Endogenous Detection of Collaborative Crime: the Case of Corruption

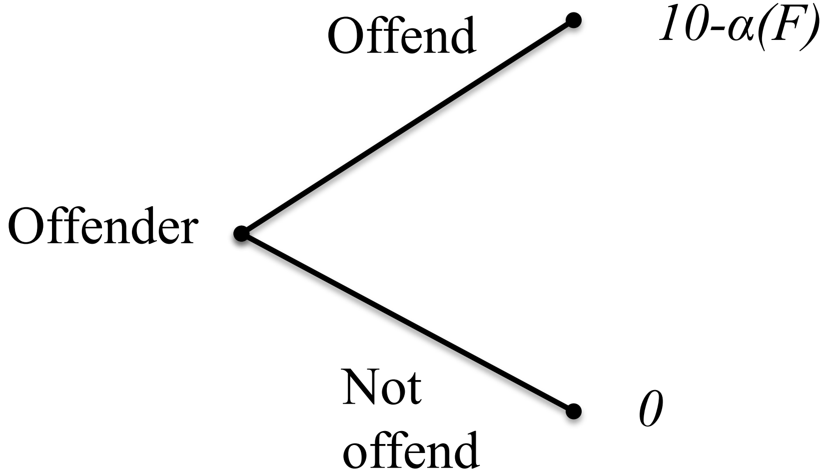
I will show…

…what happens if we endogenise detection in a corruption game with asymmetric penalties.

You will see…

…surprising results of how (not) to deter corruption.

Becker's crime model (1968)[1].



Consider three cases where *α = 0.5:*

If F > 10, then offend

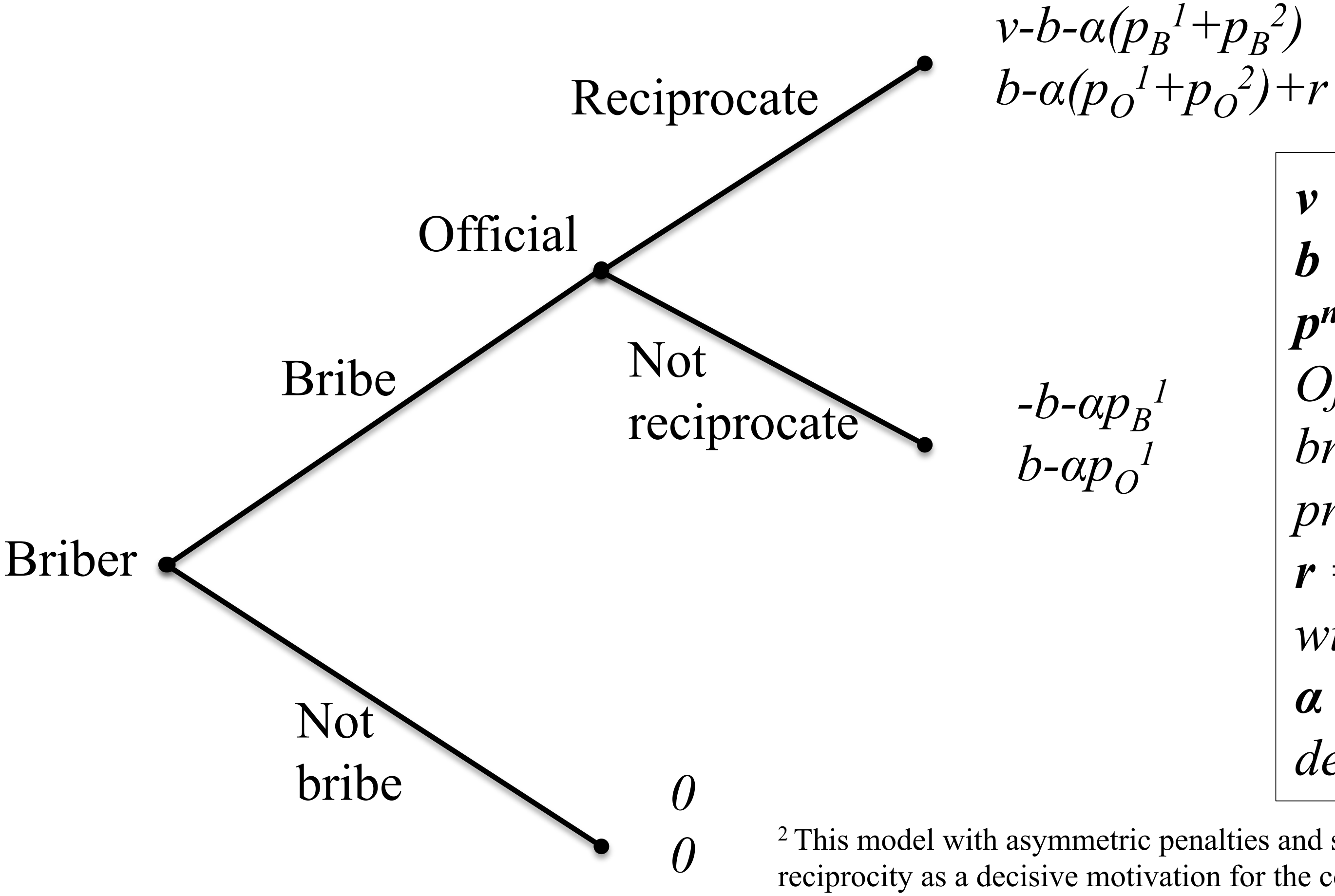
If F = 10, then indifferent

If F < 10, then not offend.

Therefore: optimal deterrence at min *α* and max F.

[1] Becker, G. (1968) "Crime and Punishment: An Economic Approach". JPE Vol.76.

An orthodox Becker-type model[2] of corruption.

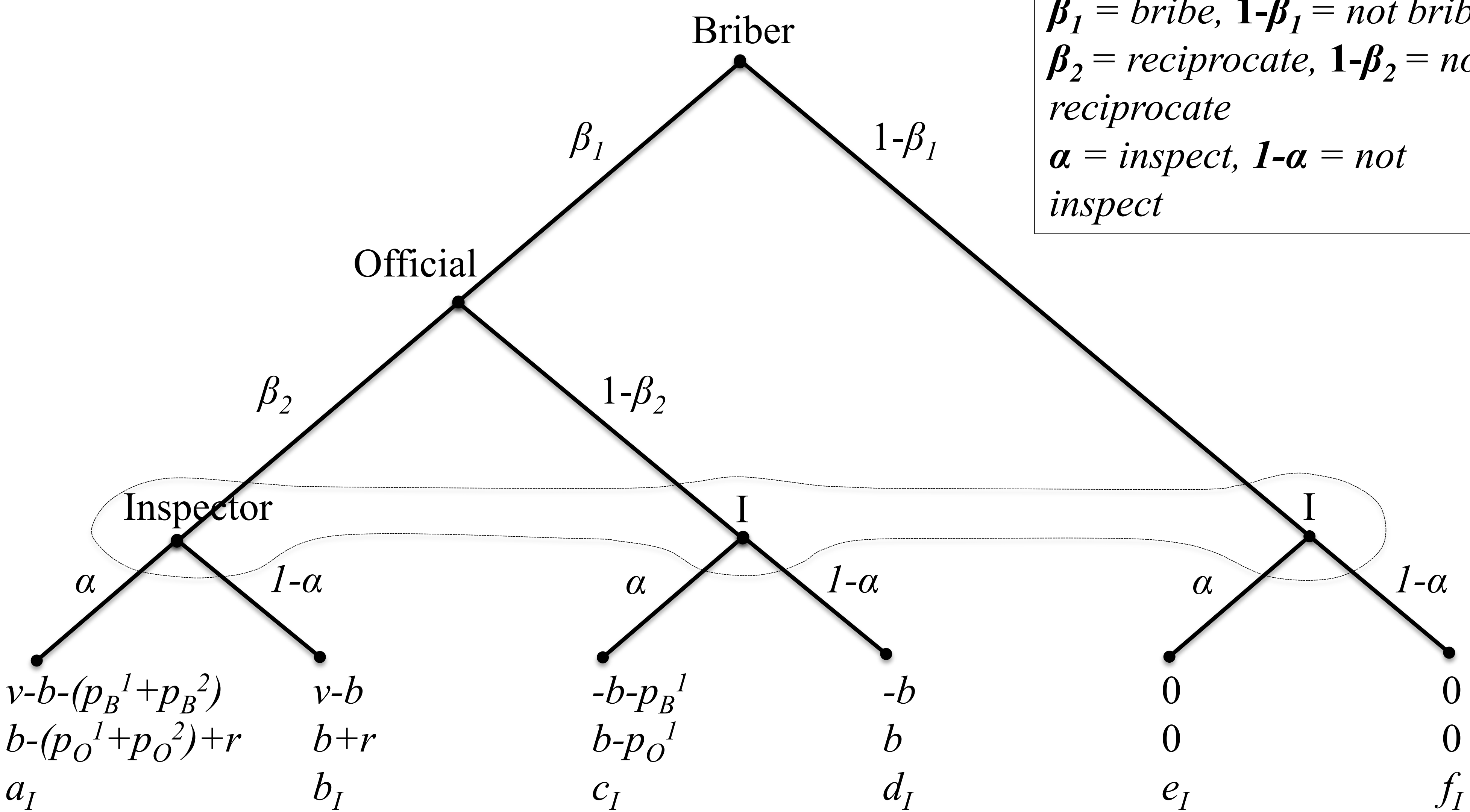


v *= benefit from reciprocation*
b *= bribe*
$\boldsymbol{p^n_i}$ *= penalty, where i = (Briber, Official) and n = (bribe/accept bribe, reciprocate/accept quid pro quo)*
r *= moral payoff for keeping with social norm of reciprocity*
$\boldsymbol{\alpha}$ *= probability of inspection/detection*

[2] This model with asymmetric penalties and specifically the idea of including the social norm of reciprocity as a decisive motivation for the completion of a corrupt deal is adapted from Lambsdorff and Nell (2007) "Fighting Corruption with Asymmetric penalties and Leniency".

An Endogenous Detection Model.

***β_1* = bribe, 1-*β_1* = not bribe**
***β_2* = reciprocate, 1-*β_2* = not reciprocate**
***α* = inspect, *1-α* = not inspect**



Results.

Higher penalty on briber:

- Bribing
- Accepting quid pro quo

→ Lower bribery, but…

- Even higher reciprocation!

→ Thus:

- Overall reciprocated bribery increases (corruption)!

Higher penalty on official:

- Accepting bribery
- Reciprocating

→ Although higher bribery…

- Even lower reciprocation!

→ Thus:

- Lower overall reciprocated bribery (corruption)!

Thank you!

Appendix.

- Tsebelis’ inspection game
- Other equilibria

Tsebelis' inspection game[3].

Payoffs of the inspector:

$a_I > b_I, d_I > c_I$

Payoffs of the offender:

$b_I > a_I, c_I > d_I$

Decision	Inspect α	Not inspect $1 - \alpha$
Offend β	a_I	b_I
Not offend $1 - \beta$	c_I	d_I

Consider a raise in the penalty:

There is only one equilibrium – a mixed-strategy equilibrium.

As F goes up, α goes down and β remains constant.

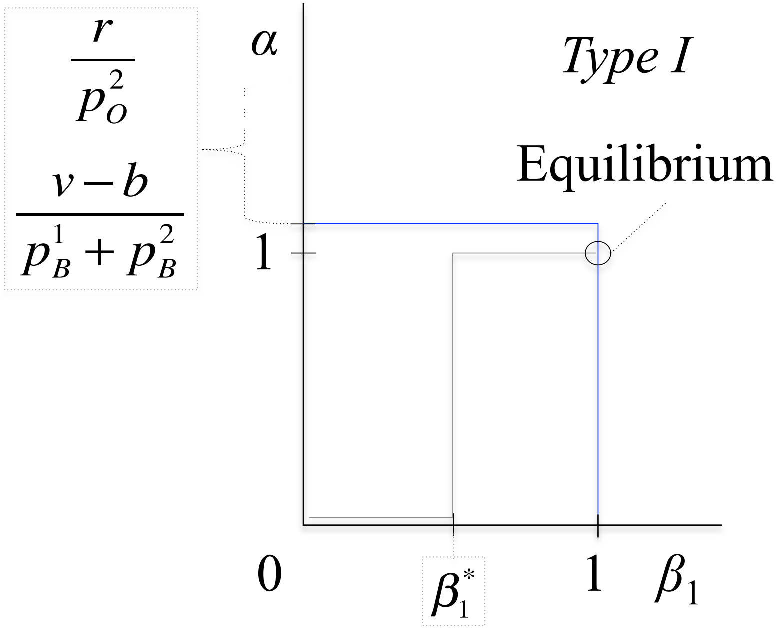
Thus, raising F max does not deter anymore.

[3] Tsebelis, G. (1989) "The Abuse of Probability in Political Analysis: The Robinson Crusoe Fallacy". APSR Vol. 83.

For the eager people: 3 types of equilibria.

Whichever is lowest:

- The level of inspection **α** at which the entrepreneur is indifferent.
- The level of inspection **α** at which the bureaucrat is indifferent.
- Or α = 1, as the meaningful boundary, since 1 reflects definite detection and any value higher than that is not intelligible.

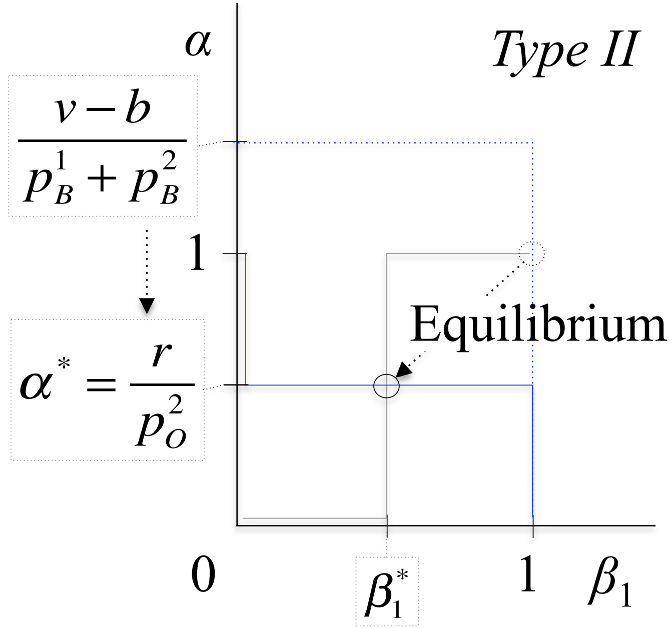


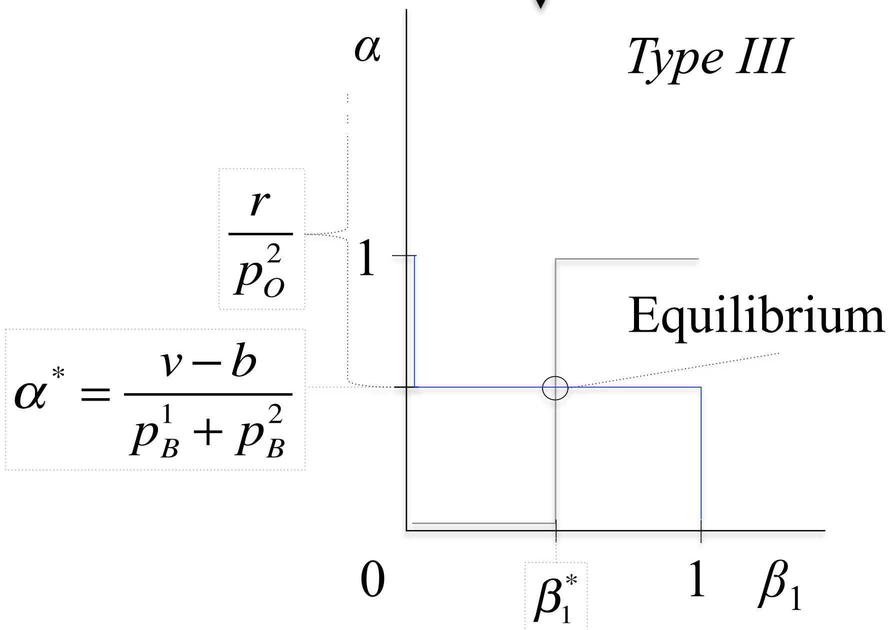
Indecision:

α*

β_1*

β_2*





Everybody happy:

$\alpha = 1$

$\beta_1 = 1$

$\beta_2 = 1$

Tsebelis-type:

α*

β_1*

$\beta_2 = 1$