Pre-Trial Detention:
A Cost-Benefit Approach

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1. Introduction

This paper uses a cost-benefit approach to develop a model that can be used to explore the impact on social costs or social welfare of Pre-Trial Detention ("PTD"). It relies on earlier models of the choice between bail and pre-trial detention (Landes, 1973) and on the literature on the costs of crime (Cohen, 2005) to develop a framework within which policy choices can be analysed.

In a perfect world where only the guilty are arrested for crimes, and trials are speedy, all arrestees would likely be detained awaiting trial to determine their ultimate length of sentence (aside from those whose crimes do not warrant incarceration). To do otherwise would keep criminals on the street, reduce public safety, and result in general lack of confidence and respect for the law. Of course, not all arrestees are guilty (or can be proven guilty by governing legal standards), police and prosecutors do not have perfect information that would allow them to sort the guilty from the innocent, and tight governmental budgets oftentimes preclude speedy trials. Thus, the question should not be an "all or nothing" proposition. Instead, we ask "how much" PTD and "who" should be detained awaiting trial.

The social cost, W, of operating a bail/PTD system is an aggregate composed of a variety of economic and social costs which vary with the proportion of the individuals charged with an offence and awaiting trial who are held in pre-trial detention rather than released on bail. The objective is to identify the relationship between total costs and the proportion detained pre-trial so as to be able to deduce the pre-trial detention policy (p*) which minimises this cost function.

As in any model, a number of simplifying assumptions need to be made. In this paper we specify a simple policy choice of "how many" suspects to release pending trial. In reality, there are many policy levers that one could use to affect the number of suspects released – including the amount of bail money required, whether or not plea bargaining with reduced sentences are permitted, the number of judges hired (which affects the waiting time and hence the decision about whether or not to post bail)[1],

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[1] See for example, Torres (2008) who recently modelled the waiting time to trial in Australia.

whether indigent defendants are provided legal counsel,[2] etc. Our view is that these complications are best postponed for consideration at a later stage depending on the specific institutional structure of the country being studied. By focusing on the "bottom line" question of the fraction of defendants held in PTD versus those free pending trial, we are able to examine the underlying question in a more general and applicable framework. To complicate the model at this stage would increase the number of choice variables and make a solution much more difficult to characterize.

The starting point for the paper is the work of Landes (1973) who modelled the 'benefits of release on bail' as being the sum of four components:

> Gain from Release (freedom)
>
> + Jail savings
>
> - Harm caused while released
>
> - Cost of re-apprehension

These variables can be measured as either a positive or negative number; so that one could either think of minimizing the "gain" from release on bail or the "harm" from detaining suspects prior to trial. To make things simple, we have labelled each component as a "cost" or "harm." However, it is important to keep in mind that even though we identify the "harm caused while released" this is the same thing as the "benefit from not releasing" a detainee. Thus, we do not at all dismiss (and in fact incorporate) the benefits of PTD. We have also have added one component, namely the cost of the bail system itself. While the transfer (in the form of a bail payment) from the accused to the state is not a social loss, the resources devoted to bail bondsmen, etc. are a social cost.

The way we model the problem here is to look at each source of costs and benefits in turn and to establish how each is likely to vary with the proportion of suspects who are detained and not offered release on bail. We do not model explicitly the quantum of bail. This is essentially the same as setting bail at zero and releasing those offered bail on recognizance.

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[2] This is the subject of a subsequent paper by these authors.

2. Model of Pre-Trial Detention

The social problem is to choose the optimal proportion of those charged with an offence who are to be detained before trial (p*). Given the cost categories identified above, this is equivalent to minimizing the sum of costs associated with the following:

(1) "PTD" = COST OF PTD (food, prison guard, space, etc.)

(2) "BAIL", = COST OF BAIL (costs of administration to Criminal Justice System plus transactions costs associated with bail bondsmen, etc.)

(3) "CRIM" (CRIME) = COST OF ADDITIONAL CRIMES COMMITTED BY THOSE CHARGED WHILE OUT ON BAIL (victim costs − including intimidation/fear of victims of a released suspect,[3] increased community fear of crime, police, criminal justice system, etc.)

(4) "REPR" (REPROCESS) = COST OF APPREHENDING & PROCESSING ABSCONDERS (police and criminal justice system costs)

(5) "FREE" (FREEDOM) = COST OF LOST FREEDOM WHILE ON PTD (lost wages, risk of injury/illness while imprisoned, psychic costs, family costs, etc.)

It is worth noting that while these costs are specifically identified in terms of crime, they can just as easily be thought of in terms of "opportunity costs." For example, the resources that are spent on prison guards could instead be devoted to hiring teachers or social workers. Thus, while expressed in monetary terms, this discussion is not simply about money, but about the optimal allocation of resources within a society.

From the arrestee's standpoint, this can be put into a decision theoretic framework. Fig. 1 sets out a schema showing the principal decision points in the system. In the first round (the left-hand side of the diagram) the court makes a decision about whether to hold in custody the person who has been charged or to release them on bail[4]. A person who has been bailed decides whether to return to face trial or to flee justice. If they appear for trial the court makes a determination (assumed to be fair) as to whether they are guilty of the crime for which they have been charged. For persons

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[3] Another possible reason for PTD is to prevent intimidation of victims and witnesses by a suspect who wants to prevent them from giving evidence when a trial is held. Some surveys of victims of crime (such as the British Crime Survey) ask respondents about whether they have suffered intimidation once a suspect has been identified and charged, and also about the scale of the police response and the outcome of any such intervention.

[4] We assume that if an offer of bail is made it will be accepted by the arrestee.

found guilty the court chooses a disposal, whether it be imprisonment or a non-custodial sentence.

In the event that the person charged is held on remand (in PTD) and not released on bail the next event is the court hearing and deciding the case, since there is no flight risk. We assume that the trial outcome is independent of whether the person charged has been held in detention or released on bail.[5]
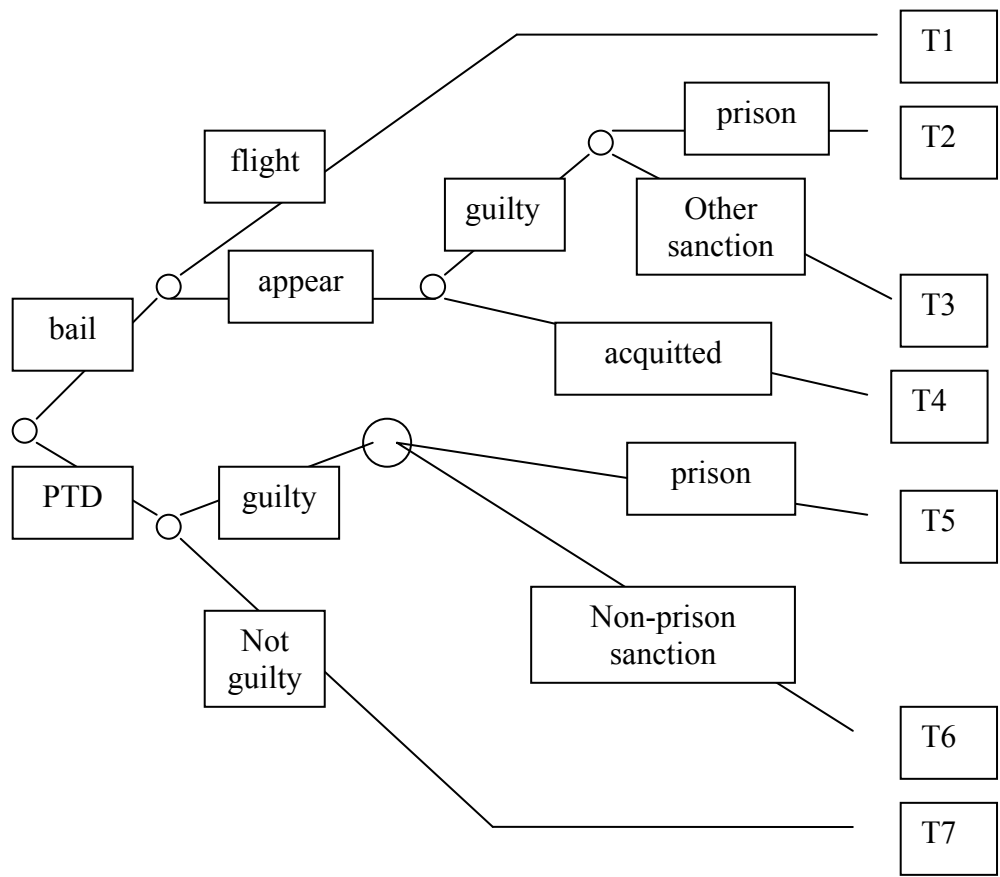

Fig 1   A decision theoretic account of PTD

The cost categories associated with each outcome (treated as a 'terminal node', T_i) in Figure 1 can be summarised as follows:

T1 => BAIL + CRIME + REPR

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[5] We note that this assumption about the independence of the trial outcome need not imply that the acquittal rate is similar for those held in PTD and those released on bail. The bailed group will in general be regarded as lower risk and on average to have a lower probability of conviction at trial. The important point is that the detention decision itself should not influence trial outcome.

T2 => BAIL + CRIM

T3 => BAIL + CRIM

T4 => BAIL + CRIM

NOTE: The expected rate of additional crimes committed might be lower for those who are 'innocent'; hence the cost of T4 might be lower than either T2 or T3.

T5 => 0

NOTE: We assume that any time served in pretrial detention is credited towards any prison sentence. Otherwise, the cost of T_5 is equal to PTD + FREE. In addition, we assume that the cost of a day in prison is the same as the cost of a day in PTD. To the extent these two costs differ, the costs and benefits would need to be adjusted accordingly.

T6 => PTD + FREE

NOTE: This assumes that there is no 'offset' for having spent time in PTD. However, if PTD is taken into account in applying the non-prison sanction, and if the "psychic" and other costs of PTD are comparable to prison, then FREE should not be considered a cost at all for defendants who are ultimately found guilty.

T7 => PTD + FREE

NOTE: Here, FREE is a cost since the arrestee is innocent.

An alternative way of characterising the same model is to express variables in terms of stocks and flows – in other words, we look at both the total number of detainees at any given time (stock) and the percentage of new offenders that are detained (flows). This represents the same options confronting bailed and remanded suspects. The principal difference is that it portrays the system in a way which more closely corresponds with the institutional structure on the ground and which may be more helpful when assembling empirical data for a country.

For purposes of the stocks and flows analysis, denote stocks with a capital letter, flows with a small letter and model parameters[6] with a small Greek character.

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[6] A model "parameter" is simply a constant in an equation. For example, while 'y' in our model is the absolute number of detainees who are sent to trial (and is thus a 'flow' that depends upon the crime rate, police resources, etc.), π is the proportion of offenders who bail who offend – which in our model is fixed. Of course, we may also examine what happens when a model parameter changes.

Denote:

Stock of PTDetainees, R
Stock of convicted prisoners, C
Stock of suspects on bail, B
Flow of new suspects during time interval Δt, x
Flow of PTDetainees sent for trial, y
Flow of bailed offenders sent for trial, b
Flow of convicts released at the end of their sentence, z
Proportion of new suspects detained (and not bailed) during time interval Δt, p
Proportion of PTD suspects acquitted at trial, α
Proportion of bailed suspects appearing at trial who are acquitted, β
Proportion of bailed suspects who fail to appear for trial, γ
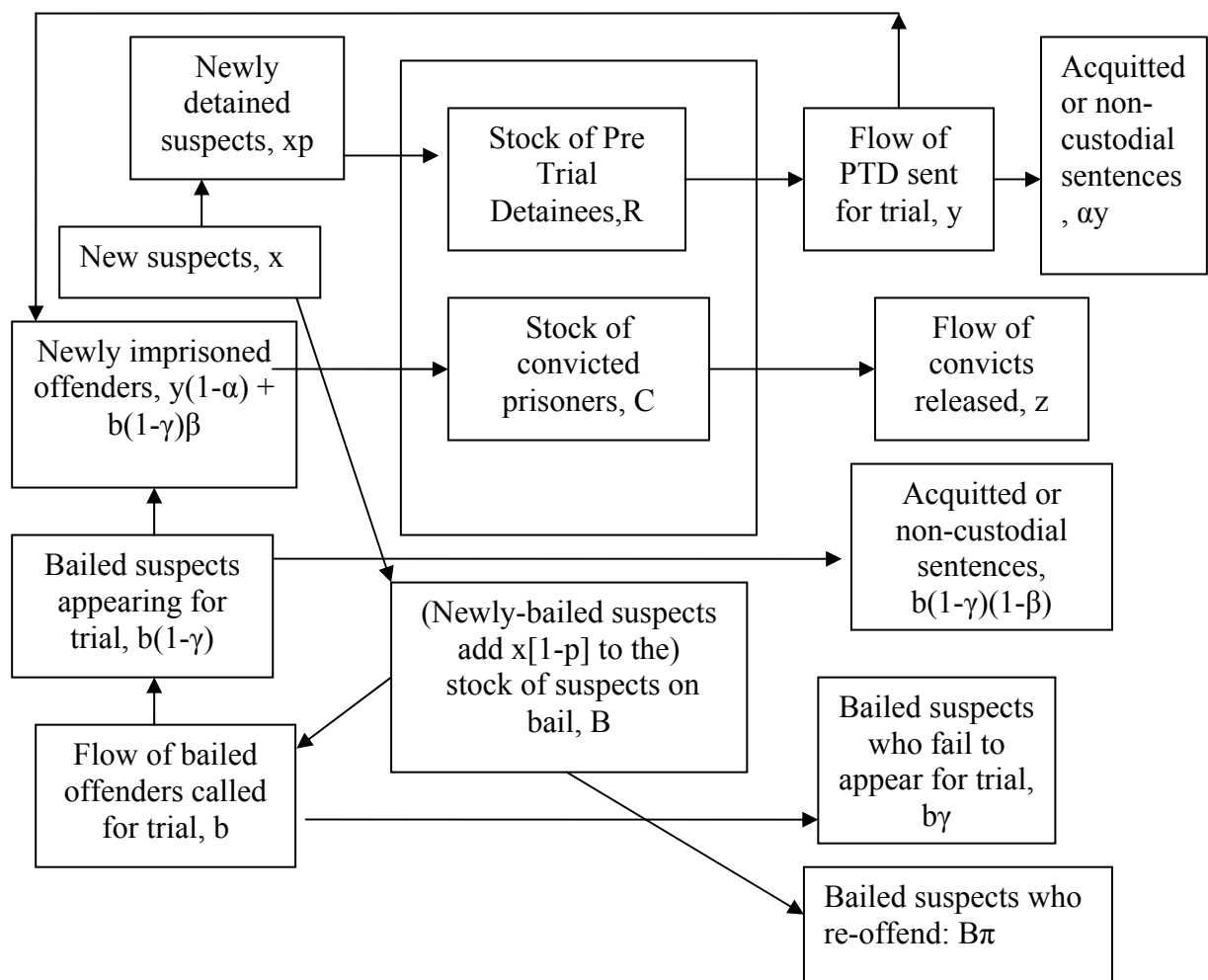Proportion of those on bail who offend, π

Fig. 2 A stocks and flows analysis of PTD

A more formal way of modelling the stocks and flows is to write down expressions for the initial (start of year) stocks and the end of year stocks as follows:

Initial stocks are as follows:

Number of suspects on bail at the start of the year: $B = B_0$
Number of suspects held in PTD at the start of the year: $R = R_0$
Number of convicted prisoners held in custody at start of year: $C = C_0$

End of year stocks are as follows:

$B_1 = B_0 + x(1-p) - b$ (number on bail)

$R_1 = R_0 + xp - y$ (number in PTD)

$C_1 = C_0 + y(1-\alpha) + b(1-\gamma)\beta - z$ (number of convicted prisoners)

Growth rates for each of these stocks are given as the change in the stock (final level minus initial level) divided by the initial stock. Longer term problems (in the form of pressure on prison places) are indicated if either or both R and C are increasing (i.e. exhibit positive growth).

Performance monitoring

One advantage of using the stocks and flows approach is that it suggests various kinds of performance measures that may be of help when examining the evolution of PTD through time in a country or when making cross-national comparisons. This might include:

1. *Ratio of PTDetainees acquitted at trial to bailed suspects acquitted at trial*
   If this ratio, α/β, is high (particularly if it exceeds unity) then there is some evidence that people are being held needlessly in PTD. If the ratio is low (say <0.5) then it is less easy to argue that this is the case.
2. *Ratio of stock of PTD to all prisoners (PTD + convicted prisoners)*
   If this ratio, $R/(R+C)$, is high then prisoners in PTD account for a large proportion of the total incarcerated population. Although this may be to some degree a product of legal rules and legal procedures, a high ratio suggests that further investigation of PTD practices may be warranted.
3. *Turnover of PTD*

If this ratio, px/R, is high then it suggests that the stock of prisoners in PTD is being turned over quickly. Other things equal this is a good sign. Another way of expressing this is to invert the ratio. This gives:

4.   *Average time held in PTD*

The higher the initial stock in PTD relative to the flow of new additions during the year (R/px years) the longer the length of the average period of PTD.

5.   *Turnover of bailed suspects:*

The higher is the ratio of bailed suspects sent for trial relative to the total stock of suspects on bail, b/B, the more quickly the stock is being replaced and thus the shorter the average time spent on bail. Another way of expressing this is to invert the ratio to get (B/b) which measures the average length of time for which suspects are on bail prior to a trial.

6.   *Proportion of **new** prison arrivals accounted for by PTD:*

The proportion of new prison arrivals accounted for by PTD $(xp/(y(1-\alpha)+b(1-\gamma)\,\beta))$ depends on the relative size of two flows. The first is the number remanded to pre-trial detention (xp) and the second is the number who have been convicted at trial and imprisoned. This latter can be split into two components namely those who held in detention prior to trial, who account for $y(1-\alpha)$, plus those who have been released on bail, have appeared for trial (and not absconded), been found guilty and sentenced to imprisonment, namely: $b(1-\gamma)\,\beta$.

7.   *Net growth rate of PTD stock*

If the net growth rate of the PTD stock $((px-y)/R_0)$ is positive then the PTD stock is growing. Unless there is unused capacity in the prison system this will put pressure on the system. In the short term, therefore, a simple comparison between the number of newly-received PTD prisoners and the number of existing PTD detainees who are sent for trial will be a key indicator.

8.   *Ratio of PTD stocks in successive years*

In practice it may be that the stocks (R and C) are better documented than the flows used in 7. In this event the best indicator will be the size of the PTD population in successive years. If $R_1 > R_0$ then the PTD population

is growing. This condition is equivalent to the condition in 7 but it does not require information about the size of the two flow components.

9.   *Parameter values α, β, δ and γ for cross-country comparisons*

For purposes of making cross-country comparisons information about the values of the various parameters identified in the model will be helpful. Of course many underlying factors will help determine these values including the type of legal system employed, the availability of legal services, income levels, pressure on the capacity of the prosecutorial and court systems and so on. By analysing the values of the parameters it is usually possible to help pinpoint what is contributing to any particular pressure on the system.

3.   Modelling policy options

The next step is to explore what happens to the various cost components as the proportion detained (p) is increased. From a policy perspective the objective is to identify the terms of the trade-off between the various cost components and the welfare-maximising proportion to detain. We look more closely at the cost items in turn.

CJS costs

We frame the discussion by looking at the costs and benefits of detention relative to those of releasing suspects on bail. We assume that the marginal cost of detention is increasing with p, while the marginal cost of bail administration remains constant at BAIL. The detention costs refer, as a minimum, to the costs to the criminal justice system of holding detainees in prison. But of course detention results in a number of other costs as well those of providing prison places. It is assumed that marginal detention costs are increasing in p since it is very unlikely that a prison system will have sufficient existing capacity to accommodate in detention all individuals charged with an offence. By making detention costs increasing in p we recognize that increasing the proportion held in PTD puts increasing pressure on prison resources and will taker the prison population towards, and ultimately beyond, the system's

capacity, thereby forcing increasingly costly contingency arrangements.[7] The total cost to the CJS is given by the costs of detaining xp suspects and of releasing the remaining (1-p) on bail. In Fig. 2 the flows through the system were given relative to a pool of x individuals who had been arrested and charged. For purposes of expressing costs and finding an optimising policy we can simplify by normalising the expressions and setting the number x to unity. For simplicity we assume that PTD costs are quadratic,[8] and denote its component costs as d_0, d_1, and d_2. This ensures that they increase with p. Combining these two costs, we arrive at the total "Direct Costs" of the PTD system (i.e. the costs to either detain or release on bail):

Direct Costs = Total cost of BAIL + Total cost of PTD
$$= (1\text{-}p)\text{BAIL} + (d_0 + d_1 p + d_2 p^2)$$

This expression for the total direct costs of a pretrial detention system changes with the proportion detained (p) as follows:

$$\Delta(\text{Direct Costs})/\delta p = \text{-}b + d_1 + 2d_2 p$$

We assume that the marginal cost of detaining a suspect in prison always exceeds the cost of operating bail for that person. This has the implication that the marginal Direct Costs are positive and increasing in p. With a quadratic cost function for detention costs, the marginal Direct Cost function is linear (i.e. it increases by the same amount every time p increases).

We note that it is being assumed in our model that a country has a criminal justice system which incorporates a fully functioning system of bail and PTD. This gives the court a choice between releasing suspects on bail and holding them in detention prior to trial. In practice we are aware that such a choice might not always be available and that significant investment in the CJS (in personnel, case management systems and so on) may be required before such a choice can be offered throughout a country.

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[7] This assumption might not hold in some environments. In particular, filling a prison beyond its capacity might lead to a lowering of the cost of detention at the margin if the criminal justice authorities do not hire additional security guards, do not have to increase utility expenses for heating and lighting, etc.

[8] A quadratic equation in p is one in which the outcome (costs) increase more quickly than p itself; hence we represent the equation with a squared term. This assumption is simply that the marginal cost of PTD increases as there are more detainees.

We note also that the question about how to deal with suspects between the date of charge and the date of trial itself only arises if there are significant delays in the delivery of justice. From a modelling perspective we are comparing the relative costs and benefits of changing the mix of bail and PTD. But this choice itself is implicitly holding constant the capacity of the remainder of the CJS. If delay between charge and trial can be reduced then aggregate pre-trial costs may fall. The wider question then becomes whether there might be a significant positive return on investment in speeding up trials. We have not addressed this wider question in our paper, since it might lead too far away from the central issue of PTD, but it is obviously important in terms of resource decisions about the justice sector.

Fig. 3 Direct Costs of PTD System and the proportion detained
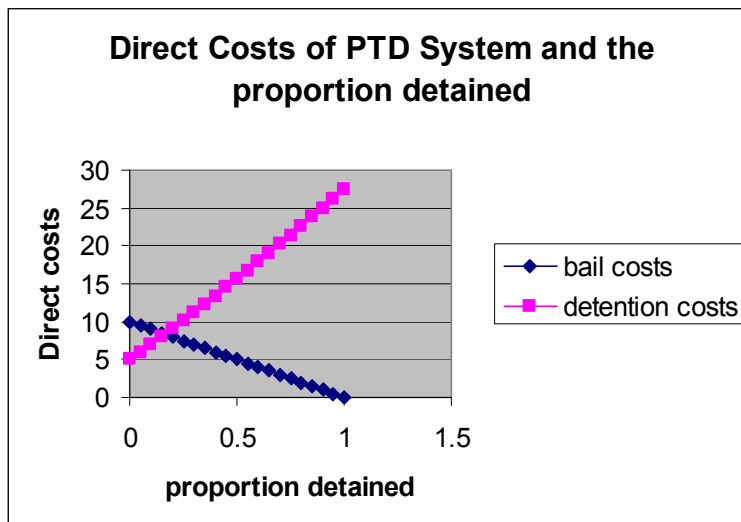
Risk of offending while on bail

Consider a group of suspects who can be bailed or detained. A key question is whether the court can assess at all reliably the risk that any particular suspect from this group will flee prior to trial or re-offend before trial if bailed. If the court has zero information about the risk and cannot identify whether suspect (1) is more or less likely than suspect (2) to flee or re-offend, then it may as well choose randomly which suspects to allow bail. Much more likely there will be indicators or signals that can be used to make an assessment of the risk. These indicators do not have to be perfect: we just need them to be more reliable than selecting those who are to be detained purely

at random.[9] Previous convictions history, age, gender and so on are known from the reconvictions literature to be quite highly correlated with re-offending risk: Philpotts & Lancucki (1979), Copas & Heydari (1997): Bowles & Florackis (2007). So we would conjecture that a court will be able to identify at least roughly whether a suspect represents a high flight or re-offending risk. Of course courts will always be prone to making errors and releasing suspects who abscond or re-offend and these errors can be very costly to the credibility of the courts. There is a danger however that the opposite policy, of releasing very few suspects on bail, is itself not only potentially very costly but is also less transparent in its effects.

For modelling purposes one possibility would be to treat the flight risk as random and the re-offending risk as to some degree predictable using evidence and parameters from the reconvictions literature.

When the proportion being detained is only small, the assumption is that the court will be able to identify suspects representing a higher risk of re-offending. As the proportion detained increases, the pool of suspects narrows and contains a smaller proportion of high risk individuals. The result is that the marginal benefit of detention declines as the proportion of suspects increases, since the scope for identifying high risk individuals is reduced and thus the crime prevention benefits decline.

A proportion, π, of those on bail will commit offences while awaiting trial. The costs to victims and to the CJS of investigating, apprehending and processing offenders is written as CRIM(p). The proportion re-offending, π, is positive but negatively related to p. It approaches zero as p goes to unity since there is virtually no-one out on bail to commit offences as more and more suspects are detained in custody. It is important to note here that while the probability of re-offending by an offender is the variable typically modelled in the recidivism literature, what we really want is the cost of the offending by a suspect. If we assume that there will be a delay of months or even years before a suspect is tried, a small proportion of those on bail may be offending on more than one occasion. Prolific offenders, particularly those with substance

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[9] As noted below, about 20% or more of people released pretrial in the U.S. fail to appear at trial (although only about 7% are still absconders after one year), and 14% are arrested for another crime while on bail.

misuse issues, may commit many thefts each month.[10] Some suspects will likely commit more offences than others if released on bail and that the courts will be able to determine with some degree of reliability who amongst the suspects are more likely to be prolific offenders if bailed.

The conjecture, in essence is that there may be a small number of suspects who represent a high risk of offending prior to trial if they are released on bail. The victim, police, and criminal justice costs associated with this offending may be substantial; particularly in respect of a small 'hard core' of offenders, and PTD may be an effective way of reducing these costs. As the proportion of suspects who are detained increases, however, fewer suspects are released on bail. The courts can thus be more selective about who they release on bail, with the consequence that those who are released are on average less likely to offend (or re-offend). The marginal contribution to crime reduction thus declines as more suspects are detained.

Further, an increasing proportion of this group might be acquitted at trial and thus the lost freedom costs will escalate, causing the marginal costs of PTD to increase.

The total cost of offending while on bail (taking account of both propensity to offend and the likely scale of any offending) can be modelled as a negative exponential. If we denote the total cost of offending while on bail by CRIM(p) then it is convenient to write:

$$CRIM=K*((1/crim)^p$$

Where:

K is the cost of offending by those on bail when nobody is detained (p=0)

crim is the marginal cost of offending as the proportion of suspects detained approaches 100% (p=1).

Fig. 4 illustrates the behaviour of CRIM as p is increased. Its characteristic exponential decay illustrates the working hypothesis that courts can identify high risk suspects reliably. In the polar opposite case where nothing at all is known about re-offending risk the function would decline in a linear way over the same range. For

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[10] While we do not need to consider modelling the volume of offences for purposes of this paper, we note that they can be estimated Poisson count regression models.

intermediate cases, where something is known about relative riskyness, the function would lie somewhere between the two polar cases but still be bowed towards the origin.

Fig, 4 Offending costs while on bail and detention rates

Cost of offending by those on bail
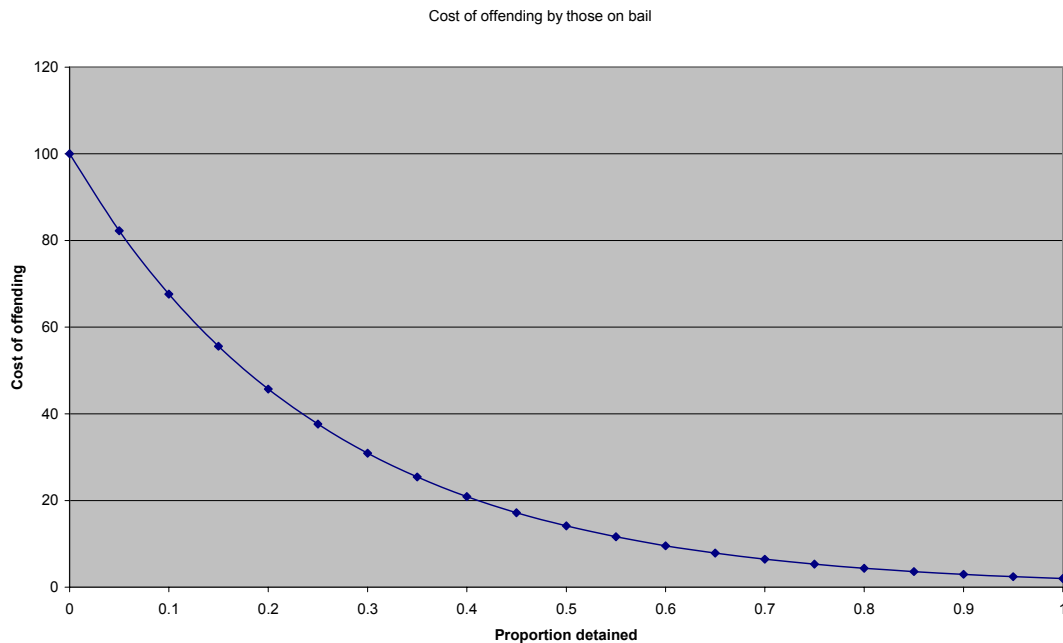
Flight risk

One of the reasons for detaining suspects prior to trial is the risk that a suspect on bail may fail to appear for trial. This risk may be correlated with the risk of re-offending. But, for simplicity here, we treat this risk as independent of other factors and something which is distributed randomly across the group of those awaiting trial. Given that a fraction p are detained, the proportion on bail will be (1-p). A fraction γ of this bailed group will flee and fail to appear for trial. This group will impose costs on the CJS since efforts will be made by police and other agencies to track them down and bring them to court. The total cost is given by $\gamma[1-p]REPR$ where REPR represents the cost of apprehending and reprocessing through the criminal justice system someone who has skipped bail. We assume that this cost is independent of the value of p. That might be justified, for example, by assuming that there is a competitive industry able to track as many bail skips as required without the cost per case increasing. Along with the assumption that flight risks cannot be identified at the time when bail decisions are being made, this implies that the cost of chasing up non-appearances remains constant (at $REPR\gamma$) with p.

Lost freedom costs

Amongst the proportion, p, of suspects who are detained prior to trial, some proportion, α, will ultimately be acquitted. The lost freedom for this group has a unit cost of FREE. As the proportion detained increases, a higher proportion of innocent suspects will be acquitted, since higher risk individuals will be over-represented amongst those detained first (when the proportion detained is low). It follows that the marginal cost of lost freedom will be both positive for all p and also increasing in p (since, increasingly, 'innocent' suspects will be detained). The simplest approach is to assume that the proportion of suspects who are acquitted will increase steadily with the proportion detained. We note here that we have assumed away the possibility that PTD might be used strategically by prosecutors as a means of inducing suspects (some of whom are innocent) to plead guilty to a lesser charge. This might to some extent confound the argument that the proportion of acquittals will rise with the proportion being detained. Survey evidence would probably be needed to establish whether such effects were significant in practice.

Ignoring these complications for the moment, however, assume that the costs of lost freedom are similar for all suspects, at an amount FREE. The total costs of lost freedom, F, on the assumption that the acquittal proportion rises linearly in p, are given by:

$F = p.\alpha(p).FREE$

Where we are assuming: $\alpha(p) = a_0 + a_1 p$

Thus we get: $F = (a_0.p + a_1.p^2).FREE$

This expression is accelerating in p, since detaining more suspects not only increases the number of detained suspects likely to be acquitted but also increases the probability that any one of them will be acquitted, since lower risk suspects are now being held.

Fig. 5 Lost freedom costs and the proportion detained

Lost freedom cost, F
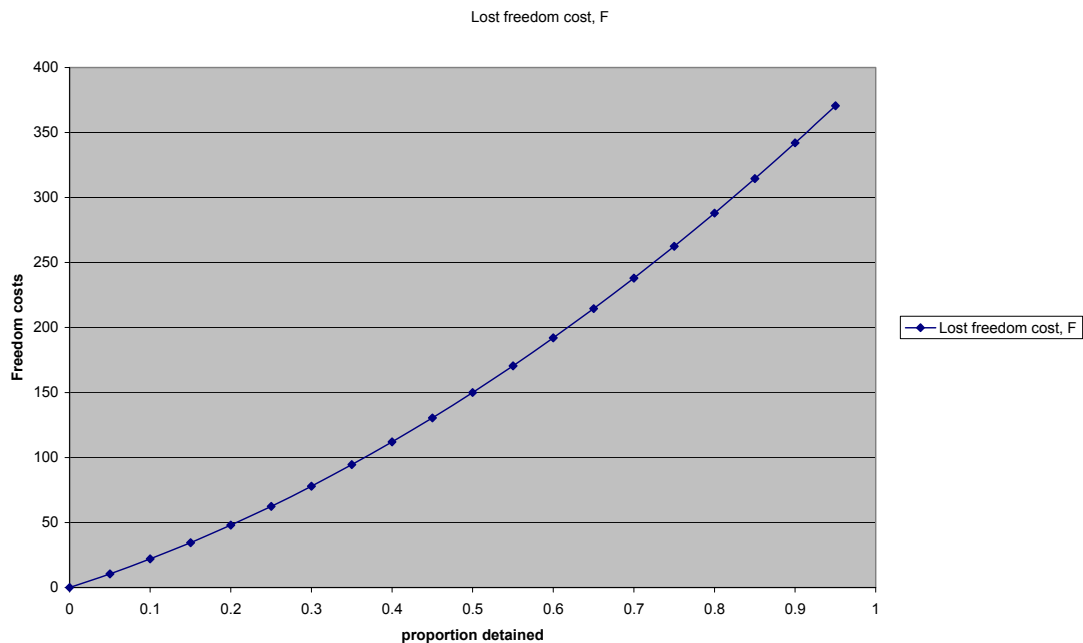
Identifying a cost-minimising policy

With the size of the group of suspects normalised to unity, the total expected cost (Z) of a policy of holding a proportion, p, of suspects in detention pre trial may be written as the sum of the components as listed above:

$$Z = d_0 + d_1p + d_2p^2 + (1-p)BAIL + CRIM(1/x)^{\wedge}p + \gamma[1-p]REPR + (\alpha_0p + \alpha_1p^2).FREE$$

A graph showing the expected U-shape of this function based on an arbitrary set of parameters for simulation purposes, as set out in Table 1, is given in Fig. 6. The set of parameter values chosen can be altered very easily in the excel model from which the output is derived and can thus be tailored to the country of interest. The cost-minimising value of p varies with changes in any or all of the 11 parameters in the model.

Finding a value for p at which this total cost reaches a minimum can also be done by setting the MC of p equal to the MR from p. This occurs at the point where the additional costs of raising p (costs to the CJS of detention plus the freedom costs) are just equal to the crime reduction value and the reduction in the costs of recapturing escaped bailed suspects the increase would produce.
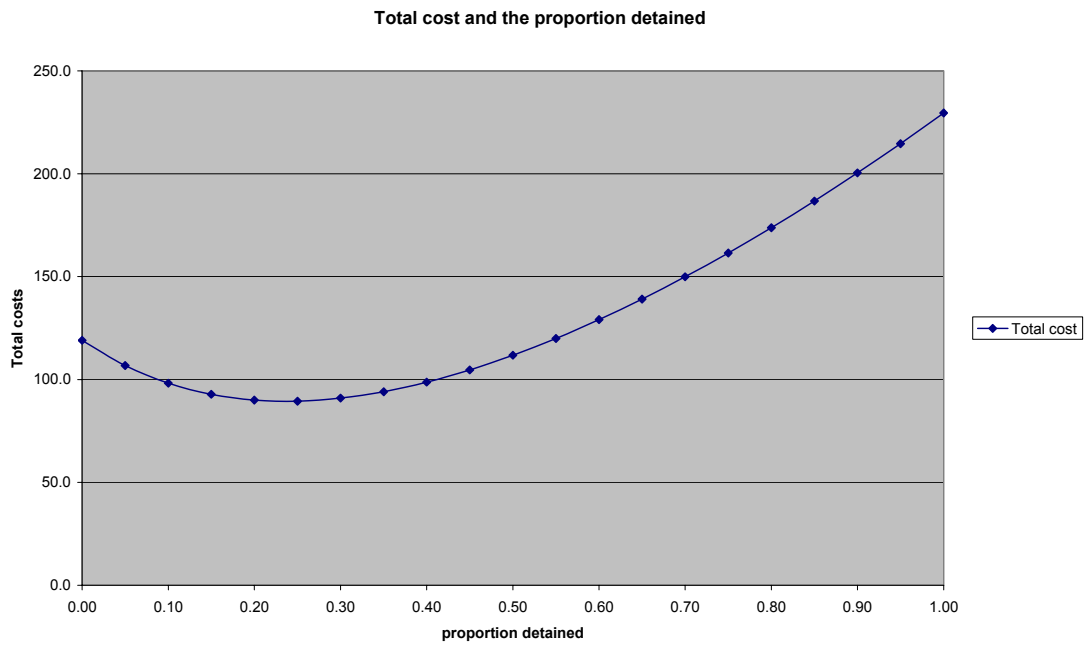
Fig. 6 Total cost and the proportion detained

Total cost and the proportion detained

Table 1   PTD Simulation Model

Full PTD cost model

Total cost functions:

Offending on bail costs	y=V*((1/x)^p)		
Bail administration costs	B=b*(1-p)		
PTD costs	PTD=f+g*p+h*p^2		
Bail flight costs	X=gamma*(1-p)*A		
Lost freedom costs	F=(m*p+n*(p^2))*C		

Parameters:

CRIM	100	Max value of offending on bail: p=0
x	50	negative exponential decay factor
BAIL	10	admin cost per bailed suspect
d0	5	fixed costs of PTD
d1	20	PTD cost: (linear) term in p
d2	2.5	PTD cost: term in p squared
REPR	40	apprehension cost per flight
gamma	0.1	propn. failing to surrender to bail
m	0.1	freedom cost: term in p
n	0.1	freedom cost: term in p squared
FREE	1000	freedom cost per acquitted suspect

proportion detained p	offending on bail costs y	bail admin costs B	PTD costs PTD	bail flight costs X	lost free-dom costs F	total costs Z
0.00	100.0	10.0	5.0	4.0	0.0	119.0
0.05	82.2	9.5	6.0	3.8	5.3	106.8
0.10	67.6	9.0	7.0	3.6	11.0	98.2
0.15	55.6	8.5	8.1	3.4	17.3	92.8
0.20	45.7	8.0	9.1	3.2	24.0	90.0
0.25	37.6	7.5	10.2	3.0	31.3	89.5
0.30	30.9	7.0	11.2	2.8	39.0	90.9
0.35	25.4	6.5	12.3	2.6	47.3	94.1
0.40	20.9	6.0	13.4	2.4	56.0	98.7
0.45	17.2	5.5	14.5	2.2	65.3	104.7
0.50	14.1	5.0	15.6	2.0	75.0	111.8
0.55	11.6	4.5	16.8	1.8	85.3	119.9
0.60	9.6	4.0	17.9	1.6	96.0	129.1
0.65	7.9	3.5	19.1	1.4	107.3	139.1
0.70	6.5	3.0	20.2	1.2	119.0	149.9
0.75	5.3	2.5	21.4	1.0	131.3	161.5
0.80	4.4	2.0	22.6	0.8	144.0	173.8
0.85	3.6	1.5	23.8	0.6	157.3	186.8
0.90	3.0	1.0	25.0	0.4	171.0	200.4
0.95	2.4	0.5	26.3	0.2	185.3	214.6
1.00	2.0	0.0	27.5	0.0	200.0	229.5

There is scope to develop a more formalised and more generalised version of the PTD model. For example, we could allow the cost functions to be more broadly defined (and not just linear, quadratic or negative exponential) or we could derive the first and second order conditions for minimising the total cost function. But our view is that for present, largely exploratory, purposes the model is sufficient.

4.   Compiling evidence of PTD costs and benefits for a developing country

The theoretical model of sections 2 and 3 is based on a number of assumptions, which are sufficient to produce an 'interior solution' for the cost-minimising PTD policy (i.e. at least in theory, we expect to be able to identify an 'optimal policy'). In order to translate the model into a tool for generating policy advice the assumptions need to be tested and the size of the relevant parameters established by empirical study. We make a start in this section on identifying the key questions that need to be asked. We also make some preliminary suggestions for a strategy that could be followed in drafting an empirical research programme for a developing country[11].

Each section below raises a cluster of empirical questions. The questions are documented and some preliminary suggestions made about the government agencies and other bodies which may collect or hold relevant evidence.

4.1   Legal issues
The legal setting in which PTD decisions are made will, of course, determine the procedural options and terms available to courts. It will be important in developing the model further to ground it on an understanding of the relevant legal environment and practice since this will influence the feasibility, as well as the costs and benefits, of making adjustments to the proportion held in PTD.

As we indicated in an earlier section the scope for organisations to manipulate PTD for opportunistic purposes may be very real even though this possibility is omitted from the current version of our model. Prosecutors may seek to use it as a weapon to raise the proportion of guilty pleas while police (prior to charge) or prison staff (responsible for suspects held in PTD) may seek to use it as an opportunity to raise money from bribes. Procedural rules, at a higher level in the corruption hierarchy, may be manipulated to facilitate such practice.

Initially however the key empirical issue is the detail structure of the legal foundations on which PTD relies. In building a picture of this structure in a country,

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[11] We note in passing that much of this same apparatus could be applied in principle to a developed country where the data would likely be more accessible. This means that some feasibility testing might be possible with developed country data.

key building blocks might be elicited from answers to a number of questions including: What guidance do courts get from legislation, case law or practice with regard to the criteria to be applied when deciding on whether to remand a charged suspect to prison prior to trial? Do these decisions have to be reviewed periodically? Who sets bail if bail is offered? What are the average levels of bail set by type of offence? Do detainees have any rights to challenge continuing detention? Potential data sources for addressing these issues will likely include: attorney general's office or ministry of justice.

It would be important also to collect evidence as to whether the guidance is followed in practice This is an empirical issue that might be approached from the perspective of several stakeholder groups including: court officials, ministry of justice policy makers, human rights or prisoner advocacy organisations and, of course, individuals who have been held in, or threatened with, PTD.

4.2   Prison evidence

As intimated in the section above on performance monitoring, there are some indicators of PTD practice that may be comparatively accessible, albeit needing careful interpretation. An opening question would likely be: What is the proportion of the prison population accounted for by those in PTD? Subsidiary issues might include: Is evidence of this proportion collected annually by a prison population audit? If not, is there some other form of recording from which this information can be derived? The reason for asking this question is primarily to get a first impression on how big an issue PTD is likely to be. If the proportion is very low then the returns from investigating it more closely may not be very great. But if, as is the case for some countries, there are no data or the proportion appears very high, then there may be a stronger prima facie case for closer analysis. In any event it would be useful to follow up the 'population proportion' question with information about other basic issues such as: What is the average (and standard deviation) length of time for which persons are held in PTD? This is a prisons administration issue, where information may be available from publications such as an annual report by, or official returns to, a central ministry with responsibility for prisons department, perhaps a ministry of justice.

4.3 Evidence about those released on bail

What if anything is known about the proportion of persons charged and released on bail who fail to appear for trial on the due date? What steps are taken to track down these individuals? What sanctions apply when they appear finally? What proportion of bail skips are located and successfully returned to court for trial? Is anything known about the scale of police and any other resources (including private investigators) used for tracking skips? [courts administration data: ministry of justice: police]

Is anything known about offending by people released on bail? How long do they spend on bail? What proportion offend? How many offences are typically committed by persons convicted while on bail? How serious are these offences? Do court records refer separately to new charges arising since the original charge? [court data]

4.4 Evidence about suspects held in PTD

Amongst those held in PTD what proportion are acquitted of the charges against them? [courts or sentencing data]

Is anything known about the impact of absence of a key member on a household economy in this country? [answer might well be country-specific]. If the person is a breadwinner held in detention what kinds of option are open to households, particularly those in poverty? Will the household be able to predict the likely length of absence? Are there likely to be others who are also contributing to household resources, and if so are they in a position to 'make up the gap'? Are there any data from the study of the impact on households of HIV/Aids (in this country or elsewhere) that may be of some help?

5. Background evidence

There is some evidence available from the literature on some of the questions raised in section 4. We consider each area in turn.

5.1 Legal issues: criteria for setting bail

As an illustration of our contention that courts try hard to screen bail applicants for the risk that they will fail to report for trial and/or commit offences while on bail we

summarise below the US criteria for bail. This may not be directly applicable in a developing country setting but it gives something of the flavour of the decision courts are making and how they go about it.

The U.S. Federal Government uses the following criteria for bail decisions:

(1) the nature and circumstances of the offence charged, including whether the offence is a crime of violence or involves a narcotic drug;

(2) the weight of the evidence against the person;

(3) the history and characteristics of the person, including –

   (A) the person's character, physical and mental condition, family ties, employment, financial resources, length of residency in the community, community ties, past conduct, history relating to drug or alcohol abuse, criminal history, and record concerning appearance at court proceedings; and

   (B) whether, at the time of the current offence or arrest, the person was on probation, on parole, or on other release pending trial, sentencing, appeal, or completion of sentence for an offence under Federal, State, or local law; and

(4) the nature and seriousness of the danger to any person or the community that would be posed by the person's release. 18 U.S.C. §3142(g) (1994).

While factors vary by state, the American Bar Association has recommended the following factors should be used by the Court to determine whether there is a "substantial risk of non-appearance."

(1) The length of the defendant residence in the community, his employment history, and his financial condition;

(2) His family ties and relationships

(3) His reputation, character, and mental condition;

(4) His criminal record;

(5) Whether there are responsible persons who will vouch for his reliability;

(6) The nature of the offence charged and the likelihood of conviction (insofar as these factors are relevant to the risk of non-appearance); and

(7) Any other factors indicating the defendant's ties to the community or bearing on the risk of wilful failure to appear.

[Source: Clarke, Freeman and Koch, 1976: 342-3]

Note that a similar list of factors have been recommended by prosecutors, although they contain an additional provision explicitly considering the probability that the defendant will commit a crime while awaiting trial. (National Prosecution Standards §§45.4, 45.6, National District Attorney's Association, 1991: as cited by Harmsworth, 1996: 234)

One concern about the application of bail criteria is the fact that accused offenders who post bail might in some circumstances be perceived by a court to be ineligible to receive legal aid at the trial stage. This is a double-edged sword. If an accused offender is "just" able to post bail, they might face the tough choice of remaining in PTD and accepting free legal counsel versus being released on bail and unable to obtain adequate counsel. See Butcher and Moore (2000) for a discussion of this issue in the State of Texas, where the authors found that, "Many trial judges take the position that the county should not provide an attorney to a person who is on bond and they refuse to make such appointments. When a judge persists in this, the defendant is forced to either scrape up the money necessary to retain a lawyer or he must go to jail. If the person is confined because he has not retained an attorney, it is likely to result in the defendant's loss of his job and the inevitable strains that are placed on family and personal relations." (p. 10).

5.2   Proportion of prison population accounted for by PTD

The United Nations Office on Drugs and Crime (UNODC) publishes data from many countries on the size of the country's prison population and the number held in its prison awaiting trial. Table 2 below summarises data for all countries with data available in 2002 . There is a considerable range, with many countries having 15-20% reporting of incarcerated individuals awaiting trial, while others are in excess of 50%.

Table 2   Prison populations and PTD

	incarc-erated	% AWAITING TRIAL	% ADMIN DET
Azerbaijan	19,136	0.00%	
Nepal	7,131	0.00%	
Oman	1,403	5.56%	
Turkey	64,051	6.75%	
Finland	3,433	13.92%	
Myanmar	32,797	14.85%	2.45
Lithuania	11,070	14.96%	
New Zealand	5,968	16.17%	
Egypt	61,845	16.74%	
Japan	69,502	17.26%	
Iceland	104	18.27%	
England & Wales	71,218	18.37%	
United Kingdom	78,753	18.58%	0.00
Kuwait	2,946	18.60%	
Belarus	51,238	19.19%	
United States of America	2,019,234	19.53%	
Czech Republic	18,669	19.53%	
Australia	22,492	19.62%	
Italy	55,670	21.48%	
Canada	35,519	22.47%	1.12
Sweden	5,920	22.50%	1.36
Germany	74,904	23.76%	
Hungary	17,862	24.24%	
Albania	1,532	24.41%	
Poland	80,497	25.96%	0.84
Moldova	10,903	28.96%	
Denmark	3,435	29.11%	
Malta	283	29.68%	
Northern Ireland	991	30.88%	0.12
Croatia	2,611	31.56%	0.47
Chile	36,636	35.00%	
Korea	58,564	35.72%	
Netherlands	16,930	37.12%	1.41
Belgium	8,605	37.63%	
Switzerland	4,982	40.43%	4.62
Morocco	54,351	40.58%	
Mexico	172,888	42.62%	
Jordan	5,589	42.85%	15.01
Latvia	8,483	43.84%	
Cyprus	1,254	43.94%	
Luxembourg	341	44.57%	0.23
El Salvador	11,055	49.67%	
Panama	10,350	55.15%	26.60
Argentina	44,969	58.88%	
Ecuador	8,274	62.36%	3.50
Peru	27,417	65.74%	

5.3   Evidence about those released on bail

Helland and Tabarrok (2004) studied PTD in a sample of 75 of the largest counties in the United States between 1988 and 1996. Overall, they found that about 17-21% of arrestees who were released on bail failed to appear at trial, compared to 26% of those who were released on their own recognizance. The weighted average 'failure to appear' rate was 23.2% (Helland and Tabarrok, Table 1). They also found a set of arrestees who were released under "emergency" conditions such as prison overcrowding. These arrestees are not released under a formal court procedure that judges factors such as their flight risk, probability of conviction, or severity of crime. Thus, in many ways, they can be considered a control group to those who are released through a formal bail procedure. Interestingly, those released under these "emergency" conditions had an absconding rate of 45%. (Helland and Tabarrok, 2004:Table 2).

However, approximately 30% of those who are released pretrial fail to appear within one year of the time they are to be at trial (Helland and Tabarrok, 2004: 109). Thus, while the initial "failure to appear" rate is about 23.2%, only about 7% of those who are released prior to trial fail to appear after one year [.232 *.30 = .07]. A review of several similar studies over various locations and times found similar results once "technical" failure to appears are eliminated. Harmsworth (1996: 222) noted that even for those who are released on recognizance, failure to appear rates generally range between 5% and 20%, while the rate of "wilful non-appearance" is generally below 5%.

Helland and Tabarrok (2004: 115) report that 14% of those on pretrial release are arrested for another crime before they are sentenced for the first crime. They do not report, however, the severity of the crime or whether these defendants are also convicted of the crime allegedly committed while on pretrial release. Harmsworth (1996: 260) reported on a number of other studies from varying times and locations, indicating that while reported re-arrest rates for those on pretrial release range between 15% and 18%, "only half of the re-arrests results in conviction…(and)…about one-half of the charges made against the rearrested defendants were for non-violent crimes (economic crimes or non-violent crimes against persons and public order." Thus, the authors conclude that the re-arrest rate

for dangerous offences (which would include burglary, robbery, assault, rape, murder) are "closer to 4% or 5%."

A recent study in the U.S. found that between 1990 and 2004, 23% of defendants who were released pending trial failed to appear, while 17% were arrested for a new offence while awaiting trial (Cohen and Reaves, 2007: 7). Of those who failed to appear, about 28% were still fugitives after one year – about 6% of all defendants released pretrial (p. 8).

5.4 Evidence about suspects held in PTD

We have not as yet located much evidence on the costs to suspects held in PTD or to their families. The way forward here might be to explore evidence from related fields, such as the health area, where there may have been studies of the impact on the remaining members of a household of losing a breadwinner or key earner.

6. Evidence on "Costs"

While section 5 focused on the availability of evidence on many of the key parameters in our model, section 6 analyses the availability of data on the costs associated with a PTD policy.

6.1 Cost of Pretrial Detention (PTD)

In theory, our model suggests that we want to estimate the marginal daily cost of holding a prisoner in pretrial detention, as any policy change would likely involve marginal adjustments in the number of defendants held in detention. The reality, however, is more complicated for two reasons. First, it is likely that moving from a regime of no PTD to one of allowing bail would result in a substantial change in the number of prisoners held – which could result in shutting down an entire facility or in the postponement of capital expenses associated with building a new prison. Second, in practice, it is not always easy to estimate marginal prison costs. Thus, we might often be left with estimates of the average cost of a day in prison – a figure that is likely to be higher than marginal costs. Since this would tend to overestimate any costs of PTD, it is important to try to approximate marginal costs if possible.

Estimates of prison costs can generally be obtained from government corrections departments. In the case that the country has one or more privatised facilities, daily costs will readily be available through the bidding process. While we have not yet done an extensive literature review, it appears there is some existing literature on prison costs that might easily be tapped into. For example, it is reported in South Africa, that the daily cost of holding a prisoner was R93.67 for public facilities and 132.2 for private facilities (Ntsobi, 2005: 100). Interestingly, private facilities are generally less expensive in a developed country - which is their main appeal. It appears that private facilities in South Africa are more expensive – yet they are also much better facilities in terms of safety and amenities.

One important caveat is that "prison" costs might differ from pretrial detention costs depending upon where defendants awaiting trial are held. This issue needs to be explored further in each country being studied.

6.2   Cost of Bail (BAIL)

In the United States, bail may be posted directly by the defendant, or more typically through a bail bondsman who charges 10% of the posted amount. A defendant who posts his own bail presumably has a time value of money that is less than 10% for the expected length of time awaiting trial; hence 10% is a fair estimate of the cost of bail to the average defendant. However, the U.S. has a well functioning credit market and a competitive bail bondsman market. It also has a median waiting time between arrest and case disposition of about 4 months (see Cohen and Reaves, 2007: 10). If the wait time is longer and/or interest rates are higher, we would expect the cost of bail to be higher. While we have not yet investigated the availability of studies of the cost of bail in developing countries, even if they do not exist, it should be relatively easy to ascertain the cost of a bail bondsman in countries where they do exist.

In addition to the cost to defendants, presumably the state incurs some cost associated with administering the bail system. This will be country specific and most likely can only be determined through interviews with court officials. For example, suppose country A currently holds all arrestees until trial, while country B has a preliminary hearing to determine whether or not there is probable cause and releases those defendants where the prosecution has not shown cause. In country A, the cost of a bail

system will be much higher as the entire infrastructure for a pretrial hearing will need to be incurred. In country B, the cost might be negligible, perhaps lengthening the preliminary hearing by a short period of time.

6.3   Cost of Crime Committed by Defendants Released on Bail (CRIM)

In addition to estimating the parameter π, the proportion of released defendants who commit an offence while on bail, we need to estimate the number and type of crimes committed by these offenders, as well as the cost of their crimes. For example, a recent study of felony defendants in U.S. state courts found that 11% were rearrested for felony offences and an additional 6% were arrested for misdemeanour offences while awaiting trial (Cohen and Reaves, 2007: 7). While they do not report the types of crimes charged, one could assume that they have the same distribution as arrests generally in the population. Then, one could apply unit costs of crime to arrive at a weighted average cost of crime committed by those on bail. One further complication is the fact that these are only offences that are reported to police and result in an arrest. Data from victim surveys can be combined with police reports to arrive at "multiples" to apply to the arrest figures to estimate the actual number of offences committed (see e.g. Brand and Price, 2000, Table 2.2).

Unit costs of crime have been estimated in the U.S. (Cohen et al, 2004) and the U.K. (Dubourg et al., 2005). Cohen (2005) and Cohen (2008) provide details of the methodologies for these studies, which could be replicated in virtually any country given adequate resources. In the absence of such a funded study, as a first approximation, one could conduct a literature survey of any studies in the country of interest that assess willingness-to-pay for reduced risk of death (i.e. statistical value of life). One could also compare the average wage rate in the U.S. or U.K. to the country of interest. Using the ratio of WTP and/or wage rates, one could approximate the costs of crime in the country of interest.

6.4   Cost of Reprocessing Absconders (REPR)

Defendants who are released on bail and who fail to appear at trial impose a cost to either bail bondsmen who track them down to recoup their losses, or by police. If they are tracked down by bail bondsmen, this cost is included in the overhead cost associated with pricing bail itself. Thus, it is only the cost to police of serving

warrants and re-arresting those who abscond. Data on these costs are unlikely to be available absent direct surveying of police officials. Those absconders who are caught will also be processed through the criminal justice system. Again, these costs are most likely to be available only through a survey of court officials.

6.4.1   Cost of Lost Freedom while in Pretrial Detention (FREE)

To an innocent arrestee awaiting trial, the value of their freedom would include lost wages (including any long-term effect on wages due to their incarceration), the risk of physical and psychological injury or death to them or their family, the psychic loss associated with lost freedom, and any out-of-pocket losses such as travel costs, child care or other costs associated with one parent being incarcerated. Empirically, this is one of the least studied areas of the 'cost of crime.'

6.5.1.   Lost Wages and the "Psychic" Value of Lost Freedom

At a minimum, the cost of lost freedom while in PTD can be approximated by the lost wages of the individual held. This can be estimated either through prisoner surveys or by examining median wage rates in the country (which, however, will likely result in an overestimate of the actual lost wages). For example, Cohen and Piquero (2008) estimate average legitimate annual earnings of inmates in the U.S. in the year prior to their incarceration to be \$14,626 – about half of median earnings in the U.S. Abrams and Rohlfs (2007) provide some empirical evidence using a sample of arrestees facing the bail/PTD decision that the implied value of freedom to those who fail to post bail and remain in PTD is equal to foregone wages (plus presumably any reduced food and shelter costs saved by staying in prison). However, since this is the U.S. system where bail is offered, the value of freedom to those who post bail is higher. Thus, we do not know from these data what the value of freedom is to those who are innocent and not provided access to a bail system.

One approach to valuing lost freedom is to examine the amount of compensation paid by governments to individuals who are falsely convicted of a crime, serve time in prison, and are later exonerated. While this is not a market-based valuation, it is based on society's valuation as expressed through the political or court process. Average awards in the EU in 2005 were approximately €2,000 per month – a figure that is considerably more than minimum wage in any EU country and more in line with

average earnings for the upper half of EU countries. Thus, using this approach would likely result in a figure considerably higher than lost earnings for those who are held in PTD – and at least partially account for some of the psychic losses associated with lost freedom.

6.5.2. Residual Family Costs Associated with Lost Wages

In general, lost income is the best measure of the opportunity cost of lost wages while in PTD. However, in some instances, this understates the true cost of lost wages (or labour services in the case of subsistence agricultural workers). To take an extreme example, if the sole breadwinner in a family is held in PTD, it is possible that his family could suffer from malnutrition, lack of necessary medical attention, etc. This is especially true in developing countries where there are few if any social service networks (although one would also need to assess the extent to which extended families take on the role of government social service agencies in each situation). Thus, the costs could be far in excess of the nominal wages (or value of services) lost.

The most direct approach to determine the effect of PTD on family deprivation (beyond pure monetary losses), would be to conduct a survey of detainees and/or their families. However,, locating their families in a random/systematic fashion might prove difficult. As a starting point, one might attempt to provide some case studies in order to determine the feasibility of gathering this data as well as to highlight the nature of the problem.

In some countries, annual household surveys are conducted that might document family structure, earnings, etc. Especially if the survey is a panel, in which case respondents are followed over time, it might include information about whether or not a family member is absent due to PTD.

Translating descriptive information about the plight of detainee families into monetary values will also prove challenging, but is conceptually possible. For example, children who do not receive medical attention they need as a result of lack of funds, might suffer from illnesses requiring significant medical attention and result in pain and suffering. Even if the medical attention is never received, the cost of medical care that should be administered could be used as a lower bound cost. In

addition, approaches used elsewhere to monetize pain and suffering can be applied here. It is possible that international medical relief agencies such as the Red Cross/Crescent etc. or Medecins sans Frontieres have relevant data on this subject.

6.5.3. Lost Parenting to Young Children and "Psychic" Loss to Children

A parent who is in prison leaves behind children who might suffer from psychological trauma from having a parent absent. In addition, however, those children might suffer from lack of parenting in many other ways, such as lack of encouragement and assistance in schooling, getting into the wrong crowd 'on the street' when a parent is not around to supervise, etc. These issues might even arise when the parent who is absent is not the normal caregiver – but when the remaining spouse must now work (or work longer hours) to compensate for lost earnings. On the other hand, for some children, removing a parent from the household is a positive event – especially when the parent was a heavy drug abuser, involved in organized gangs, engaged in spousal and/or child abuse, etc.

To date, few studies have been conducted on the cost to children of incarcerated parents. The one exception in the U.S. is Lengyel (2006), who attempted to estimate the social costs of imprisoning a drug offender who is the parent of young children in New York state. While the study has too many limitations and flaws to discuss here, the idea behind the study is laudable and it shows how one could begin to enumerate these costs. We sketch the approach below:

First, one would need to determine what percentage of detainees has young children at home (most likely from detainee surveys, although one could presumably import other demographic information as a first cut). Second, one would need to estimate the frequency of "impacts" on these children – most likely through a survey of detainee families. This would require a careful control/matched sample group (or would otherwise rely upon more anecdotal evidence). Finally, some valuation methodology would need to be adopted. One approach would be to obtain external assessments of 'harm' and translate this into monetary equivalents. Another method might be through a contingent valuation survey. For example, adult family members of detainees might be asked their willingness-to-pay to avoid PTD, with comparisons being made between those who do and those who do not have young children.

6.5.4. Physical and/or Psychological Injury Related to Lost Freedom

Other evidence that might be brought to bear in estimating the cost of lost freedom is the higher rate of sexual and physical violence, death, and illness to those who are incarcerated. For example, Ntsobi (2005) cites several studies in South Africa that find high incidents of physical and sexual assaults and murders in prison. The evidence in the U.S. and other developed countries appears mixed, however, once careful attention is given to the underlying rate of violence against this population outside prison. We are not aware of any studies that specially examine excess violence to those being held in PTD (as opposed to prisoners in general).

To estimate the costs associated with injury or death while incarcerated in PTD, we must first estimate the excess rate of such incidents in the population. This is not a trivial task, as many incarcerated individuals otherwise live in unsafe neighbourhoods and/or lead unsafe lifestyles "outside" of prison and thus the baseline comparison must be carefully assessed. In fact, it is theoretically possible that prison is a "safer" environment for some individuals. Of course, on whole, we expect just the opposite. But this suggests that to study excess injury/death rates, one must conduct a careful study of the imprisoned population (preferably those being held pre-trial) to a similar population – using either a matched sample designed study or regression analysis attempting to control for socio-demographic characteristics of a comparison group.

The second part of such as study would involve valuing any excess injury/death rates. This would follow traditional studies on the cost of illness, victimization or death, using methodologies similar to those discussed Section 6.3. One of the complicating factors in such estimation is that many of the illnesses we anticipate being contracted by detainees are infectious in nature (e.g. TB and HIV), and thus might also infect their families upon release and/or others in the community. To account for this indirect "multiplier" effect, one would need to survey the epidemiological literature on the spread of these diseases and estimate a multiple.

6.5.5. Crimogenic Impact of PTD

There is evidence in some countries that suggests the prison environment fosters criminal behaviour through either socialization or actual training of criminal techniques. To the extent this is true, a stringent PTD policy could create a long-term cost of crime itself once these detainees are ultimately released. Documenting any criminogenic effects of prison, however, is not an easy task. It requires well designed studies and comprehensive data to analyze.

6.5   Community or Society-Level Costs

Our model and the subsequent discussion on empirical approaches focus on the costs and benefits at the margin – i.e. what are the costs and benefits of releasing a defendant prior to trial. They also focus on the direct and indirect consequences of detaining one person – so that even detaining one person pretrial might impose costs. Yet, moving from one legal/social regime – say, a system where no pre-trial release is allowed - to another where a swift, meaningful, transparent pre-trial release policy is the norm - might bring about systemic changes in social cohesion, perceptions of fairness, trust in police, etc. For example, lack of public trust in police is often cited as one reason that victims are reluctant to report crime to police. As another example, lack of an effective pre-trial release system coupled with lengthy waiting times for trial might facilitate a system of bribery in order to bypass normal PTD, further eroding public confidence in the system. Finally, a community in which a large number of detainees are held without reason might engender a lack of social stability and lack of adherence to social norms by members of that community.

Estimating the value of 'trust' in institutions is not an easy task. One approach that has been developed in the literature is to compare countries (or other jurisdictional boundaries) with varying degrees of institutional integrity. For examples, studies have related the existence of organized crime and corruption to economic indicators (see e.g. Van Dijk, 2007), Essentially, researchers obtain independent measures of corruption, trust, etc. and then use these measures as explanatory variables in regressions that attempt to explain economic outcome variables such as GDP/capita. While we are unaware of any such studies focusing on the criminal justice system, the

approach is the same – although it is not clear that the linkage to economic activity is as close in this case.

Another approach to estimating the value of institutional integrity would be to survey residents in a community and solicit their willingness-to-pay for such outcomes. Contingent valuation methodologies have been applied to numerous goods and services that are not normally traded in the marketplace, including environmental amenities and crime. While we are unaware of any such studies that go towards the public's willingness-to-pay for public trust, etc., it would not be difficult to adapt this method to the question at hand. One problem is that willingness-to-pay is inherently dependant upon ability-to-pay. Thus, it is not clear how readily this will translate into the context of a developing country – it might depend upon the country and context. Moreover, one would need to adapt the questions to the cultural/social context.

7.   Concluding remarks

The paper has set out a model of PTD that builds on cost of crime methodology. It provides a framework within which to explore PTD issues and the key policy issues it raises. It provides a starting point for case studies that might look in greater depth at the operation of PTD in particular countries.

Further steps to develop the work further could include:

- Complete the documentation of the model and derive the comparative statistics
- Collect some basic descriptive data (from UNODC) on the proportions held in PTD in a number of African and comparator countries
- Explore the scope for collecting data on key parameters in the model, using indicative numbers for a number of developing countries as a means of guiding further empirical study

We conclude by observing that there are various complicating factors that have been neglected in the search for a basic model that captures some of the key features of the PTD landscape. For example, the policy 'choice' might not only be to select a detention proportion (p^*), but also to select a length of time from detention to trial (see e.g. Torres, 2008). By reducing pre-trial delay (for example, by hiring more

court clerks, judges, etc.), it might be possible to reduce pretrial detention time without increased risk of new crime. This would reduce the proportion of the prison population who were being held on remand and might contribute effectively to cost reduction. Of course optimizing over two variables raises the risk of generating multiple solutions to the cost minimisation problem.

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