

Deutsches Institut für German Development Entwicklungspolitik Institute

Fungibility and the Choice of Aid Modalities

The Red Herring Revisited

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Main Concerns in the Policy Debate on Aid Modalities

Strong empirical arguments for programme-based aid over project aid

- Transaction costs: administrative cost and inefficiencies due to fragmentation and misalignment
- Ownership and sustainability

But: fiduciary risk of PBAs

- risk that aid resources are not (or not efficiently) used for the purposes intended by the donor
- Main reason: fungibility (aid money does not stick)

The Choice of Aid Modalities



Does it really make a difference?

- Does fiduciary risk due to fungibility really differ fundamentally between aid modalities?
- If it does, what can donors do to about it?



A Basic Model of Aid Modalities

A Basic Fungibility Model



Known ,technology' for poverty reduction

Two categories of public expenditure:

- pro-poor expenditure ppe
- other non-poverty-reducing expenditure x_0

Recipient government maximizes utility (or political support) function:

$$W^{G} = ppe^{\Theta}x_{0}^{1-\Theta} \qquad s.t. \quad ppe + x_{0} \le Y + T \qquad 0 < \Theta < 1$$

"commitment" to poverty reduction

Altruistic donor:

 $W^D = ppe$ $T \le A$

One period, different aid modalities

Aid Modalities



Project Aid

Donor spends aid directly on pro-poor expenditure: T=ppe^D

General Budget Support

✓ Non-earmarked aid transfer: T=A

Aid on Delivery / Results-based Aid

 Amount transferred conditional on government's own effort (expenditure): T= ε ·ppe^a



Basic Case: Full Information







General Budget Support





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Partially Fungible Project Aid





Partially Fungible Project Aid





Aid on Delivery





Aid on Delivery





Aid on Delivery without Fungibility



Aid on Delivery with Fungibility





Aid on Delivery with Fungibility

















Aid Effectiveness with full information



Aid Modality	$\begin{array}{c} \text{Aid Dependency} \\ \leftrightarrow \\ \text{Commitment} \end{array}$	ppe [*] (Donor Utility)	Government Utility	
GBS	-	$\Theta(Y\!+\!A)$	$\left[\Theta(Y+A)\right]^{\Theta} \left[(1-\Theta)(Y+A)\right]^{1-\Theta}$	
Project Aid	$\frac{A}{Y} > \frac{\Theta}{1-\Theta}$	A	$A^{\Theta} Y^{1-\Theta}$	
	$\frac{A}{Y} \le \frac{\Theta}{1 - \Theta}$	$\Theta(Y\!+\!A)$	$[\Theta(Y+A)]^{\Theta} [(1-\Theta)(Y+A)]^{1-\Theta}$	
AoD	$\tfrac{A}{Y} \leq 1 - \Theta$	$\Theta Y + A$	$(\Theta Y + A)^{\Theta} \left[(1 - \Theta) Y \right]^{1 - \Theta}$	
	$\frac{1-\Theta}{\Theta} > \frac{A}{Y} > 1-\Theta$	Y^{\star}	$(1-\Theta)^{1-\Theta} Y^{\star}$	
	$\frac{A}{Y} \ge \frac{1-\Theta}{\Theta}$	$\Theta(Y\!+\!A)$	$[\Theta(Y+A)]^{\Theta} \ [(1-\Theta)(Y+A)]^{1-\Theta}$	

* Assuming the donor only disburses the amount necessary to achieve ppe = Y, but ignoring any possible positive or negative utility derived from undisbursed aid funds.

Relative Effectiveness of Aid Modalities



Preferred Aid Modalities





















Aid Effectiveness with asymmetric information



Modality Choice	$\frac{A}{Y}$	Θ	$\widetilde{\Theta}$	$\widetilde{\Theta} \lessapprox \Theta$	ppe^*
Project / GBS	¥	$\Theta < \frac{A}{Y + A}$	$\frac{A}{Y+A}$		$\Theta(Y+A)$
		$\Theta \geq \frac{A}{Y+A}$	Θ	=	
	≤1	$\Theta < \tfrac{Y}{Y + A}$	$\Theta - (1 - \Theta) \frac{A}{Y}$		
		$\Theta \geq \tfrac{Y}{Y+A}$	Θ	=	$\Theta(Y+A)$
Project / AoD		$\Theta \geq \frac{A}{Y+A}$	Θ	=	
	> 1	$\frac{Y}{Y+A} \leq \Theta < \frac{A}{Y+A}$	$\frac{A}{Y+A}$	>	
		$\Theta < \frac{Y}{Y + A}$	$\frac{A}{Y+A}$	>	Y

Summary of Findings I



- Even with full information, GBS and project aid are equivalent over a wide range of aid dependency and commitment
- With full information: for low and moderate aid dependency, AoD is clearly more effective than project aid or GBS
- With asymmetric information, this advantage is eroded over a wide range of aid dependency / commitment combinations

Summary of Findings II



- Opposing incentives for government to over- or understate ist commitment with GBS and AoD
- As long as multiple donors do not coordinate their different aid modalities, very limited scope to exploit this effect in order to reduce fiduciary risk
- With a coordinated modality mix, donors can induce "relatively uncommited" governments to self-select into project aid
- For government commitment below some lower bound, government will access only part of the AoD tranche
- If recipient selectivity can exclude that government commitment is below this lower threshold, a coordinated GBS/AoD approach is always at least as effective as project aid

Conclusions



- Fungibility is indeed mostly a "red herring" when it comes to aid modality choice
- Strong argument for programm-based aid, against project aid, even when abstracting from transaction costs
- With incomplete information about a recipient government's commitment to reduce poverty, a mix of budget support and RBA can reduce fiduciary risk
- But: donor coordination key to effectiveness of modality mix

Policy Message

 Donors should worry much less about which aid modality to choose over another and much more about their commitment to coordination and harmonization



Future Research

Proposal for future research



Necessary:

Empirical research on effectiveness of PBAs and RBAs

But also:

- More formal research on political economy / incentives of aid and aid modalities on both sides of the aid relationship
- Make more use of what is already out there (for modelling and empirical testing)



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Thank You!

Leiderer, S. (2012): Fungibility and the choice of aid modalities, UNU-WIDER Working Paper 2012/68



Appendix







General Budget Support











Non-Fungible Project Aid





Base Case: Complete Information



Aid on Delivery





Aid on Delivery





Aid on Delivery without Fungibility



Aid on Delivery with Fungibility





Aid on Delivery with Fungibilitiy

































 \mathbf{x}_0





Multi-Donor Aid

Uncoordinated Aid



- Two donors D₁ and D₂
- Shares α and 1- α of total aid budget A
- ✓ D_1 offers either GBS or project aid
- ✓ D_2 offers AoD and adjusts matching element ϵ
- \checkmark Same information asymmetry regarding \varTheta
- Each donor only considers her own aid in her decision
- Government knows total aid budget A

Uncoordinated Aid





Aid on Delivery





Uncoordinated Aid





Uncoordinated Aid





Aid Effectiveness with Uncoordinated Aid



	Θ			$\widetilde{\Theta}$	ppe^*
Α.		$\Theta < \frac{A}{Y+A} \left(1 - \frac{\alpha^2 A}{Y+\alpha A} \right)$		$\frac{\alpha A}{Y + \alpha A}$	$A\left(1 - \frac{\alpha^2 A}{Y + \alpha A}\right)$
$\frac{1}{Y} \leq 1$	$\Theta < \frac{Y}{Y + (1 - \alpha)A}$	$\Theta \ge \frac{A}{Y+A} \left(1 - \frac{\alpha^2 A}{Y+\alpha A} \right)$	$\Theta \leq \tfrac{\alpha A}{Y + \alpha A}$	$\frac{\alpha A}{Y + \alpha A}$	$\Theta(Y\!+\!A)$
			$\Theta > \frac{\alpha A}{Y + \alpha A}$	$\Theta - (1 - \Theta - \alpha) \frac{A}{Y}$	
	$\Theta \ge \frac{Y}{Y + (1 - \alpha)A}$		Θ	$\Theta(Y\!+\!A)$	

	$\frac{(1-\alpha)A}{Y}$	Θ	$\widetilde{\Theta}$	$\widetilde{\Theta} \underset{\displaystyle \lesssim}{\leq} \Theta$	ppe^*
	$1 < \frac{(1-\alpha)A}{Y}$	$\Theta \geq \frac{Y}{Y + A}$	$\max(\frac{\alpha A}{Y+\alpha A};\frac{(1-\alpha)A}{Y+(1-\alpha)A})^{\star}$	\geq	$\Theta(Y\!+\!A)$
$\frac{A}{2} > 1$		$\Theta < \tfrac{Y}{Y + A}$			Y
Y	$\tfrac{Y}{Y+\alpha A} < \tfrac{(1-\alpha)A}{Y} \leq 1$	$\Theta \geq \frac{Y}{Y + A}$	$\max(\frac{\alpha A}{Y+\alpha A}; \frac{Y}{Y+(1-\alpha)A})^*$	\geq	$\Theta(Y\!+\!A)$
		$\Theta < \tfrac{Y}{Y + A}$			Y
	$\frac{(1-\alpha)A}{Y} \le \frac{Y}{Y+\alpha A}$	see Table 3			
	*For $\Theta > \max(\cdot; \cdot)$, the government can also set $\widetilde{\Theta} = \Theta$				

Coordinated Aid



- Two donors D₁ and D₂
- Shares α and 1- α of total aid budget A
- ✓ D_1 offers either GBS or project aid
- D_2 offers AoD and adjusts matching element ε
- Same information asymmetry regarding θ, but all other parameters known
- Donors coordinate shares α and 1- α allocated to GBS and AoD
- Donors can establish a threshold z for government signal below which they convert either the GBS tranche or the entire aid budget into project aid

Coordinated Aid without Threshold



Coordinated Aid: Indifference between project aid and partial disbursement of AoD



Coordinated Aid: Threshold Fixed Tranche

