Economics of Promotion & Tenure Committees

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Presented to the Department of Economics

Appalachian State University

September 26, 2014

Promotion & tenure decisions are critical for a university's reputation.

2 types of errors:

Accepting a bad candidate---an AB.

Rejecting a good candidate---an RG.

Shah & Stiglitz (1986 [*AER*], 1988 [*EJ*]).

Lazear & Gibbs (2009 [textbook]).

Consider 2 possible ways to evaluate & approve projects.

Shah & Stiglitz (1986):

1) evaluators are equally talented & unbiased.

2) evaluators approve or reject projects.

Flat structure: one evaluator decides.

Hierarchy: two evaluators must approve or the project is rejected.

Lazear & Gibbs (2009):
2nd opinion structure---in between a flat & a hierarchy.

Result: A flat accepts more projects.

∴ More ABs & fewer RGs with a flat than a hierarchy.

A 2nd opinion structure is in between a flat & a hierarchy in ABs & RGs.

Summary.

1) There is always a tradeoff between ABs & RGs.

2) The tradeoff is the same: the closer we are to a flat, the more ABs & the fewer RGs we have.

Academia has some important differences from the evaluation structures just discussed.

1. Top administrators decide; others merely recommend.

2. Evaluators differ in talent---department committees vs. outside committees.

3. There may be favorable bias by the department committee.

1. ADMINISTRATORS DECIDE

For the most part, ignore differences between various levels of administrators.

(Possibly think of the chair as part of the dept. committee.)

Also, call it a tenure decision.

Flat structure:

department committee recommends to the administration.

Hierarchy:

department & college committees recommend to the administration.

Note: although there are 2 levels with 1 committee, I still call this a flat structure because the administration only is active with 2 committees & a split.

I assume the administration accepts the committee recommendations unless there is a hierarchy & the committees disagree.

Let t = the probability the administration grants tenure when the committees are split.

If t = 0, the administration essentially does not exist---the Shah-Stiglitz result.

Prendergast & Topel (1996)

Supervisors value their ability to affect the welfare of subordinates.

∴ I assume administrators will not or cannot commit to not intervening.

2. THE COMMITTEES ARE NOT EQUALLY TALENTED.

Let p = the probability the dept. committee is correct---accepts a good candidate & rejects a bad candidate.

Let ρ = the probability the college committee is correct.

Lazear & Gibbs (2009): with otherwise identical evaluators, the 2nd evaluator (college com.) is more accurate because it sees what the 1st committee did:

$$\rho > p.$$

However, the department should be more knowledgeable than outsiders.

Putting aside Lazear & Gibbs point, we then would have

$$p > \rho.$$

∴ We could have $p \gtreqless \rho$.

I generally argue $p > \rho$, but I consider the possibility $\rho < p$.

3. BIAS

Probability = f that dept. com.

is favorably biased &

recommends tenure regardless

of the candidate's perceived

ability.

Why no negative bias by the dept., or any bias by the college?

No positive bias by the college because those outside the dept. aren’t as familiar with the candidate.

No unfavorable bias by either committee because:

1) some things can be hidden;

2) ethnic, racial, & gender bias are much less of a problem today; &

3) similar levels of bias in the 2 committees cancel out (≈).

If $p = \rho$ & both committees have favorable bias = f, the result is the same as if there were no bias.

U.S. until 1940s:

a good deal of anti-Semitism in universities.

Sometimes depts. were biased & admin. was not, sometimes the opposite occurred, & sometimes bias was throughout a university.

I will use positive analysis.

However, the model may be

used normatively.

"A good positive theory is a description of what is, and this precludes a role for those who want to teach it to others as a behavior ideal….Alternatively, we can argue that businesses do not behave according to our models but should…The answer lies in the middle ground. While economics may do very well at explaining most of what goes on in the world, some economic agents may not behave as they should." (Lazear, 1995)

The model.

I generally assume:

$\frac{1}{2} \leq \rho \leq p < 1$.

Again, I do consider what

happens if $\rho \geq p$.

Probability of accepting a bad candidate with 1 committee = prob(AB|1).

Probability of accepting a bad candidate with 2 committees = prob(AB|2).

Probability of rejecting a good candidate with 1 committee = prob(RG|1).

Probability of rejecting a good candidate with 2 committees = prob(RG|2).

Accept bad candidates

$\text{prob}(AB|1) = f + (1-f)(1-p)$,

$\text{prob}(AB|2) =$

$$\underbrace{[f + (1-f)(1-p)]}_{\text{Prob}(AB|1)}[1-\rho + t\rho]$$

$$+\ p(1-f)(1-\rho)t.$$

If $t = 0$,

$\text{prob}(AB|1) > \text{prob}(AB|2)$

If $t = 1$,

$\text{prob}(AB|1) < \text{prob}(AB|2)$.

$\therefore$ For $t < t_B$, we have more ABs with a flat, but the opposite is true if $t > t_B$. ☺

Why could there be more ABs with a hierarchy?

With a flat, if the dept. rejects, no tenure results.

With a hierarchy, if dept. rejects, & college accepts, t of the time tenure occurs.

The 2^{nd} chance aspect of the

hierarchy can lead to

prob(AB|1) < prob(AB|2).

Rejecting good candidates

If $t = 0$,

$\text{prob}(RG|1) < \text{prob}(RG|2)$

If $t = 1$,

$\text{prob}(RG|1) > \text{prob}(RG|2)$.

$\therefore$ For $t < t_G$, we have fewer RGs with a flat, but the opposite is true if $t > t_G$. ☺

Why could there be fewer RGs with a hierarchy?

With a flat, if the dept. rejects, that's the end.

With a hierarchy, a dept. rejection & acceptance by the college lead to tenure *t* of the time.

$$t_B = \frac{\rho[1-p(1-f)]}{p+\rho-2p\rho(1-f)-pf}$$

$$t_G = \frac{[(1-\rho)][f+p(1-f)]}{f(1-\rho)+[1-f][p(1-\rho)+\rho(1-p)]}$$

$$0 < t_B|_{f=0} < t_B|_{f=1} = 1.$$

$$\frac{\partial t_B}{\partial f} > 0.$$

$$0 < t_G|_{f=0} < t_G|_{f=1} = 1.$$

$$\frac{\partial t_G}{\partial f} > 0.$$

If $f \to 1$, it is not possible to have more ABs or fewer RGs than with a flat---the dept. accepts everyone!

Potential dominance of the flat structure

This is based on $p > \rho$.

If $\rho > p$, the hierarchy could dominate.

Start with $f = 0$ & $p = \rho$.

Then $t_B = t_G = 1/2$.

Then let $p\uparrow$ & $\rho\downarrow$.

The effect on t_B.

$\frac{\partial t_B}{\partial p}$? but, if $f = 0$, $\frac{\partial t_B}{\partial p} < 0$.

$\frac{\partial t_B}{\partial \rho} > 0$.

Thus, if $p\uparrow$ or $\rho\downarrow$, $t_B\downarrow$:

$t_B < ½$.

The effect on t_G.

$$\frac{\partial t_G}{\partial p} > 0.$$

$\frac{\partial t_G}{\partial \rho}$?, but, if $f = 0$, $\frac{\partial t_G}{\partial \rho} < 0$.

Thus, if $p\uparrow$ or $\rho\downarrow$, $t_G\uparrow$.

$t_G > ½$.

Why?

If $p\uparrow$, the dept. is less likely to recommend a bad candidate

If $\rho\downarrow$, the college is more likely to recommend a bad candidate.

Thus, the advantage of a hierarchy in terms of ABs $\downarrow$.

t_B falls

If $p\uparrow$, the dept. is more likely to recommend a good candidate

If $\rho\downarrow$, the college is less likely to recommend a good candidate.

Thus, the advantage of a flat in terms of RGs $\uparrow$.

t_G rises

Figure One. When $p > \rho$ and $f = 0$.

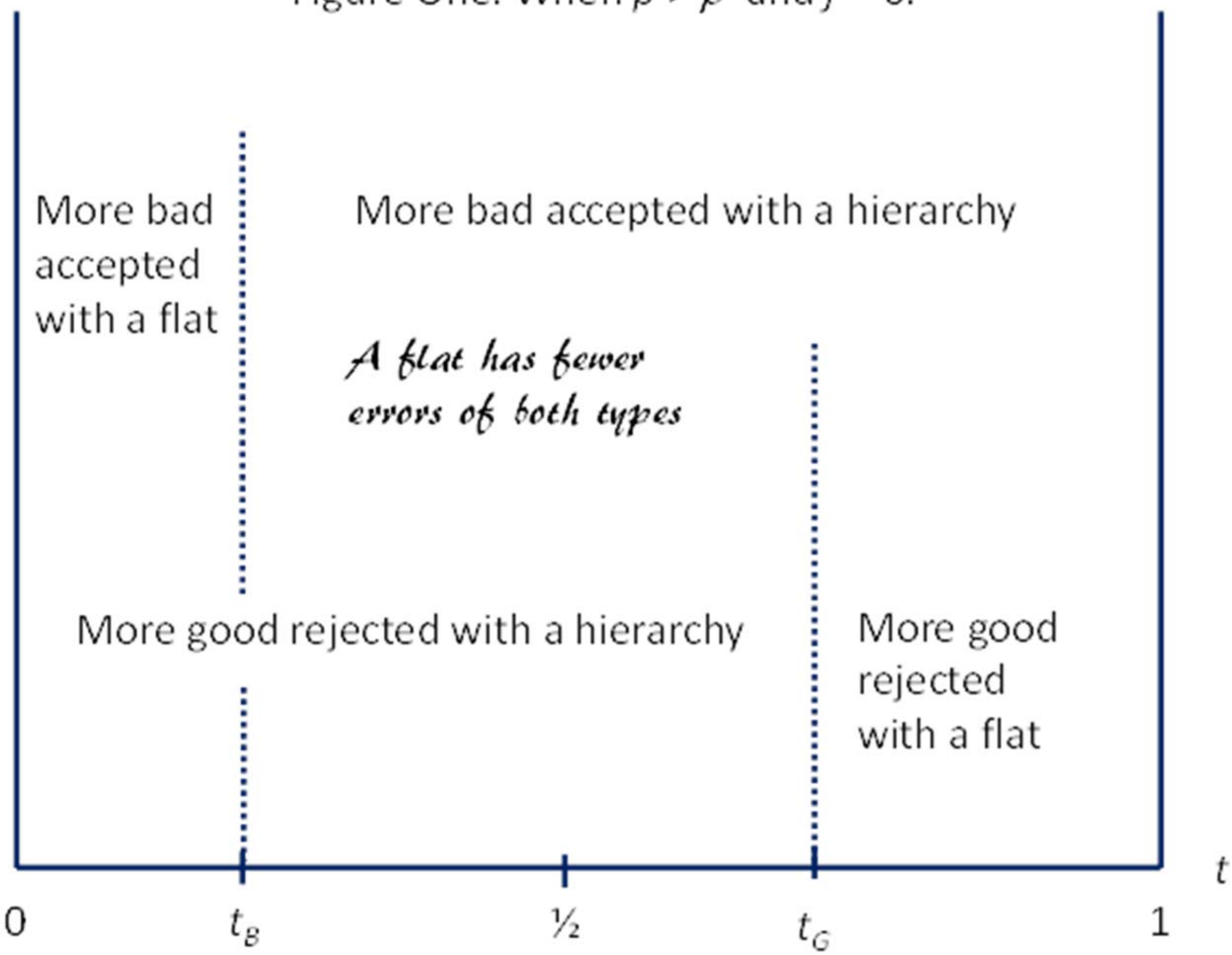


Table One (f = 0).

p	ρ	t_B	t_G
.9	.8	.308	.692
.9	.7	.206	.794
.9	.6	.143	.857
.8	.7	.368	.632
.8	.6	.273	.727
.7	.6	.391	.609

From Table Two (f = .2).

p	ρ	t_B	t_G
.9	.8	.609	.742
.9	.7	.476	.831
.9	.6	.361	.885
.8	.7	.568	.692
.8	.6	.458	.778
.7	.6	.541	.679

Extensions

If the administration only tenures with a split when the dept. is favorable.

Then $t_B = t_G = 1$.

A flat always has more ABs &

fewer RGs---no 2nd chance.

If the administration only tenures with a split when the college is favorable.

Then $t_G = 1$, & $t_B < 1$ only if:

$p(1 - f) > \rho$.

A larger $p(1 - f)$ means more accuracy or less bias by the dept.

A smaller ρ means less accuracy by the college.

Thus, we could have fewer ABs with a flat than with a hierarchy.

With less chance of promoting a good candidate with a hierarchy than in my general model, t_G = 1---a flat always has fewer RGs than a hierarchy.

Dept. committee vs. chair.

No outside committee.

Both have same accuracy & bias.

Result: $t_G = t_G = 1/2$.

Bias cancels.

Conjecture:

For tenure particularly,

universities fear ABs more than

RGs.

Reject a good candidate:

can always find another.

Evidence:

Universities with top 75 U.S. econ. depts.

Top 7 schools:

3 have 1 committee (Chicago, Stanford, & Northwestern).

3 have more than 1 committee (Harvard, Berkeley, & MIT)

NYU: dean has a choice.

Thus, essentially ½ of top 7 have 1 committee.

Duke (#14): 1 committee.

Cal Tech (#41): ?

All of the others have > 1

committee.

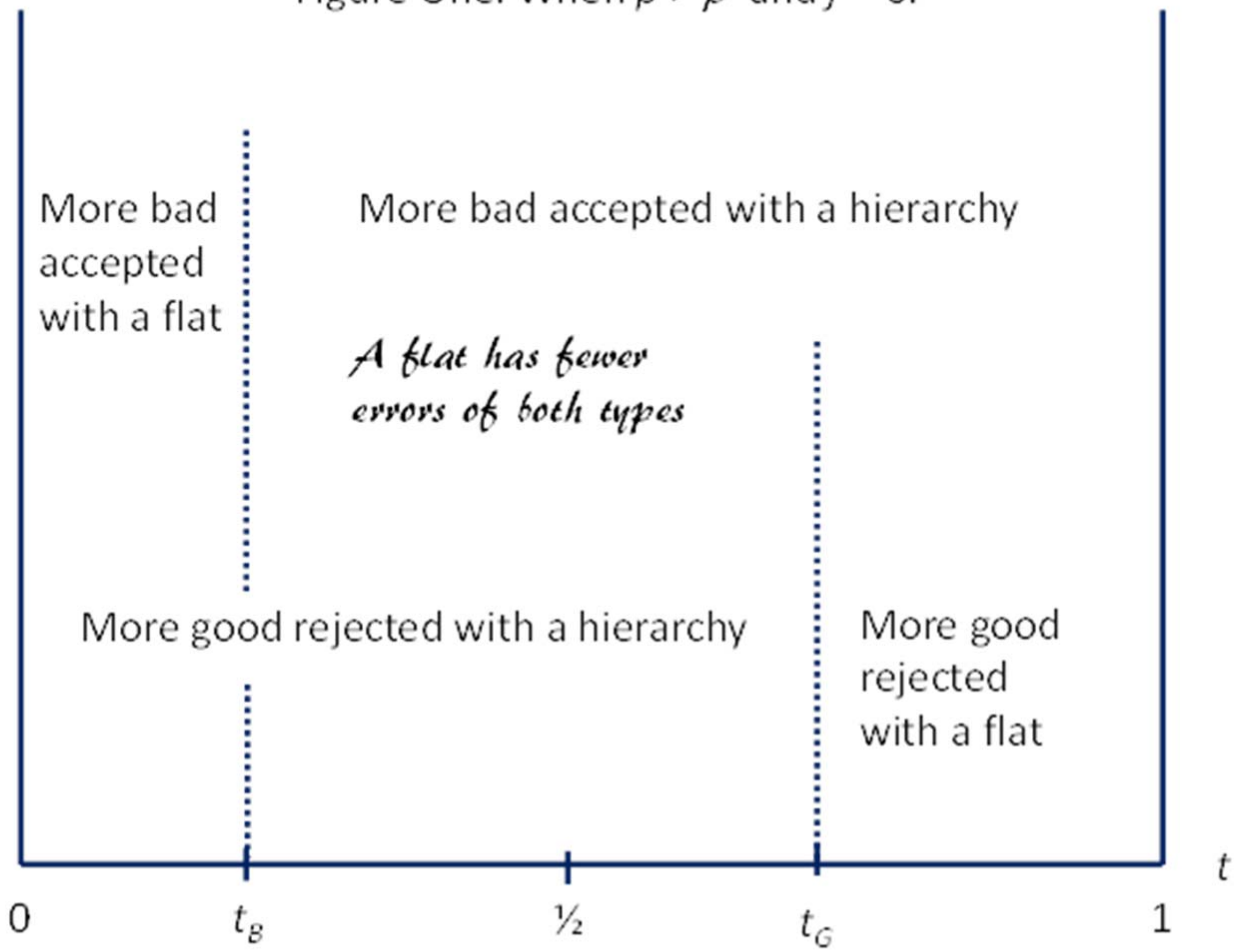
If universities have the same

objective (reducing ABs),

all would have a hierarchy if

$t_B = t_G = 1$.

Figure One. When $p > \rho$ and $f = 0$.



$\therefore$ Evidence is consistent with

my model--- $t_B < 1$.

However, is $t_B < t_G$ or vice

versa?

That is, is $p > \rho$, or is $\rho > p$?

❶ Suppose $\rho > p$ ($f = 0$).

Then $t_G < ½ < t_B$ (my general model).

Universities worried about ABs choose a flat only if $t > t_B > ½$.

Since I doubt many universities (these are with top 75 econ depts.) have $t > t_B > ½$,we see few flat.

However, does *any* top 75 university have $t > ½$?

Particularly, do Chicago, Stanford, Northwestern, Duke, & (possibly) NYU?

If they don’t, they would not choose a flat.

Thus, I am skeptical that $\rho > p$.

❷ Suppose $p > \rho$ ($f = 0$).

Then $t_B < ½ < t_G$ (my general model).

Now t_B is lower than in ❶---so it’s more likely to have (in this case) $t > t_B$.

Which means it’s more likely to

have universities that fear ABs

choose a flat in ❷.

Why aren’t there more

universities with a flat?

Argument for $p > \rho$.

a) If t is low, we expect few to choose a flat even if $t_B < 1/2$.

b) Again, does *any* university with a top 75 econ. dept. have t > ½?

c) If $p > \rho$ we can have $t_B < 1$ in 2 cases: both committees treated the same, & tenure with a split only occurs if the college committee is favorable.

If $\rho > p$, $t_B = t_G = 1$when a split can result in tenure only if the college committee is favorable.

Conclusion

Evidence is consistent with:

i. some universities get fewer ABs with a flat ($t_B < 1$);

ii. t is not too high (not many universities have $t > t_B$);

iii. Dept. committee is <u>not</u> supreme ($t_B = t_G = 1$ if it were).

Policy

Colleges with more

heterogeneity:

$p > \rho$ & $[p - \rho]$ is large.

There a fear of ABs $\Rightarrow$ a good

chance a flat is optimal.

$t > t_B$

In other colleges, [p - ρ] is not large.

A hierarchy may be optimal.

∴Universities might adopt NYU’s policy---let colleges decide on an external committee.

The end.

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