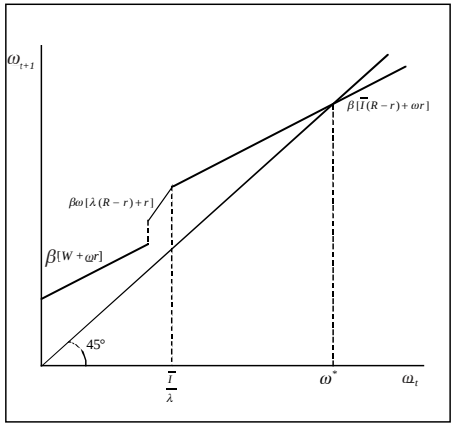
respectively, an extreme version of the poverty trap. At ω^*, no one starts a business, we think of ω^* as poverty. Poverty is self-sustaining because the poor are credit constrained and as a result choose not to invest. Consequently, they earn low rates of return on their investment and do not accumulate wealth fast enough to get out of the trap.[9]

This is the essence of the story told by many papers, including Galor & Zeira (1993), Dasgupta and Ray (1986) and Banerjee and Newman (1994), though they each give a different name to this investment: education in Galor-Zeira; health in Dasgupta-Ray; and capital in Banerjee-Newman. It is easy to see that this case is most likely to obtain when λ is small, which implies that raising $\underline{V}$ and reducing α both of which, as we have seen, lower the investment cap, also make the poverty trap more likely.

It is easy, of course, to point to the aspects of reality that are missing from this narrative. For example, savings/bequests ought to be responsive to the rates of return. If we were to add this ingredient to our model, it would mostly reinforce the poverty trap since the poorest face the lowest return on their savings in this model and therefore should have the lowest β's. Adding more convexities to the production function (a set-up cost, for example) also reinforces the poverty trap. Making wages endogenous has a more nuanced effect. On the one hand, an economy with lots of poor people will tend to have low wages and, all else being the same, low wages make it harder to get out of poverty. On the other hand, it also moves $\underline{w}$ down, which makes escape from poverty easier. An endogenous interest rate also cuts both ways: high interest rates reduce λ and make it less rewarding to invest, but they also raise the reward for those who put their money in the bank.

Of course we do not have to have a poverty trap. One alternative configuration, which is valid under the condition $\beta[\lambda(R-r)+r] > 1$ but $\beta r < 1$,[10] where everyone ends up rich, is depicted in Figure 2b.

Figure 2b.



9. The fact that the income shifts up discontinuously at $\underline{\omega}$ is a part of what makes the poverty trap possible. Otherwise, since $\beta[\lambda(R-r)+r] < 1$, the ω_{t+1} will not cross the 45° line again. This case is therefore only possible when E is sufficiently large since the jump in income is just the reward for the extra effort involved in running a business. One might wonder whether parents, faced with such a discontinuity in the outcome for their children would not always want to increase their bequest slightly, and therefore perhaps such an outcome cannot ever be an equilibrium if the parents were forward-looking. This is not, however, correct. The fact that the production technology is non-convex necessarily makes the parents' preferences over bequests non-quasi-concave and therefore even if the parents were forward-looking, their decision rule over bequests would be discontinuous and therefore the wealth of the next generation could be discontinuous as function of parental wealth.
10. The latter assumption guarantees that no one accumulates an infinite wealth.

Even if this were the economy, we would care about how long it takes to get out of poverty. Raising $\underline{V}$ and reducing α, by reducing $\underline{\omega}$ and moving the ω_{t+1} curve down (by lowering λ) makes it a longer process.

This is of course all based on a very specific model of the credit market. One can imagine many other ways in which a borrower could misbehave: he could borrow and fail to put effort into it on the assumption that if, as a result, the investment fails, he will not have to repay.[11] Or he could gamble on bad, high-risk projects, again with the view that if as a result he is left with very little, he will simply default.[12] Or he could try to hold up the lender once the investment is sunk, arguing that the lender needs his cooperation to get returns on his investment, thereby forcing the lender to lower the interest rate after the fact.[13] In each of these cases, richer people will find it easier to invest the same absolute amount simply because a larger part of the money at stake is their own, which makes them more likely to have the right incentives. Moreover, a lower $\underline{V}$ and a higher α will help the poor by making it easier for the lender to punish borrowers who misbehave. The rest of the story would therefore be more or less the same as what we have here.

Poverty as Vulnerability

The poor are vulnerable: they are afraid of any losses because losses cause them too much pain.[14] We can, fortunately, capture this idea using much the same framework as we had before. However, in order to avoid dealing with the credit market, assume that it is impossible to get away with not repaying, and as a result everyone repays. Everyone can therefore invest as much as they like and it is convenient to assume that everyone who invests, invests all the way up to $\bar{I}$. Finally, add some risk to the investment by assuming that with probability q' the investor earned a return R' on his investment, with probability $1-q'$ he earns 0.

As before, the alternative to investing is to put the money in the bank and to go and work for a wage W. Our decision maker now compares

$$V^{*risky} = q'V^*(\bar{I}R'+(\omega-\bar{I})r(\omega))+ (1-q')V^*((\omega-I)r(\omega))-E$$

with

$$V^{*safe} = V^*(\omega r+W),$$

where $r(\omega)$ is the (gross) effective interest rate. For those who have $\omega \geq \bar{I}$, since they do not borrow, $r(\omega) = r$. For those who have to borrow, i.e., those with $\omega < \bar{I}$, we have to adjust the interest rate for the fact that those whose investment fails will not be able to repay at all. Therefore it must be true that $q'r(\omega) = r$ or $r(\omega) = r/q'$.

Assume that W is high enough that $V(W) > \underline{V}$. Our agent will choose to invest if:

$$V^{*risky} = q'V(\bar{I}(R'-r)+\omega r)+(1-q')V^*(\omega r)-E \geq V(W+\omega r) = V^{*safe}$$

11. This is the essential idea of the models of credit in Aghion and Bolton (1997) and Legros and Newman (1996).
12. As in Bernanke and Gertler (1990), Hoff and Lyon (1995).
13. As in Hart and Moore (1990).
14. This conceptualization is more or less explicit in Kanbur (1979), Kihlstrom and Laffont (1979), and Newman (1995). It is also implicit in Banerjee and Newman (1991), Banerji (1997), Jacoby and Skou{as (1997), Morduch (1990, 1994), Ravallion (1988) and, in a much more applied context, in Walker and Ryan (1990).

Figure 3a.

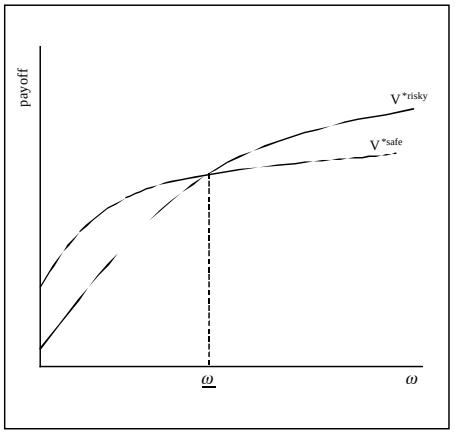
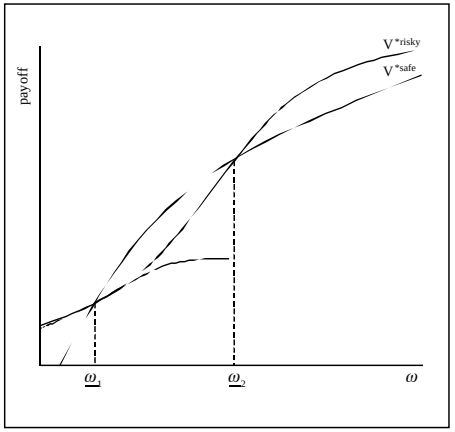


Figure 3b.



The two sides of this equation are drawn in Figures 3a and b as functions of, under the assumption that $\underline{V}$ is low enough that $q'V(\bar{I}(R'-r)) + (1-q)\underline{V} - E < V(W)$.

The fact that the curves eventually cross is not automatic. It requires an additional assumption which says that there is some wealth level at which the investment project is worthwhile. In the case where $E = 0$, this assumption is equivalent assuming that the investment would take place in the absence of any risk, i.e., $q'R > r$. This follows from the fact that our utility functions have built-in constant relative risk aversion which means that for ω large enough, the person must be almost risk neutral with respect to fixed absolute risks. The more rewarding risky investment should then dominate and should continue to dominate for all larger wealth levels. In other words, when $E = 0$ there is a $\underline{\omega}$ such that those above $\underline{\omega}$ take the risk and the rest do not. In the more general case where $E \neq 0$, this is not necessarily true: because richer people also value their leisure more relative to extra income, it may be that the richest people do not want to invest. In other words the curves may cross again. In what follows we will ignore this effect, on the implicit assumption that no one in our population is rich enough for this effect to matter.

What is the effect of an increase in $\underline{V}$ has on $\underline{\omega}$? To answer this note that a change in $\underline{V}$ only affects $\underline{\omega}$ if the person at $\underline{\omega}$ expects to end up at $\underline{V}$ when the project fails, i.e., if $V(\omega r) < \underline{V}$. However, it is possible to show that the $V^{*\,risky}$ curve can only cut the $V^{*\,safe}$ curve from below if ω is large enough that $V(\omega r) > \underline{V}$.[15] Therefore, if the configuration is

15. Intuitively, $V^{*\,risk}$ grows more slowly with respect to ω compared to $V^{*\,safe}$ as long as $V(\omega r) < \underline{V}$. In the case where $\underline{\omega} - \bar{I} > 0$, this follows from the fact that under this condition $\frac{dV^{*\,risky}}{d\omega} = q'\,V'(\bar{I}(R'-r)+\omega r)$ which is less than $\frac{dV^{*\,safe}}{d\omega} = V'(\omega r + W)$ because $\bar{I}(R'-r) > W$, V is concave and $q' < 1$: In the alternative case a similar argument applies.

as shown in Figure 3a, the $\underline{V}$ constraint can never binds at $\underline{\omega}$ and therefore changes in $\underline{V}$ has no effect on $\underline{\omega}$. A fall in risk aversion does however encourage people to take the risky option as one might have expected.[16]

However, this is not the only possible configuration. For higher values of $\underline{V}$, the poor may be encouraged to invest because the distance between $\underline{V}$ and what they would get otherwise, $V(W+\omega r)$, may be small. This is obviously true, for example, in the case where $V(W+\omega r) < \underline{V}$, in which case it must pay to invest. In this case, if anyone does not invest it will be the middle classes, who can still lose a lot (for them $V(W+\omega r) < \underline{V}$ may still be large). This is the configuration shown in Figure 3b. In the case described by that figure, there are two critical values: ω_1 and ω_2. Those who are below ω_1 and above ω_2 choose the risky option. In this case, raising $\underline{V}$ will raise ω_1 without affecting ω_2 (for the same reason that it does not affect $\underline{\omega}$ in the previous case), and therefore increases the share of people taking the risk. In this case as well it remains true that less risk aversion encourages investment.

To summarize:

Claim 2 *For very low values of $\underline{V}$, the poor will not invest and the rich will. For higher values of $\underline{V}$, the poor will also invest but some sections of the middle class may still hold out for not investing. Also:*

i. a higher $\underline{V}$ leads to more investment;

ii. more risk aversion leads to less investment.

Once again, these are largely familiar points. The argument that risk aversion leads to underinvestment and that insurance helps promote investment goes back at least to Stiglitz (1969). Morduch (1990) provides some empirical evidence based on Indian agriculture suggesting that poorer people do shy away from adopting profitable but risky technologies, such as high-yielding varieties of crops.

There are also important caveats. We have not modelled why the risk does not get insured away. Once we allow for such insurance, it is not clear that the poor will be the ones who do not invest, since, as pointed out in Banerjee-Newman (1991) and more graphically in Newman (1995), the poor get the best insurance precisely because they are so vulnerable. The evidence from many developing countries shows that the poor are often well insured against the kinds of risk they face.[17] It must be emphasized, however, that our interpretation of this evidence is constrained by the fact that we only observe the kinds of risk people have chosen to bear. In other words, we cannot control for the fact that people may have foregone investment opportunities in order to limit the risk they actually have to bear.[18] Moreover, there is some evidence that there is substantial variation in the kind of insurance that is available to people in different areas.[19] This is

16. The proof of the fact that increasing risk-aversion shifts people away from the risky option is more or less obvious, since it amounts to saying that the certainty equivalent has gone down. However, to do this exercise correctly, we must ensure that the fall-back option remains $\underline{V}$ and the marginal rate of substitution between income and effort do not also change when changes. For this reason, when we look at this question we assume $E = 0$ and also that when α changes $\bar{A}$ gets adjusted to ensure that $\frac{\bar{A}^{1-\alpha}}{1-\alpha} = \underline{V}$. In the more general case where $E \neq 0$, similar effects are to be found but there is no simple way to control for the direct effect of α on the marginal rate of substitution between income and effort.
17. See Udry (1990), Townsend (1994), Morduch (1995).
18. As pointed out by Morduch (1990).
19. See Townsend (1995).

consistent with the fact that these informal systems of insurance have to be self-enforcing, and self-enforcing systems tend to be quite fragile.

It is straightforward to look at all the wealth dynamics implied by a model of this type. Focusing on the case where people invest only if they are rich enough (i.e., have $\omega_t > \underline{\omega}$), we have:

$$\omega_{t+1} = \beta[\omega_t r + W] \quad \text{for } \omega_t \leq \underline{\omega}$$

$$\omega_{t+1} = \beta[(\omega_t - \bar{I})r(\omega) + IR'] \text{ with probability } q'$$

$$\omega_{t+1} = \beta[(\omega_t - \bar{I})r(\omega)] \text{ with probability } 1-q'.$$

Since $\omega_t - \bar{I}$ can clearly be negative and we would like to rule out negative bequests, assume that when $\omega_t - \bar{I}$ is negative the bequest is 0.

These dynamics are shown in Figures 4a and 4b under the assumption that $\beta r < 1$.

The curve AA represents the dynamics for those below $\underline{\omega}$, while the two curves BB and $B'B'$ represent the dynamics for those above it (the two curves represent the two outcomes).

Using standard techniques, the reader ought to be persuaded that in Figure 4a,the poor eventually converges to the point ω^* while the rich converge to a distribution with support $[\omega^*_1, \omega^*_2]$ In Figure 4b, the steady state is a single distribution. Figure 4a, then, is a poverty trap driven entirely by the fact that the poor feel vulnerable and therefore underinvest. The configuration in Figure 4a is obviously more likely when ω is high, which is what happens when $\underline{V}$ is low and α is high.

The Two Poverties

Both views of poverty give reasons why poverty may be persistent and why it might be inefficient. They are nevertheless very different. To see how different, consider the statements of Claims 1 and 2. In both of these (Parts 3 and 4 of Claim 1 and Parts 1 and 2 of Claim 2) we relate $\underline{V}$ and the extent of risk aversion to the extent of under-investment, and through it to the persistence of poverty. However, the effects go in exactly the opposite direction in the two cases.

Figure 4a.

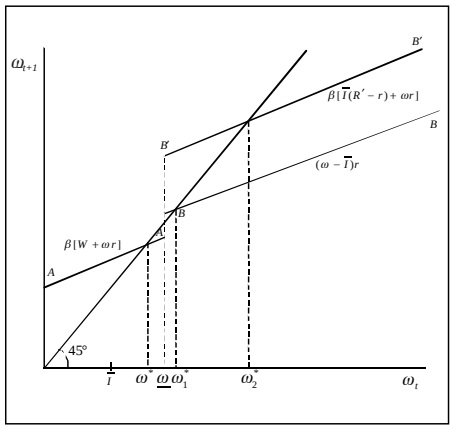
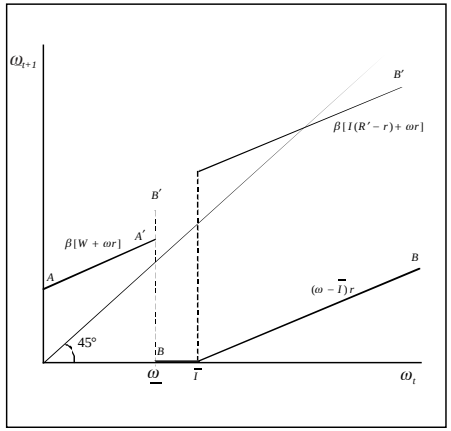


Figure 4b.



When we emphasized desperation, a high value of $\underline{V}$ and low risk aversion were both bad. If vulnerability is what we care about, the same things are both good.

This ought not to surprise us: being vulnerable, after all, is almost the literal opposite of having too little to lose. While it is not impossible for someone to be both vulnerable and desperate (because she faces very different patterns of risk in the two situations), emphasizing one aspect of poverty will tend to make the other less relevant. To make matters worse, the extent of one's vulnerability is directly related to one's ability to borrow to smooth out short-run income fluctuations.[20] Since we have argued that what makes one vulnerable may also give one better credit access, this raises questions about who is really vulnerable.

These two very different views cannot but suggest rather different views of anti-poverty policy. If the poor are vulnerable, they will want to be protected from risk (a high value of $\underline{V}$) but that could make it harder for them to get credit. Conversely, lowering $\underline{V}$ makes borrowing easier, it also makes them more vulnerable.

Trade-offs, of course, are the bread-and-butter of economics. What makes this particular trade-off interesting is that while both the idea that the poor are vulnerable and the idea that they have limited access to credit are very much in the literature, the trade-off between policies addressed toward them is not discussed. It is not mentioned, for example, in the otherwise excellent survey of the literature on poverty and anti-poverty policy by Lipton and Ravallion (1995), despite the fact that the survey has a place for both the idea that the poor may be credit-constrained and the idea that the poor may shy away from risk, and moreover has a discussion of the possible disincentive effects of anti-poverty policies. Of course, it is possible that these concepts are ignored because they are not very useful. But both introspection and casual empiricism suggests otherwise. Moreover, both these ideas figure importantly in the fascinating evidence on how the poor view themselves, emerging from the recent work on participatory poverty mapping.[21]

It remains possible that there is no real conflict: one view applies to some people and the other to the rest. If this is true, it suggests that it is very important that we find observable correlates of these poverty characteristics. Alternatively, the conflict may have arisen from the specific formalization we have adopted here and a reconciliation may be possible. This is what we turn to now.

Conclusion: Reconciling These Views

The close connection between desperation and vulnerability comes from the fact that both are related to $\underline{V}$, which is the minimum socially accepted welfare level. One way to break the link is to have two separate values of $\underline{V}$ corresponding to the two views of what it is to be poor. In other words, there is one value of $\underline{V}$ which tells us what happens to a defaulter and another which tells us what

20. We have avoided this issue so far by having only very long-run fluctuations (everything in our model is on the scale of a generation). But in the world, sensitivity to short-run fluctuations is an important part of vulnerability.
21. See Narayan et al (1999). It is, however, also clear from this evidence that there are ways in which poverty gets conceptualized that are not in the formal literature. Examples of this include the idea that poverty is voicelessness (i.e., lack of control over public action), powerlessness (lack of control over one's own destiny) and stress (lack of ease, lack of leisure).

happens to someone who simply had very bad luck.

One reason why these outcomes may be different is suggested by thinking about incentives. The fact that a defaulter ends up at $\underline{V}$ reflects an active choice by the lender, while the misery of someone whose investment has failed may not need anybody else's help. If collecting money from a defaulter is costly, the lender may not have the incentive to go after her, or at least go after her with enough gusto. This will be especially true if the borrower is poor, since the amount of money that can be extracted from her cannot be very large. In other words, at least in expectation, the borrower will not expect to be pushed all the way down to the minimum socially accepted level. In other words, the $\underline{V}$ that is relevant for the credit relationship is higher than the $\underline{V}$ that comes into play when we focus on risk-taking behavior: the poor could be very vulnerable when they take on risks they have no control over and yet be protected from the wrath of the lender because the lender finds it too costly go after them.

A related but less obviously economic argument stresses the fact that society may take different views of misery that people bring upon themselves and misery that others in ict upon them. Bankruptcy laws around the world do not allow creditors to attach someone's last bowl of food, and yet many of the same countries do not explicitly guarantee that no one will end up starving. This kind of moral schizophrenia may also give us two levels of $\underline{V}$.

Both these arguments, however, rely on making an excessively sharp distinction between bad luck and default. Bad luck for a farmer or a trader is not having enough money to pay their suppliers. In other words, the way bad luck unfolds is through a series of defaults. The two modes of poverty therefore remain connected, albeit perhaps less tightly.

Another approach to this question is to recognize that people may have different behavioral responses to the risk that comes from defaulting (which is something they choose) and the risk inherent in investments. Where they have control and actively choose the risk, they may have a tendency to underestimate how much it may cost them. By contrast, where it is a pure act of God, they may even overestimate the dangers that they are facing. As a result, despite the real $\underline{V}$ being the same, the agent will act as if she had two separate $\underline{V}$'s for the two decisions.

These more elaborate models do allow us to get away from the very stark conflicts we outlined above. However, these models also have important policy implications of their own. If, for example, the poor are actually vulnerable and the problem is commitment on the lender's side, the natural policy response would be to try to reduce the costs of collection. This may be an advantage, for example, of group lending schemes that shift a part of the burden of collection on to those who can easily do so (other members of the group). If, on the other hand, the problem is in the borrower's perceptions, the important step may be convincing the borrower that it is in her interest to repay. Dynamic incentives for borrowers like the ones built into many micro-credit schemes may serve this purpose.

All this, of course, is necessarily speculative. In the end, only data can tell us whether any of these models are right or even interesting. However, without the theory being articulated, there cannot be data. Our hope is to have taken the first step on this question.

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