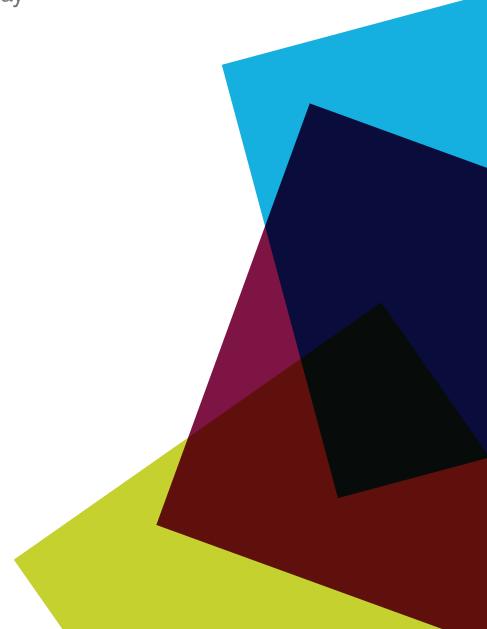BIRMINGHAM | SCHOOL

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Political consequences of profit-seeking media

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Manufacturing extremism: political consequences of profit-seeking media[*]

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Abstract

We analyze the consequences of a monopolistic, non-partisan, profit-maximizing media on policy divergence. The media undertakes costly coverage that may reveal the quality of an office-seeking political challenger only if quality-conscious voters pay an access fee. Voters are ideologically homogenous and the incumbent politician is a populist with known quality. We show that while media absence implies a populist challenger, media presence yields platform extremism: it creates demand for information about quality and provides incentives to the media to invest in coverage that are exploited by high-quality challengers to signal strength.

Keywords: Unobserved quality, Political challenger, Demand for electoral news, Media coverage, Platform extremism.

JEL Classifiers: C72, D72, D82

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Elections are often believed to be influenced by the way the media covers political candidates. This can, of course, stem from the media being ideologically biased either on its own or through market segmentation in order to compete for viewership of ideologically distinct constituencies. Media bias, in turn, can motivate political parties to pander to the media to attract favourable endorsements, thus creating platform extremism and ideologically polarized contests. In this paper we show that the media does not have to be biased, the voters need not be ideologically divided and the media market need not be competitive for media presence to yield a polarized election. Being profit-maximizing, even a monopoly media will respond to a demand for information. The voter will be more interested in information about candidates whose governance abilities are not as well-known as, say, the incumbent's, and whose potential accession to office has an ideological cost for the voter. The voter might still wish to consider such a less well-known, more extreme challenger, if such a candidate signals the ability to perform better than the incumbent in some non-ideological dimension that voters care about. Such a demand for information about ideologically more extreme candidates would lead even a non-ideological but profit-maximizing media to commit more resources for providing such information. We show that this investment in news will increase with the ideological extremism of the challenger, and this in turn will induce higher quality challengers to strategically pick ideologically extreme (or polarized) electoral platforms.

Polarization in politics and the success of political challengers who espouse ideologies away from the centre has been observed in a number of countries. As shown in Hare and Poole (2014), Republican and Democrat politicians are further apart today than they have ever been with an almost vanishing breed of centrist politicians. Interestingly, there is strong evidence at the same time that politicians with more extreme positions get more news coverage. McCluskey and Kim (2012) examined the coverage of 208 political action groups in 118 newspapers in the United States. They conclude that "groups that expressed more polarized opinions on political issues were mentioned in larger newspapers, appeared earlier in articles, and were mentioned in more paragraphs." This is not confined to the US alone. Even the unfavorable and persistent press coverage that UK's Jeremy Corbyn has recently received may have played a part in getting him elected by highlighting his 'character' and his repeated refusal to pander to the median voter which voters seemed to have liked. India's current Prime Minister Narendra Modi was considered to be a polarizing figure when he challenged the then ruling Congress party in the 2014 General Elections. In the run up to the election, Modi got 7.5 times more coverage than the Congress leadership. Several press releases and opinion polls suggest

that voters saw him as a decisive leader who could nonetheless deliver a well-governed India. Indeed as the New York Times reports, Modi, 'has emerged with a bold, right-wing narrative in a country with a staunchly socialist past' even while the centrist Congress is struggling with an image of policy paralysis.[1]

One may argue that polarization of politicians and success of extremist parties are simply a response to the electorate becoming more ideologically dispersed. However this does not seem to be the case. A 2014 survey by Pew Research Center finds that this 'partisan sorting' of party members in the US Congress extends only to those voters who have strong political convictions. Also, as argued by Fiorina (2014), the distribution of ideological preferences of American voters has been largely stable since the re-election of Ronald Reagan, and if at all, attitudes of the general mass on most issues "continue to cluster in the middle rather than lump up on the extremes." In addition, Evans (2003) and DiMaggio et al. (1996) find that many opinion distributions have become less dispersed than in the past and more centered on one middle position. It has also been argued that the ideologically extreme positions that challengers often take in the US may occur as a result of their facing a more extreme group of voters in primaries. However, this does not appear to be the cause either (see Shigeo et al. (2010)).[2] This raises the question that if the ideological distribution of voters remain largely stable or the average voters become more centrist in their opinions, what can cause parties to diverge in their policy platforms?

A recent and influential literature in the field of media and politics advocates the notion of media induced polarization and sorting, largely based upon suggestive evidence that media has ideological bias, either through elite participation and representation or by the demands of their 'partisan' viewership bases.[3] Existence of media bias is argued to lead politicians without an established valence to pander to this bias by choosing policy platforms close to the ideal policies of the media in anticipation of obtaining more favorable media endorsements about their calibre.[4] Moreover, partisan media can potentially influence both professional politicians and voters with existing bias to become more distinctly sorted as these partisan media can broadcast polarized views of otherwise established

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[1]The full article can be found at "http://india.blogs.nytimes.com/2013/05/16/what-makes-narendra-modi-a-middle-class-hero/?$_r = 0$".

[2] Neither can this explain polarized politics in countries where the primary system is not prevalent nor the ultimate success of ideologically extremist challengers across the globe.

[3] Most of the literature concerns non-digital news. An exception is a recent work by Gentzkow and Shapiro (2013).

[4] The literature on media's influence on politics is large (see e.g. Andina-Diaz (2006), Chiang and Knight (2008), Della Vigna and Kaplan (2008), Anderson and McLaren (2012), Chakraborty and Ghosh (2015) and Chakraborty et al. (2015). For an excellent survey see Prat and Stromberg (2013).

elites. But an analytical survey by Prior (2013) on media and political polarization concludes that "most large media outlets [in the US] are centrists compared to members of Congress" and there is no compelling evidence that partisan media, even if it existed, have made Americans more partisan. Moreover the survey suggests that "most voters avoid partisan media altogether or mix and match across ideological lines. And those who follow partisan media closely and select mostly one side are already partisan."[5]

Nonetheless, the media's influence in a vibrant democracy cannot be ignored and Prat (2014) demonstrates that attention shares or 'viewership' is crucial in empirically determining the existing media power to influence electoral outcomes. In exercising this power successfully, two aspects of the media market gain prominence, namely, ideological bias and profit motives, and the possible connections between them. As shown in Bernhardt et al. (2008), maximizing profits may involve catering to a partisan audience by slanting the news and this bias may yield loss of information, potentially resulting in inefficient electoral outcomes. Regarding competition, although Gentzkow and Shapiro (2008) show that media competition can partly enhance the quality of coverage, Gentzkow et al. (2014) however find evidence that voters prefer like-minded news and that newspapers may strategically choose political orientations to differentiate from competitors and enhance viewership as well as revenue from advertisements. This enhances diversity and affects political outcomes.

When the electorate is ideologically divided but uninformed about both valence as well as ideological positions of competing political alternatives, media competition can generate polarization even without media having to take strategic partisan stands. For example, Perego and Yuksel (2015) show that competition amongst profit maximizing non-partisan media outlets can segment such an electorate by broadcasting more news on ideology rather than valence, thereby making voters more informed, and ultimately sorted, in ideology. Although their work does not address how political parties may respond to this ideological sorting of the voters through platform choice, one may argue that such ideological sorting can then lead to platform divergence. As mentioned before, we show that pure profit motives of the media with a goal to serve the electorate by selling news about valence of political candidates can by itself manufacture extremist challengers even when the electorate is ideologically united and media has no incentive to supply

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[5] Oliveros and Vardy (2014) show that the option to abstain breaks ideological segregation and generates this 'mix and match' in news consumption, leading to disproportionately higher demand for media outlets that are centrist or only moderately biased. Bernhardt et al. (2006) show interestingly that if the media are biased, then there are some news realizations such that the electorate appears more polarized to an outside observer, even if citizens' policy preferences do not change.

slanted news. Moreover, we show that competition among media outlets is not necessary for generating this platform divergence.

In this paper, we consider a profit-maximizing, dominant (monopolistic) media outlet with no policy bias. The voter has firm beliefs about the quality of a populist incumbent party while the media can provide information about a political challenger with unknown quality by investing in costly coverage about the challenger, thereby generating signals about his quality. It will do so provided the voter is willing to pay for this coverage. Voters are ideologically similar (in our model identical) and value news about the challenger's unobserved quality. Their willingness to pay for this information increases with the degree of platform extremism as that makes the unknown challenger a more risky political alternative, inducing them to 'buy' news in increasing quantities. As a consequence, platform extremism yields the required opportunities for a profit-seeking media to invest in coverage and at the same time provides strong incentives to a high-quality challenger to strategically reveal her type to the voters via media coverage induced through platform extremism. Thus, ideological polarization occurs but interestingly, it does so without either the candidate or the media having any ideological leaning or the electorate being ideologically divided. In this paper we formalize this theoretical premise and obtain it as an equilibrium outcome. In particular, if the incumbent is less likely to be of high-quality than the challenger, we show that platform extremism to attract media coverage is a robust equilibrium feature. Also if cost of political entry is small, there is neither pro-nor-anti incumbency once the challenger has announced his policy but before the media coverage is conducted. Otherwise with higher entry costs the equilibrium is one where there is anti-incumbency. If on the other hand the incumbent is more likely to be of high quality than the challenger, then platform extremism disappears when entry costs are small.

Two issues are worth emphasizing. First, that the presence of an informative media is crucial to induce polarization in our model. Without a media outlet, the mechanism of signaling through extremism will break down, as with the absence of a credible source for verifying quality a low-quality challenger will always mimic the actions of the high type by choosing the same policy. Thus, elections will not help the voter learn about the quality of the challenger at the time of voting. Second, the presence of a profit-seeking media but with some ideological bias may in fact reduce extremism, if anything. This is because media bias can destroy the credibility of news when the platform chosen by the challenger is 'embarrassingly' close to the media's ideology. On the other hand, taking an extremist position far away from the media bias and on the opposite side of the ideology spectrum may take away the media's incentives to use resources on coverage even if that

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generated viewership. These two forces put together can induce high-quality challengers to reduce extremism in comparison to what is obtained with an unbiased media.

Although the profit motive of the media induces a high-quality challenger to take extremist policy platforms, our analysis also suggests that both the media as well as the voter can sometimes get it wrong. This is due to the fact that in equilibrium, low-quality challengers mimic the actions of their high-quality counterparts with strictly positive probability. Thus, while fear of media revelations and the high costs of contesting elections screen out low-quality candidates to an extent and allow political competition to be somewhat informative, given the tradeoff between informativeness and loss of ideological alignment, the degree of extremism gets bounded. Even at the upper bound of extremism, some mimicking by low-quality candidates may occur. This, coupled with the possibility that media coverage may at times fail to be informative, implies that the electorate can elect a political challenger with low calibre who appears with an unpopular platform, obtains significant amount of media coverage that nevertheless yields no substantial information, and the electorate believes, mistakenly, that the challenger is of high quality.

The other important feature of the presence of a profit-seeking media lies in the voter's preferences between the two candidates in equilibrium. Provided the voter chooses either candidate with strictly positive probability in the event he is indifferent, at the time the media launches its coverage, the voter must be indifferent between the two alternatives. This means that the equilibrium platform extremism chosen by the high-quality challenger to attract media attention is just enough to offset any pre-coverage bias in the voter's mind towards one candidate or another. This is due to the fact that while excessive extremism is unable to sufficiently reduce low-quality participation, it reduces the voter's willingness to pay for news, thereby reducing media coverage that hurts the high-quality challengers. Hence demand for electoral news about candidate quality is maximum and the market for electoral news is most active in that state of voter indifference.

The remainder of the paper is as follows. We present the model in Section 1 and analyse the demand and supply for media coverage in Section 2. Section 3 shows how a challenger strategically chooses an extreme position in response to the ensuing equilibrium in the market for news. Additional discussion on our model and results and its relations to the existing literature is provided in Section 4. The paper concludes in Section 5.

1 THE MODEL

We present a simple model to demonstrate how the media's incentive to maximize profits, the electorate's incentive to learn about a challenger's quality and the challenger's incentive to signal quality generate platform extremism.[6] To make things stark and rule out the possibility of strategic market segmentation, we consider a single swing (or median) voter who elects one of two candidates, an incumbent and a challenger (or entrant). The qualities of the incumbent and the challenger are not perfectly known and each can be one of two types: high (H) or low (L). The quality of a candidate pertains to non-ideological issues – ability to provide good governance, keep the government corruption-free or maintain law and order – or some attribute, be it character or valence, on which voters agree i.e. a higher valence or better governance is preferred by all voters and hence electing a candidate of high quality yields an additional utility of $h > 0$ to the voter (while this utility is normalized to 0 if the candidate is of low quality).

The incumbent i in the model is not a strategic player. He is a populist and his policy platform is the voter's ideal policy 0. Moreover, his past performance makes the voter believe that he can be of type H with probability ρ_i and this belief cannot be changed by any additional information. The challenger (candidate e) on the other hand does not have such a 'firmly established reputation' and the prior probability that he is type H is γ.[7] In this environment, the entrant either contests the election by choosing a policy platform from $\mathbb{R}$ or stays out.

The voter has Euclidian preference over policies. In particular, if candidate e commits to a policy platform in $\mathbb{R}$ that is $z \geq 0$ distance away from the voter's ideal policy 0 and gets elected and the voter believes the challenger is of type H with probability ρ_e, then the voter's utility is $-z + \rho_e h$. We call z the *degree of extremism* in the entrant's policy choice. Electing candidate i yields a payoff of $\rho_i h$.

Before making his decision, and after candidate e enters the competition by announcing a policy with degree of extremism z, the voter has the option of using a paid media source to learn more about the true quality of the unknown challenger. In particular, a monopoly (or dominant) profit-seeking media invests in the size of media coverage $Q \in [0, 1]$ that

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[6] Duggan and Martinelli (2011) also study a model of elections with an unknown challenger. But lack of information there is about the challenger's fiscal policy, rather than quality. Although the media in their case enjoys monopoly power as in our case, it has an a priori bias for or against the challenger, but otherwise there is no profit motives. They show that a biased media can be more informative than an unbiased one.

[7]An alternative interpretation is that the incumbent's quality is known while the challenger can be of either higher or lower quality when compared to the incumbent. In that sense one can think of the incumbent's known quality to be q_i with $L < q_i = \rho_i H + (1 - \rho_i)L < H$.

is perfectly observable and that costs $c(Q)$ to the media. We assume $c(Q)$ is differentiable, strictly increasing and convex with $c'(0) = 0$ and $c'(1) = +\infty$. A coverage amount Q reveals the true quality of e with probability Q while with probability $1 - Q$ it reveals no additional information.

Upon observing Q the voter decides whether to pay an access fee $F \geq 0$ set by the media in order to follow the media coverage. The media sets F in order to extract all surplus from the voter and chooses Q accordingly to maximize its profit which equals the voter's surplus from information net of costs $c(Q)$.

Keeping in mind the anticipated behaviour of the media, the challenger chooses a strategy, which is an entry decision and a degree of extremism z conditional on entry, that is dependent on the entrant's type. Formally, we denote the strategy as $\sigma : \{L, H\} \to \Delta(\mathbb{R}_+ \cup \{out\})$ where Δ denotes the space of probability distributions over $\mathbb{R}_+ \cup \{out\}$.

Entry requires a cost of $\kappa > 0$. If the potential entrant enters and wins he earns $1 + \kappa$ (that is, office rent over-compensates the cost of entry by an amount 1) while if he loses he earns 0. Staying out yields a payoff of 0 as well.

This environment yields a 3-player signalling game with the following time structure:

- *Stage 1*: Challenger e chooses σ i.e. it announces its entry and platform choice;

- *Stage 2*: The media observes z if the outcome of σ yields so, chooses the degree of coverage $Q \in [0, 1]$ and announces the access fee F; if σ yields "out", the media does nothing and the game ends;

- *Stage 3*: The voter observes z, Q and F and either votes without media news or pays F and uses media news to update information about the quality of candidate e and votes for the candidate that maximizes his expected utility.

In the next two sections we analyze the outcome of this game i.e. we look at electoral and media activity as (perfect Bayesian) equilibrium outcomes of the game described in this section.

2 Market for electoral news

In this section we analyze the demand and supply for news when the political challenger has already committed to his policy platform. At this stage, the voter forms his beliefs about the challenger's quality, given the challenger's entry and platform decision, and considers whether to pay the fee F to access media coverage for additional information.

Anticipating the voter's willingness to pay, the media chooses an optimal amount of costly coverage to maximize its profits. Put together, the challenger's strategy creates a market for electoral news.

As demand (and therefore supply) for media information about the entrant is positive only if σ is not fully revealing, we will focus on continuation games that follow strategies of the entrant that are not fully revealing as well. Thus, we will focus attention on the following strategy of the entrant, denoted by σ_p, wherein a type H entrant enters the contest with some platform extremism z with probability 1 while his type L counterpart randomizes between entering at z with probability p and staying out with probability $1-p$. Note, all partially revealing equilibria must have one type randomize in this fashion.[8]

Let $\rho(\sigma_p)$ be the interim belief held by the voter before using the media that the entrant with platform promise z is of type H. Then,

$$\rho(\sigma_p) = \frac{\gamma}{\gamma + p(1 - \gamma)}. \tag{1}$$

Note that $\rho(\sigma_p) > \gamma$ if and only if $p < 1$. In this regard, only if $p = 1$ *is* σ_p is a babbling strategy for any $z \geq 0$ as both types enter with certainty so the entry decision conveys no information. Otherwise σ_p is informative. Also note that in all circumstances $z \leq h(1 - \rho_i)$ as otherwise the voter votes for the incumbent irrespective of his beliefs regarding the quality of the entrant. This is because if the degree of extremism is greater than $h(1 - \rho_i)$, the expected gain from the high type being in office is offset by ideological loss from having a policy too far from the voter's ideal point. In what follows we will therefore restrict z to be less than $h(1 - \rho_i)$.

2.1 DEMAND FOR COVERAGE

We first address demand for media coverage in the continuation game that follows the play of σ_p with the outcome where the challenger chooses entry and the voter observes that the entrant has announced a platform with degree of extremism z. We will assume that the voter uses a pure strategy in his decision about media access. With $p > 0$, the voter is not sure about the quality of the challenger, believing currently that he is of type H with probability $\rho(\sigma_p)$ as defined in (1). Thus, he has an incentive to acquire information and the value he places on getting extra information increases with extremism up to a point as the higher the ideological distance the bigger the loss in utility from ideological distance and hence the lower the expected utility from voting a low type challenger into

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[8]All equilibria will share this feature of being partially revealing, barring the one in Proposition 3.

power. However, beyond a point, the voter's interest in the entrant's quality (and so his incentive to acquire news) gets diminished if this distance z is simply too high which makes the entrant unattractive irrespective of his quality. In addition to the degree of extremism, the voter's willingness to pay also depends on the level of coverage Q as that determines quality of news. If quality of news is poor (i.e. its informative value is low), its value is lower and thus the voter is willing to pay less for it. We derive the voter's valuation (demand) for news as a function of platform extremism z and size of media coverage Q. The analysis is divided into the two situations of interim anti-incumbency (IAI) and interim pro-incumbency (IPI).

Interim anti-incumbency (IAI): Irrespective of prior beliefs for or against the incumbent, the challenger's strategy σ_p can sway the voter's preferences towards either of the two candidates. If the platform dissent is not too high and if the probability with which a low-quality challenger mimics entry is sufficiently low, we can be in a situation where without any additional information from the media the voter prefers the entrant to the incumbent. If the voter votes for the entrant with positive probability when indifferent, a situation of anti-incumbency occurs if and only if $z \leq h(\rho(\sigma_p) - \rho_i)$. Note that since $z \geq 0$, for this case to hold it must be that $\rho(\sigma_p) > \rho_i$ from which it follows that γ is sufficiently high and p sufficiently low, as expected under an anti-incumbency environment. In such a situation, if the voter decides not to use the media coverage, he votes for the entrant candidate e and obtains a payoff equal to

$$U^{\text{no access}}(\sigma_p | \text{IAI}) = -z + \rho(\sigma_p)h.$$

On the other hand, if the voter uses media that has announced a coverage level Q, then he foresees the following. With probability $Q\rho(\sigma_p)$ the entrant's type will be revealed to be H in which case he will vote for the entrant, yielding a payoff of $-z + h$. With probability $Q(1 - \rho(\sigma_p))$ the entrant's type will be revealed to be L in which case he will vote for the incumbent, yielding a payoff of $\rho_i h$. Lastly, with probability $1 - Q$ the media coverage will yield no additional information and so he will continue to vote for the entrant (unless he is indifferent in which case he mixes), yielding a payoff of $-z + \rho(\sigma_p)h$. Hence by using the media coverage, the voter's payoff is

$$U^{access}(\sigma_p | \text{IAI}) = Q\rho(\sigma_p)(-z + h) + Q(1 - \rho(\sigma_p))\rho_i h + (1 - Q)(-z + \rho(\sigma_p)h).$$

So let $V(\sigma_p | \text{IAI})$ denote the voter's valuation of media coverage at strategy σ_p when there is interim anti-incumbency. Then $V(\sigma_p | \text{IAI}) = U^{\text{access}}(\sigma_p | \text{IAI}) - U^{\text{no access}}(\sigma_p | \text{IAI})$

i.e. it is the difference in utility between using the media information, and voting only according to interim priors. By substitution, this yields

$$V(\sigma_p | \text{IAI}) = Q(1 - \rho(\sigma_p))(z + \rho_i h). \tag{2}$$

Interim pro-incumbency (IPI): This is a situation where without any additional information from the media the voter prefers the incumbent to the entrant. This happens if and only if $z > h(\rho(\sigma_p) - \rho_i)$. In this case, without media coverage, the voter votes for the incumbent i and obtains a payoff of

$$U^{\text{no access}}(\sigma_p | \text{IPI}) = \rho_i h.$$

On the other hand if he goes for the media coverage, then like before, the voter foresees the following. With probability $Q\rho(\sigma_p)$ the entrant's type will be revealed to be H and and so he will vote for the entrant, yielding a payoff of $-z + h$. With probability $Q(1 - \rho(\sigma_p))$ the entrant's type will be revealed to be L and so he will vote for the incumbent, yielding a payoff of $\rho_i h$. And with probability $1 - Q$ the media coverage will yield no information and so he will continue to vote for the incumbent to obtain a payoff of $\rho_i h$. Hence by using the media coverage, the voter's payoff becomes

$$U^{\text{access}}(\sigma_p | \text{IPI}) = Q\rho(\sigma_p)(-z + h) + Q(1 - \rho(\sigma_p))\rho_i h + (1 - Q)\rho_i h.$$

As before, let $V(\sigma_p | \text{IPI})$ denote the voter's valuation of media coverage at strategy σ_p under interim pro-incumbency. Then $V(\sigma_p | \text{IPI}) = U^{\text{access}}(\sigma_p | \text{IPI}) - U^{\text{no access}}(\sigma_p | \text{IPI})$, that is

$$V(\sigma_p | \text{IPI}) = Q\rho(\sigma_p)(h(1 - \rho_i) - z). \tag{3}$$

With the expressions for the voter's value of media coverage, we are in a position to characterize his demand for electoral news defined by the surplus it generates for the voter. Lemma 1 deals with this. The proof is straightforward as the expression $V(\sigma_p | \text{IAI})$ (respectively, $V(\sigma_p | \text{IPI})$) increases (respectively, decreases) in z, and it can be further checked that $z = h(\rho(\sigma_p) - \rho_i)$ is their unique intersection point.

LEMMA **1** *The voter's demand (or willingness to pay) for media coverage is given by the following expression:*

$$V(\sigma_p) = \begin{cases} Q(1 - \rho(\sigma_p))(z + \rho_i h) & \text{if } z \leq h(\rho(\sigma_p) - \rho_i) \\ \\ Q\rho(\sigma_p)(h(1 - \rho_i) - z) & \text{if } z > h(\rho(\sigma_p) - \rho_i). \end{cases} \tag{4}$$

Moreover,

1. *Starting from a state of interim anti-incumbency (i.e., $z \leq h(\rho(\sigma_p) - \rho_i)$) demand increases in z (and p) up to the point where $z = h(\rho(\sigma_p) - \rho_i)$,*

2. *Starting from a state of interim pro-incumbency (i.e., $z > h(\rho(\sigma_p) - \rho_i)$) demand falls in z (and p), and*

3. *Demand increases unambiguously in degree of coverage Q.*

A relatively small ideological distance (for a fixed likelihood p of low-quality partici-pation in the market for political alternative) induces anti-incumbency during the interim phase of an election. In this situation a rise in extremism increases demand for news as the voter wants the entrant to win but more extremism increases the risk of electing a candidate who is after all unknown. This continues up to a point when anti-incumbency is wiped out as now the extremism is such that the voter is just indifferent between the two political alternatives. It is at this stage that the voter's willingness to pay for news coverage is maximum, after which further extremism brings us in a pro-incumbency sit-uation and the voter's interest shifts away from the entrant. Thereafter demand for news about the entrant's quality falls monotonically in extremism. Now let us fix extremism and look at the impact of p. With a p close to 0, we are again in strong anti-incumbency, but this time it is driven by the high likelihood of having a H type challenger. Thus, demand for news is small as the chances of voting in a low-quality challenger is small and therefore, willingness to pay for knowing the type is low. As p increases, i.e. probability of low-quality entrants increase, the force of anti-incumbency falls. This then increases demand for news once more as the voter finds it more and more risky to elect the entrant. This rise in demand reaches a maximum again at the value of p where the voter becomes indifferent between electing the incumbent or the entrant. Beyond this point a further rise in p reduces demand for information. Thus, as expected, platform extremism and the likelihood of low-quality participation act hand in hand in their impact on demand. The important message from this analysis is that demand for electoral news is maximum when there is no pro or anti incumbency in this interim phase of the elections.

2.2 SUPPLY OF COVERAGE

Given the explicit demand function for coverage as in (4), we now find the profit maxi-mizing choice of Q for a fixed strategy σ_p. As the media sets the access fee F to extract the entire surplus from the voter, in equilibrium we have $F = V(\sigma_p)$. Thus the profit function

of the media is given by the voter's willingness to pay less cost of coverage:

$$\pi(\sigma_p) = V(\sigma_p) - c(\chi).$$

Notice that $V(\cdot)$ is differentiable in Q. Further, our assumptions on $c(\cdot)$ imply that there exists a unique maximizer of $\pi(\sigma_p)$, denoted by Q^*, that is strictly positive whenever $V(\sigma_p) > 0$. Lemma 2 completely characterizes equilibrium coverage. As $c(\cdot)$ is strictly convex, c' is strictly increasing in Q over the entire domain. Given this and the facts that $c'(0) = 0$ and $c'(1) = +\infty$, Lemma 2 is immediate.

LEMMA 2 *Let Q^* be the profit maximizing media coverage given the entrant's strategy σ_p. Then Q^* is unique and is given implicitly by*

$$c'(Q^*) = \begin{cases} (1 - \rho(\sigma_p))(z + \rho_i h) & \text{if } z \leq h(\rho(\sigma_p) - \rho_i) \\ \\ \rho(\sigma_p)(h(1 - \rho_i) - z) & \text{if } z > h(\rho(\sigma_p) - \rho_i). \end{cases} \tag{5}$$

Moreover,

1. *Starting from a state of interim anti-incumbency (i.e., $z < h(\rho(\sigma_p) - \rho_i)$), a rise in z, ρ_i or h increases Q^* while a rise in $\rho(\sigma_p)$ (through either a rise in γ or fall in p) decreases Q^*;*

2. *Starting from a state of interim pro-incumbency (i.e., $z > h(\rho(\sigma_p) - \rho_i)$), a rise in h or a rise in $\rho(\sigma_p)$ (through either a rise in γ or fall in p) increase Q^* while a rise in ρ_i and a rise in z decreases Q^*.*

The important message from the nature of the media's optimal response to the entrant's partially revealing strategy is that while in an interim anti-incumbency phase, a rise in extremism increases media coverage, in an interim pro-incumbency phase this happens when extremism decreases. This coupled with the fact that demand for news is maximum when extremism makes the voter indifferent between the two contesting political alternatives implies the following Corollary.

COROLLARY 1 *The market for media coverage of a political challenger is most active when in the interim phase, there are neither pro nor anti incumbency trends.*

In the next section we follow up on Corollary 1 to see how it affects the political equilibrium.

3 Equilibrium political challenge

A high-quality challenger in our model has incentives to enhance media coverage while this incentive is completely missing for his low-quality counterpart. This can generate a belief in the mind of the voter that extremism typically comes from high-quality challengers as it is extremism that generates demand for news and hence media attention. We model such beliefs in its simplest form through a step function that is weakly monotone in platform extremism. It is then natural for one to examine the strategy σ_p described in Section 1, along with consistent and monotone beliefs, and look for conditions under which they constitute a perfect Bayesian equilibrium of the whole game.

Given the ensuing market equilibrium for media coverage (given by (2)) that follows from the strategy σ_p, we now find conditions on extremism and the low type's randomization such that σ_p constitutes an equilibrium. In order to do so, we first specify beliefs of the voter 'off-the-equilibrium path' of play. The weakly monotone step-function property is used in the construction of these beliefs, parameterized by some extremism $z > 0$ and denoted by μ_z: (i) if any extremism $z' \geq z$ is observed and the voter receives no further information from the media, then he believes that candidate e is of type H with probability $\rho(\sigma_p)$; otherwise media information reveals type and the voter follows the revelation; (ii) If any extremism $z' < z$ is observed then with no further information from the media, the voter believes that e is type H with probability $0 < \epsilon < \rho_i$ and otherwise follows media revelation.

As we shall see, existence and nature of equilibrium will depend crucially upon how the voter votes between the two political alternatives when he stands indifferent between the two. So let $0 \leq x \leq 1$ denote the probability with which the voter votes for the challenger in this case. However we will throughout assume that when the voter is indifferent between using or not using media coverage, he uses it with probability 1.

3.1 Low entry cost, $\gamma < 1/2$ and $\rho_i < 1/2$

First consider the case when the entry cost for the challenger is small, in particular $\kappa < \frac{1}{c'^{-1}(h/4)} - 1$, and there is a low probability of either the incumbent or the challenger being high-quality candidates i.e. both. $\gamma < 1/2$ and $\rho_i < 1/2$. How would a low-quality challenger behave in such a scenario? Since he is randomizing between entry at z and staying out, his equilibrium payoff must equal 0 and any deviation must not yield a higher payoff. Given the beliefs of the voter that we just described, if he shows any extremism $z' < z$ then he loses with probability 1 since $\epsilon < \rho_i$ and pays the cost κ.

By standing at z, he gets revealed (and therefore loses) with probability Q^* and pays the cost κ, while with probability $1 - Q^*$ he stands a chance to win, provided this entry yields interim anti-incumbency with $-z + \rho(\sigma_p)h \geq \rho_i h$ (a condition required for the voter to vote for him). Hence his expected payoff from standing at z is:

$$u(\sigma_p|L) = \begin{cases} 1 - Q^* - \kappa Q^* & \text{if } z < h(\rho(\sigma_p) - \rho_i) \\ (1 - Q^*)(x - \kappa(1 - x)) - \kappa Q^* & \text{if } z = h(\rho(\sigma_p) - \rho_i) \\ -\kappa & \text{otherwise .} \end{cases} \tag{6}$$

Taking any position $z' > z$ can only diminish this payoff. To see this observe that if $z < h(\rho(\sigma_p) - \rho_i)$ then a deviation such that $z' \leq h(\rho(\sigma_p) - \rho_i)$ increases Q^* (see (2)) that strictly harms the L type entrant. If $z' > h(\rho(\sigma_p) - \rho_i)$ then irrespective of the outcome from media coverage the voter strictly prefers i as the entrant is of type L. The argument is similar for $z = h(\rho(\sigma_p) - \rho_i)$. Since this expected payoff must be 0 in equilibrium due to the randomization, for σ_p to constitute an equilibrium, it must be that $z \leq h(\rho(\sigma_p) - \rho_i)$. In any event, since in equilibrium the L-type's payoff cannot be negative, we have the following lemma.

LEMMA 3 *If $\rho(\sigma_p)$ constitutes an equilibrium it must be that $z \leq h(\rho(\sigma_p) - \rho_i)$.*

We now turn to the type-H entrant. Recall that in any equilibrium we have $z \leq h(1 - \rho_i)$ as otherwise the voter always votes for the incumbent. Hence we can restrict deviations z' in the interval $[0, h(1 - \rho_i)]$. Suppose $z = h(\rho(\sigma_p) - \rho_i)$ so that we are in a situation where in the interim phase of the elections, the voter is neither anti nor pro incumbent and votes for the challenger with probability x. A deviation $z' > z$ that increases extremism reduces media coverage Q^* (see (2)) and at the same time leads to pro-incumbency. Thus a deviation through increased extremism cannot be profitable. So consider a moderation $z' < z$. Given the beliefs μ_z of the voters, this deviation will strictly harm the entrant. It is also clear that the requirement $z = h(\rho(\sigma_p) - \rho_i)$ is necessary for this equilibrium if and only if $0 < x < 1$. This is because when $z < h(\rho(\sigma_p) - \rho_i)$, the voter cannot be indifferent between the entrant and the incumbent and it must be that $x = 1$, a contradiction with the voter's mixed strategy.

Given this, we next consider the incentive of the type H entrant to attract media attention that yields a choice of z that maximizes the voter's surplus from information so that it yields the highest attainable media coverage Q. Observe that from Lemma 2 and the fact that in equilibrium we have $-z + \rho h = \rho_i h$, it follows that media's profit maximization condition can be written as

$$c'(Q^*) = (h - (z + h\rho_i)) \left(\frac{z + h\rho_i}{h} \right).$$

As $c'(\cdot) > 0$, if z is chosen to maximize the RHS of the above condition, it also increases Q^*. Hence, the type H candidate initiates z that maximizes

$$\$(z) := (h - (z + h\rho_i))\left(\frac{z + h\rho_i}{h}\right).$$

This yields

$$z^* = h\left(\frac{1}{2} - \rho_i\right),$$

which is strictly positive since $\rho_i < 1/2$. But this means $\rho(\sigma_p) = 1/2$ from which it follows that

$$p^* = \frac{\gamma}{1 - \gamma}.$$

Since $0 < \gamma < 1/2$ we have $0 < p < 1$. Using these observations we have

$$(h - (z + h\rho_i))\left(\frac{z + h\rho_i}{h}\right) = \frac{h}{4},$$

so that the media's profit maximizing condition in the 'general' equilibrium becomes $c'(Q^*) = \frac{h}{4}$. Finally we obtain the equilibrium value of the voter's mixed strategy x from the type L entrant's indifference equation given by

$$(1 - Q^*)(x - \kappa(1 - x)) - \kappa Q^* = 0,$$

that yields

$$x^* = \frac{\kappa}{(1 - Q^*)(1 + \kappa)}.$$

It is always true that $x > 0$. For $x \leq 1$, we require $Q^* \leq \frac{1}{1+\kappa}$, which from the profit maximizing condition of the media yields $c'^{-}(h/4) \leq \frac{1}{1+\kappa}$.

Thus we have proved our first main result.

PROPOSITION 1 *Suppose* $\kappa < \frac{1}{c'^{-1}(h/4)} - 1$, $\gamma < 1/2$ *and* $\rho_i < 1/2$. *Then the unique perfect Bayesian equilibrium* $(\sigma_{p^*}, \mu_{z^*}, Q^*, x^*)$ *yields* $z^* = h\left(\frac{1}{2} - \rho_i\right)$, $p^* = \frac{\gamma}{1-\gamma}$, $c'(Q^*) = h/4$ *and* $x^* = \frac{\kappa}{(1-Q^*)(1+\kappa)}$, *with* $0 < p^*, 0 < x^* < 1$ *and* $z^* > 0$. *In this equilibrium, (i) the size of extremism* z^* *rises as the probability of the incumbent being high quality falls, reaching* $h/2$ *as this probability goes to* 0 *and (ii) there is neither pro nor anti-incumbency where the voter votes for the extremist challenger and the populist incumbent with strictly positive probabilities when media coverage is uninformative.*

Proposition 1 shows that when voters care about the quality of a relatively unknown political challenger, existence of a profit-seeking media 'manufactures' platform extremism through which a high-quality candidate attracts higher media coverage in order to

communicate with the voter through the media. Fear of media revelations keep checks on low-quality participation though a low-quality entrant mimics high-quality strategies with some probability. The probability with which a low-quality entrant enters equals the prior odds in favor of the entrant being type H. This is obtained as the unique perfect Bayesian equilibrium under a robust set of sufficient conditions that relate cost of competing in elections and importance of quality in the voter's utility. Further, the voter is indifferent between the incumbent and the challenger and votes for each with strictly positive probabilities.

3.1.1   Implications of Proposition 1

As mentioned before, the possibility of extremism to act as an instrument to signal quality induces the voter to encourage extremism as reflected in the weak monotone beliefs. However this encouragement attracts low-quality entrants to (mis)-signal quality through mimicry of their high-quality counterparts. This 'partially informative' environment for the voter requires a media that promises to act as a means of communication between the entrant and the voter, a 'watchdog' to prevent low-quality participation and at the same time a facilitator for competent entry. But this occurs where the media has no interest in politics or the welfare of the voter and its investigative incentive comes entirely from wishing to make profits through viewership.

Clearly, this works in favour of a high-quality entrant as well. When extremism can only partially reveal his type, higher extremism increases the voter's willingness to pay for media news, making room for the media to reap profits through covering the entrant during the late phase of the election. The high-quality entrant foresees this and chooses an optimal amount of extremism that maximizes the value of electoral news and in turn maximizes this coverage. In other words, political positioning creates a market for electoral news while news creates an opportunity for voters to elect better quality leaders via transmission of additional information through electoral strategies and thwarting of low-quality participation to a large extent. Indeed in the event the voter obtains no further information from following the media coverage, he remains indifferent and votes for each political alternative with strictly positive probability. Proposition 1 characterizes the 'fixed-point' attained when both the news market and the political market are in equilibrium simultaneously.

Our analysis in the following subsections will contrast with Proposition 1 in three different directions. First we will characterize conditions under which political entry will signal quality but without platform extremism (Proposition 2). The second direction

(Proposition 3) will be in informativeness of entry where we will find conditions such that while extremism will prevail, the voter will know little about the challenger from this entry decision and will have to bank entirely upon the media to obtain information, if any. Lastly we will look at equilibria where there will be strong interim anti-incumbency (Proposition 4). Interestingly, these four types of equilibria are unique under the conditions they exist and moreover are mutually exclusive and exhaustive of the parametric space of our framework. Put together these conditions are both necessary and sufficient for each type of equilibrium.[9]

3.2   Low entry cost, $\rho_i \geq 1/2$ and $\gamma < \rho_i$

We continue with the case that cost of entry is low ($\kappa < \frac{1}{c'^{-1}(h/4)} - 1$) but now assume that the incumbent's past performance makes the voter believe that he is more likely to be a high-quality politician (viz.$\rho_i \geq 1/2$). We now look at the case when $\gamma < \rho_i$ i.e. the ex ante (pre-entry) probability of their being a potential high-quality challenger is less than the prior about the incumbent being of high quality.

Note first that the objective function of the type H challenger remains the same, i.e. he chooses z to maximize $\$(z)$. Since $\$(z)$ is strictly concave for all values of h and ρ_i, the basic features of the analysis in Section 3.1 continues, except that when $\rho_i \geq 1/2$, (denoting equilibrium values now with the superscript **), this optimization yields a corner solution $z^{**} = 0$. This follows from the observation that $\frac{d\$(z)}{dz}\big|_{z=0} = 1 - 2\rho_i \leq 0$ if and only if $\rho_i \geq 1/2$. Thus, we obtain $z^{**} = 0$ when $\rho_i \geq 1/2$. This coupled with the voter's indifference condition $z^{**} = h(\rho(\sigma_{z^{**}}) - \rho_i)$ yields $\rho(\sigma_{z^{**}}) = \rho_i$ from where one obtains

$$p^{**} = \left(\frac{\gamma}{1-\gamma}\right)\left(\frac{1-\rho_i}{\rho_i}\right) < 1$$

since we are in the case where $\gamma < \rho_i$. Using the media's profit maximizing condition as before we obtain

$$c'(Q^{**}) = h(1 - \rho_i)\rho_i.$$

It is straightforward to see that since $\rho_i \geq 1/2$, $c'(Q^{**}) < c'(Q^*)$, implying $Q^{**} < Q^*$ as expected. Also, from the indifference condition of the type L entrant, it now follows that

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[9] While we have allowed the entrant to use mixed strategies and the voter to use mixed strategies while choosing between the entrant and the incumbent, we have only considered pure strategies for the media while choosing the fee and the coverage and for the voter while deciding between using media coverage or voting by his own beliefs. Allowing mixed strategies everywhere can generate other equilibria as in Section 3.4.

$x^{**} < x^*$. Finally note that since we are in the case $\kappa < \frac{1}{c'^{-1}(h/4)} - 1$ and since $h(1 - \rho_i)\rho_i < \frac{h}{4}$, we satisfy this parametric restriction. This analysis is collected in the following proposition.

PROPOSITION 2 *Suppose* $\kappa < \frac{1}{c'^{-1}(h/4)} - 1$, $\rho_i \geq 1/2$ *and* $\gamma < \rho_i$. *Then the unique perfect Bayesian equilibrium* $(\sigma_{p^{**}}, \mu_{z^{**}}, Q^{**}, x^{**})$ *yields* $z^{**} = 0$, $p^{**} = \left(\frac{\gamma}{1-\gamma}\right)\left(\frac{1-\rho_i}{\rho_i}\right)$, $c'(Q^{**}) = h(1 - \rho_i)\rho_i$ *and* $x^{**} = \frac{\kappa}{(1-Q^{**})(1+\kappa)}$, *with* $0 < p^{**} < 1, 0 < x^{**} < 1$. *In this equilibrium, (i) while there is no extremism, political entry itself will signal strength and (ii) there is neither pro nor anti-incumbency where the voter votes for the populist challenger and the populist incumbent with strictly positive probabilities when media coverage is uninformative.*

Proposition 2 shows that if the cost of entry is relatively small, if the voter believes that the incumbent is likely to be of high quality (viz. $\rho_i > 1/2$) and if the ex ante probability of the challenger being of high quality is lower than the incumbent, there is still an equilibrium such that there is neither pro nor anti incumbency post entry. However in this case the challenger enters with a populist platform. Existence of a strong incumbent party, who is also perceived to be stronger than his political challenger ex-ante, leaves little room for the challenger to use extremism as a signaling instrument and thus one obtains policy convergence. In spite of candidates converging in policy platforms, the threat of media revelation still keeps a low-quality candidate out of the contest with some probability.

Although the voter cannot distinguish between the two candidates in terms of platforms, there is still some chance that the entrant will be of high quality (and therefore better than the reasonably well preforming incumbent). Hence even when both the incumbent and the challenger are populists, there is some demand for media coverage that a profit seeking media provides. As the main motivation of the paper was to find conditions under which media exacerbates extremism, Proposition 2 is important as it characterizes the only environment in our framework when the challenger takes the incumbent's populist stand.

3.3 LOW ENTRY COST AND $1/2 < \rho_i < \gamma$

We now move to an environment where cost of entry is still low (viz. $\kappa < \frac{1}{c'^{-1}(h/4)} - 1$) and the incumbent has performed well in the past ($\rho_i > 1/2$), but he faces a strong challenger who is believed to be more likely to be of high quality than the incumbent (viz. $1/2 < \rho_i < \gamma$). In this case, one would expect extremism to reappear and our analysis proves this to be true. However, and somewhat surprisingly, such strong ex-ante prospects of the challenger

makes democracy run out of steam to thwart low-quality participation even under a 'watchdog' media.

To see this observe that in the case under study, p^{**} as defined in Proposition 2 will exceed 1. In fact, such a high γ allows the low-quality entrant to free ride on the fact that demand for media coverage will in any case be low (even if he entered with probability 1) so that a profit seeking media will not invest enough in coverage. This dampens the risk faced by a low-quality entrant from being revealed. Denoting equilibrium values by $\hat{}$, we now characterize this equilibrium.

Suppose entry takes place at some $\hat{z} \geq 0$ but both types enter with probability 1. As the voter is indifferent between the challenger and the incumbent, it must be that $\hat{z} = h(\gamma - \rho_i)$. Using this, the profit maximizing condition of the media yields

$$c'(\hat{Q}) = h(1 - \gamma)\gamma.$$

It can be shown that $\hat{z}$ can be higher or lower that z^* in Proposition 1 depending upon how large is γ.

Denoting by ρ_i^* as an appropriately fixed value of ρ_i for Proposition 1 with $\rho_i^* < 1/2$, we have $\hat{z} > z^*$ if $\gamma - 1/2 > \rho_i - \rho_i^*$ and $\hat{z} < z^*$ otherwise. Using the equilibrium value $\hat{z}$ in the media's optimization condition yields that $\hat{Q} < Q^*$ since $\gamma > 1/2$. We summarize these observations in the following proposition.

PROPOSITION 3 *Suppose* $\kappa < \frac{1}{c'^{-1}(h/4)} - 1$ *and* $1/2 < \rho_i < \gamma$. *Then the unique perfect Bayesian equilibrium* $(\sigma_{\hat{p}}, \mu_{\hat{z}}, \hat{Q}, \hat{x})$ *yields* $\hat{z} = h(\gamma - \rho_i)$, $\hat{p} = 1$, $c'(\hat{Q}) = h(1 - \gamma)\gamma$ *and* $\hat{x} = \frac{\kappa}{(1 - \hat{Q})(1 + \kappa)}$, *with* $0 < \hat{x} < 1$. *In this equilibrium, (i) while there is extremism, political entry itself signals no strength and (ii) there is neither pro nor anti-incumbency where the voter votes for the extremist challenger and the populist incumbent with strictly positive probabilities when media coverage is uninformative.*

In our exercise, Proposition 3 is the only case where both types of challengers contest with probability 1. This is a situation where voters believe both incumbent and challenger are more likely to be of high quality but there is ex-ante anti-incumbency. In this situation, even if there is platform extremism, the interim beliefs are still strongly in favor of the challenger and so the low-quality challenger always enters the contest and mimics his high-quality counterpart. Thus, entry carries no further information over the prior beliefs of the voter and platform extremism is purely driven by the high-quality challenger's incentives to attract more media coverage that the low-quality counterpart can afford without facing too much risk. In addition, strong priors for a high-quality entrant keeps

the demand for news down, thereby reducing coverage below Q^*, the amount when the low-quality entrant stayed out of the contest with strictly positive probability. In summary, an highly extremist challenger who is regarded a priori to be of a relatively high quality is observed and the media coverage is low.

3.4   HIGH COST OF ENTRY

In the above analysis, the voter's equilibrium mandate is 'unpredictable' as he is randomizing between the entrant and the incumbent whenever the media coverage is revealing no additional information. For existence of that class of equilibria it was necessary that κ was not too high (viz. not higher than $\frac{1}{c'^{-1}(h/4)} - 1$). But what if entry costs are higher?

We begin by noting that when κ exceeds the threshold value of $\frac{1}{c'^{-1}(h/4)} - 1$, the low-quality entrant will not enter provided the voter votes for the challenger with probability 1 when indifferent. In this case, given Lemma 3, the type H challenger wins with probability 1 since in the event the media reveals no additional information (probability $1-Q$), there is 'behavioral' anti-incumbency and the voter votes for the challenger, while in the event the media reveals information (with probability Q), the voter knows his type. Hence a high-quality challenger is indifferent across all degrees of extremism $z \leq h(\rho(\sigma_p) - \rho_i)$. On the other hand, since a low-quality candidate is randomizing between entry at z and staying out, his indifferent condition, with $x = 1$, becomes $(1 - Q) - \kappa Q = 0$. Denoting equilibrium values now with $\tilde{}$, this yields the equilibrium coverage $\tilde{Q} = \frac{1}{1+\kappa}$. It is straightforward to verify that $\tilde{Q} < Q^*$ and this is expected as with a behavioral inclination towards the challenger, the value for news is lower.

How does this affect participation from a low-quality challenger and the degree of extremism that his high-quality counterpart may choose to initiate? Using the media's optimization condition, we know $c'(\tilde{Q}) = (1 - \rho(\sigma_p))(z + \rho_i h)$. This yields an equilibrium relation between $\tilde{p}$ and $\tilde{z}$ given by

$$c'^{-1}\left(\frac{1}{1+\kappa}\right) = \left(1 - \frac{\gamma}{\gamma + p(1-\gamma)}\right)(z + \rho_i h). \tag{7}$$

We summarize this analysis in the following proposition.

PROPOSITION 4 *Suppose $\kappa > \frac{1}{c'^{-1}(h/4)} - 1$. Then the set of perfect Bayesian equilibria consists of a continuum of strategy profiles and beliefs $(\sigma_{\tilde{p}}, \mu_{\tilde{z}}, \tilde{Q}, \tilde{x})$ such that $\tilde{Q} = \frac{1}{1+\kappa}$, $\tilde{x} = 1$ and $(\tilde{p}, \tilde{z})$ such that Condition (7) is satisfied with $\tilde{z} \leq h(\sigma_{\tilde{p}} - \rho_i)$. In this equilibrium, extremism leads to interim anti-incumbency.*

The equilibrium in Proposition 4 distinguishes itself from the other equilibria reported above in three ways: (i) the voter chooses the challenger with probability 1 when indifferent, (ii) cost of political entry κ fully determines the amount of media coverage and (iii) there is interim anti-incumbency. Thus in the event the media coverage is unable to provide any further information, the voter prefers to vote for the challenger. This implies that along the set of equilibria, the high-quality entrant remains indifferent as irrespective of what media coverage can deliver, he wins with probability 1. When platform extremism decreases this gets supported by higher entry probability from low-quality challengers. To keep such challengers indifferent between entry and staying out, the amount of media coverage needs to remain fixed at $\frac{1}{1+\kappa}$. Thus in equilibrium higher cost of political entry can reduce media coverage and make political challengers less extreme.

4   Discussion

Our model of the investigative nature of the media is consistent with the *Detached Watchdog* journalism milieu that is considered to be one of the most dominant journalistic cultures in the Western world. Hanitzsch (2011) conducts a survey on 1800 journalists across 18 countries from both the developed and the developing world to find that the detached watchdog milieu clearly dominates the journalistic field in most western countries, and in particular in Austria, Australia, Germany, Switzerland and the United States. Its main interest lies in providing its viewers with political information and considers itself as a watchdog of elite political participants. The survey also finds that media falling under this category are not driven by a desire to influence public opinion, set political agendas or bring about social change.[10] This is compatible with profit maximization in an electorate that demands news regarding the calibre of political candidates. This makes media invest in political information to inform the citizenry.[11]

Gul and Pesendorfer (2012) analyze a model of media and politics that shares some features with our framework, though there are important differences. Unlike us, they

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[10] The milieu of Watchdog Journalism exists even when it is not 'that detached'. For example, Puglisi and Snyder (2008) analyze the coverage of U.S. political scandals by U.S. newspapers during the past decade to find that Democratic-leaning newspapers give relatively more coverage to scandals involving Republican politicians than scandals involving Democratic politicians, while Republican-leaning newspapers tend to do the opposite.

[11] As argued in Prat and Stromberg (2005), even if commercial media caters news to the likes of voter groups who finance them, commercial news can still generate more political information than state run outlets.

consider parties to be ideological and with no private information. Voters observe their policy platforms but do not understand the exact payoff consequences and look at media news for more information. Like in this paper, the media cares about size of viewership but unlike us, it is also ideological and while it serves the electorate with electoral news, its delivery can be biased. Voters prefer like-minded media in order to avoid distortions due to this bias. As the media cares about size of viewership, a monopolist media typically serves the median voter, generating neutral information, so that political parties choose minimally divergent platforms as the standard Downsian centripetal forces come into play. Thus incentives of the media to maximize viewership in their framework generates populism. Of course, in their framework, parties have nothing to signal through policy choice which plays a crucial role in our case.

In line with the equilibrium features of our results, there is evidence that voters indeed believe that taking unpopular platforms is a signal of strength. A large body of literature has developed that looks at what is called the marginality hypothesis which suggests that weaker candidates are more likely to contest with electorally popular platforms.[12] There have been a number of papers that try to explain this using strategic motives for politicians to use extreme positions to signal strength. Kartik and McAfee (2007) generate extremism in policies as rational politicians stand away from the median position to mimic sincere candidates. Their result stems from the presence of candidates with character who do not act strategically but instead according to their beliefs about what would be the 'right' policy (modeled as a random process that assigns probabilities to different policy platforms) and thus do not cater to popular demand. Hence, taking unpopular positions signal 'character', which is valued by the voters, thereby causing some strategic players to also try and mimic this via picking non-median platforms (although it is shown that they always assign a strictly positive probability to contesting with the median policy).[13] Carrillo and Castanheira (2008) also obtain strategic extremism, but unlike us quality is not a given characteristic but can be improved through unobservable investment. Honryo (2013) obtains extremism as a result of candidates trying to signal their competence about their ability to read the true state of the world. These papers do not however consider

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[12] Although Fiorina (1973) offers some evidence to the contrary, there is certainly strong evidence of the marginality hypothesis (see Ansolabehere et. al. (2001) and Griffin (2006) for recent empirical support for the hypothesis). In this respect, Bernhardt et al. (2011) provide a theoretical explanation for the mixed empirical results on valence and extremism in a model of repeated elections with ideologically driven politicians.

[13] Note, Kartik and McAfee show such non-strategic types with 'firm character' is not strictly necessary for their result to hold.

explicitly the role of an informative media strategically which induces extremism. Bandyopadhyay et al. (2014) on the other hand consider a partially informative media that induces extremism in a framework where politicians have unknown valence but in their model the media is non-strategic.

5 Conclusion

We have presented a model of a profit-maximizing monopolistic media that will investigate a political challenger with unknown quality. Voters pay to receive media coverage if they find that the expected marginal value of media news is higher than the cost of accessing it. Given the informativeness of media coverage, we characterize conditions under which high-quality candidates deliberately take extreme positions while low-quality candidates do so only some of the time. Media investment in trying to discover quality of candidates with more extreme positions is higher as they rationally anticipate that voters will want to pay more to purchase news about such candidates. This is because when candidates take extreme positions, the voter's marginal gain from learning about the candidate quality is higher, which increases his willingness to pay. High-quality candidates gain as increased media attention makes it more likely that their types will be revealed leading to their being elected. Strikingly, this ideological extremism arises (and serves as a credible signal) in an environment where neither the media nor the candidate cares about ideology, there is no media competition for news and the electorate not ideologically divided. However, the presence of a media outlet is crucial as without its role as a source of information, such polarization would not occur and the voter will not learn about the quality of political challengers.[14]

For simplicity, we have assumed that the incumbent is located at the ideological position of the decisive voter. This need not be the case, so long as there is sufficient uncertainty about the challenger relative to the incumbent. If the challenger's attributes

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[14]AS we have shown, this does not mean that the media can't sometimes get it wrong. For example, some commentators suggest Modi is not the efficient leader he was portrayed as (See for example the May 25, 2015 New York Times article by Ellen Barry at http://www.nytimes.com/2015/05/26/world/asia/after-a-year-of-outsize-expectations-modi-adjusts-his-political-course-for-india.html?_r=0, the BBC NEWS Asia article by Soutik Biswas on the same date at http://www.bbc.com/news/world-asia-india-32790929 or the May 26, 2015 article by Seetha Parthasarathi on Firstpost at http://www.firstpost.com/business/a-promise-broken-pm-modis-maximum-failure-on-minimum-government-2262524.html). Whether such commentators are right is not the issue, but the possibility of a leader elected via media coverage occasionally turning out to be of low quality is perfectly consistent with our model.

are such that he will be preferred to the incumbent even if they are located at the same point and no signaling takes place, the problem becomes trivial. Likewise if the incumbent is always preferred. In other circumstances, the relative extremism of the challenger is all that is needed for our conclusions to go through.

What would happen if there was no media? Clearly the mechanism of signaling through extremism will break down as now there will be no credible source for verifying quality and a low-quality challenger can mimic the actions of his high-quality counterpart in the policy space with probability 1. This would then bring interim beliefs back to the prior γ, which will then make all types of challengers to take the incumbent's popular stand by the usual Downsian arguments about convergence to the median. If $\gamma \geq \rho_i$, one would observe a populist challenger who would win the election, while if $\gamma < \rho_i$, then the incumbent will go unchallenged. In any event, elections will not help the voter learn about the quality of the challenger at the time of voting.

Multiple profit-seeking media outlets should in general improve informativeness in our framework as various outlets will compete for viewership by making their news more informative.[15] This may, in part reduce the necessity of ideological extremism to attract media attention. Hence, one would expect the equilibrium level of polarization to fall with media competition compared to the dominant media case.[16] However, while the magnitude will vary, our essential insight of media induced polarization to strategically get the voter to buy news should remain. This stands in sharp contrast with the results obtained in Gul and Pesendorfer (2012) where multiple media identified by different competing ideological bias enhances polarization by serving an ideologically divided constituency. This occurs because ideology driven parties know they will be endorsed by like-minded media outlets. In contrast, Perego and Yuksel (2015) show that, while with increased competition and profit seeking media, voters individually get better informed, the number of votes for the socially efficient candidate can fall. Their focus is also on an ideologically divided electorate which tries to learn about both quality and ideology of candidates and they do not study political entry and positioning. We instead concentrate on an undivided constituency. It will of course also be interesting to study electoral outcomes when the media market is competitive and outlets have both profit motives as well as different ideological biases and the electorate is ideologically heterogeneous. Can

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[15]Mullainathan and Shleifer (2005) point out that voter heterogeneity plays a more crucial role in this rather than media competition. However, this occurs in the presence of media bias in their model and so the results may not hold in our framework.

[16]Competition or the presence of multiple outlets also reduces the chances of media capture as demonstrated in Besley and Pratt (2006). We have assumed away the possibility of media capture in this framework.

this lead to sorting of the electorate and therefore enhance polarization? This remains a promising area for future research.

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