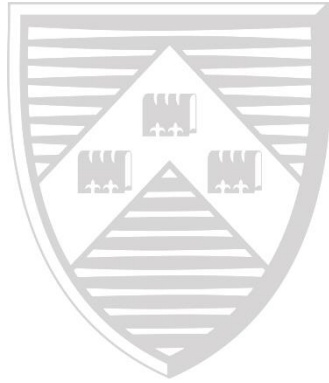# UNIVERSITY *of York*

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Ideological Polarization and the Media

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Abstract

Greater media presence may facilitate information transmission and consensus, or amplify existing political differences. In the OECD greater media penetration is strongly correlated with reduced ideological polarization in the electorate. Observed increases in media penetration lead observed reductions in measured polarization, suggesting that this relationship is causal.

1 Introduction

Persson and Svensson (1989) and Alesina and Tabellini (1990) theorize that ideological polarization drives government debt. Azzimonti (2010) theorizes that it implies greater tax distortions and lower investment. Empirical work has found it to cause larger political budget cycles (Alt and Lassen, 2006) and smaller government (Lindqvist and Östling, 2010).[1] If polarization is indeed the root of all policy failure, then researchers should strive to understand its causes. This note investigates the role of the media.

2 Hypotheses

The electorate derives information concerning political performance through the media. The 'benign' view of the media is articulated in the U.S. Society of Professional Journalists' Code of Ethics that "public enlightenment is the forerunner of justice and the foundation of democracy. The duty of the journalist is to further those ends by seeking truth and providing a fair and comprehensive account of events and issues." In principle then, greater media access entails a better-informed electorate. If more and better information facilitates consensus, for example over whether and how policy X led to outcome Y, then deeper media penetration reduces polarization.[2]

However, current thinking is often less sanguine. Given greater media penetration, and hence greater media choice, then individuals perhaps ideologically select media according to their predisposition (Iyengar and Hahn, 2009). This selection process arguably reinforces

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[1] More generally divisions within society empirically harm growth, e.g. Easterly and Levine (1997).

[2] Note availability of information is not a sufficient condition for greater consensus, e.g. see Dixit and Weibull (2007).

pre-existing differences in attitudes and behavior (Slater, 2007). Stroud (2010) finds a strong correlation between 'partisan selective exposure' and polarization using survey data, although importantly the direction of causality is not clear. Prior (2013) suggests that political elites in the US may have become more polarized with media penetration, though is more circumspect on evidence relating to the electorate as a whole. Nonetheless there is an ongoing suspicion of a 'malign' media that amplifies polarization.

Hence the benign hypothesis is that greater media penetration reduces polarization, whilst the malign hypothesis is the reverse. A key problem in the econometric analysis is endogeneity. More polarized societies might choose greater or less media access - in the former case perhaps in order to consume polarized analysis, or in the latter case as an act of disengagement. To overcome this problem the analysis focuses on the dynamic response of polarization and media levels. In particular given habitual voting and inertia in policy, then under either hypothesis polarization would be expected to respond with a lag to changing media penetration. On the other hand given habitual media consumption, then under reverse causality at least, then polarization might lead media consumption levels.

3   Data

The sample spans 22 OECD countries between 1970 and 2003.[3] The dependent variable is constructed using party-level left-right ideology data produced by the Manifestos Research Group (MRG: Budge et al, 2001, and Klingemann et al, 2006), denoted $rile_{pjt}$ for party p in country j in year t, which in principle vary between -100 (extreme left) to +100 (extreme

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[3]The media intensity data do not go beyond 2003.

right).[4] Advantageously, these data vary across time as manifestos of particular parties change with elections. The leftmost observation is the Danish Socialist People's Party in 1960 with $rile = -68.1$, whilst the rightmost observation is the Australian Country party in 1954 with $rile = 85$. To construct a measure of polarization (POL_{jt}) in an election year within a particular country we estimate the standard deviation of the ideology distribution in the electorate using:

$$POL_{jt} = \sqrt{\sum_p V_{pjt} rile^2_{pjt} - \left(\sum_p V_{pjt} rile_{pjt}\right)^2}$$

where V_{pjt} is the proportion of votes received by party P in the election. Non-election years are interpolated. The mean value for POL_{jt} is 17.0 and its standard deviation is 6.95. Notably there is no obvious time trend in polarization: the cross-country mean in 1970 was 15.7 whilst in 2003 it was 15.8. In a regression of POL_{jt} on fixed country and time effects alone none of the time effects are estimated to be statistically significant. The least polarized election in the sample was Germany 1965 $(POL_{jt} = 2.47)$, perhaps reflecting the consensual approach to politics in this country following the second world war. The most polarized election was Finland 1945 $(POL_{jt} = 43.23)$, reflecting the presence of a politically strong communist party together with overtly anti-Soviet centrist and rightwing movements that prioritized Finnish sovereignty.

The within-country data are also plausible. In the UK for example, politics were fairly

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[4]Gabel and Huber (2000) find that the MRG data cohere with expert surveys and the World Values Survey.

polarized in 1945 ($POL_{jt} = 21.4$).[5] However in the 'post-war consensus' polarization fell to 4.32 in 1959. Polarization re-emerged in the 1970s peaking in 1983 at 28.3, reflecting Prime Minister Thatcher's drive to the right, and Labour's relative inertia.[6] More latterly, with the emergence of New Labour, polarization has declined, with POL_{jt} in single digits so far through the 21st century.

Media depth is measured by the number of televisions per 1000 people (tv), and the number of radios per 1000 people ($radio$) from the World Bank World Development Indicators database. Strömberg (2004) also used radio ownership data to gauge voter knowledge. In the case of tv the data generally span 1975-2001, whilst for $radio$ they generally span 1970-1997. The data of course trend upwards in all countries, but importantly to differing extents. In 1975 tv varied between 99 (Portugal) and 486 (USA), whilst in 2001 the range was 395 (Ireland) to 965 (Sweden). In 1970 $radio$ varied between 155 (Portugal) and 960 (Australia) whilst in 1997 the range was from 299 (Portugal) to 2109 (USA). The correlation coefficient of the two media intensity variables is 0.76.

4 Evidence

Table 1 contains regression results using annual data. Columns (1a) and (1b) report fixed effects regressions of POL_{jt} respectively on tv and $radio$. The estimated coefficients in both instances are negative - in support of the benign view of the media: greater media presence coexists with reduced polarization in the electorate.

Column (2) additionally includes time effects, and the magnitude of the estimated co-

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[5]In 1945 the elected Labour party began significantly expanding the welfare state.
[6]For example Clause 4 of the Labour Party constitution was not revised until 1995.

efficient in the instance of *tv* (2a) increases substantially. Interestingly the estimated time effects in this case now exhibit an upward trend, offsetting the estimated negative effect of the upward-trending media variable. This means that countries in which the media expansion was less pronounced exhibited a relative increase in polarization, whilst those countries which more keenly embraced the new media exhibited a relative decline. The regression results in the case of *radio* are estimated with less precision when time effects are included, though the coefficient sign is consistent with before.

Column (3) extends the specification to include a set of control variables: real GDP per capita, population size, two demographic measures and trade openness. These results are similar to column (2). Interestingly *trade* is negatively associated with polarization. The estimated effect of *tv* continues to be negative and sizeable. Possibly the greater statistical significance in column (3b) of *rgdpch* and *pop* maybe compensating for *tv* which is excluded from this regression.

These results are suggestive, but by themselves do not establish causality. Table 2 addresses dynamic responses of polarization and media intensity. The analysis here uses 5-year averages of the data. It seems likely that ideology - both at the level of the individual voter and parties deciding on their position - should be slow moving. To only use a one year lag will likely understate this inertia. 5-year averages also likely improves measurement of the dependent variable - which are now less susceptible to particular manifestos or elections. Column 1 contains results where contemporaneous data are used. The results confirm those in column 3 of table 1, with slightly improved overall explanatory power as would be expected if the data are better measured.

Column (2) of table 2 contains results where polarization is regressed on average media

depth in the previous 5 year period. If the direction of causality runs from media to polarization, then these results would be expected to be negative, given behavioral inertia. It turns out that the estimated coefficients for both *tv* and *radio* are now negative and significant, supporting the benign view of the media.

As a first robustness check observations from Greece, Portugal and Spain were omitted. Democracy in these countries was more recently established and hence arguably media quality may be lower perhaps due to state control. Nonetheless the results (not reported) are qualitatively unaltered. In a second robustness check data for turnout were included as an additional control variable. Turnout by itself positively affects polarization as would be expected, but again the results relating to the estimated effect of the media data are qualitatively unaltered.[7]

In column (3) the possibility of reverse causality is investigated - the media variables are regressed upon the lag of polarization in an otherwise identical regression specification. In this case neither coefficient is significant. In the data the media data lead the polarization data. Conversely changes to polarization do not lead changes in media consumption.

Using the estimates from column (2a) of table 2, a one standard deviation increase in media intensity as measured by *tv* (an additional 149 television sets per 1000 population) leads a reduction in polarization of around 5 points (70% of a standard deviation). The empirical relationship between polarization and the media is quantitatively large as well as statistically significant.

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[7]If turnout is non-random, then lower turnout means one ideological wing is under-represented in the data.

5 Conclusion

This note investigates the relationship between ideological polarization and the media. Using manifesto-based data for polarization and television and radio ownership data as a proxy for media intensity, we find a robust negative statistical association between the two variables wherein the media leads polarization but not vice-versa. The evidence is consistent with a 'benign' view of the media: greater consumption of the information transmitted empirically leads to greater political agreement.

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
tv	−7.828*** (2.154)		−26.64*** (4.829)		−28.74*** (5.197)	
$radio$		−2.672** (1.328)		−3.292 (2.590)		−1.956 (2.743)
$rgdp$					−0.012 (0.134)	−0.363 (0.135)***
pop					−0.062 (0.046)	−0.145 (0.057)**
$pop1564$					0.411 (0.214)*	0.244 (0.237)
$pop65$					0.006 (0.228)	0.367 (0.330)
$trade$					−0.130 (0.033)***	−0.204 (0.045)***
Time Effects?	No	No	Yes	Yes	Yes	Yes
Observations	606	608	606	608	606	608
R^2	0.43	0.39	0.49	0.42	0.51	0.46

Table 1. Estimation Results - annual data

Notes: The dependent variable is ideological polarization. Robustly estimated standard errors are in parentheses. *rgdp* is real GDP per capita (source: Penn World Tables). *Pop* (population size), *Pop*1564 (population proportion aged between 15 and 64), *Pop*65 (population proportion aged over 65) and *trade* (trade openness) are all taken from the World Development Indicators database.*, **, *** respectively denote significance at the 10%, 5% and 1% level.

	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)
tv	-33.59^{***} (9.622)					
$radio$		-6.591 (5.640)				
tv_{jt-1}			-32.92^{***} (9.560)			
$radio_{jt-1}$				-12.47^{**} (5.848)		
POL_{jt-1}					-0.772 (1.132)	-1.919 (2.101)
$rgdp$	0.163 (0.263)	0.311 (0.292)	0.312 (0.238)	0.213 (0.264)	0.0059 (0.0025)**	0.0071 (0.0053)
pop	-0.104 (0.063)	-0.136 (0.077)	-0.140 (0.049)***	-0.195 (0.077)***	0.516 (1.261)	-2.636 (2.013)
$pop1564$	0.143 (0.436)	0.036 (0.523)	-0.089 (0.455)	-0.289 (0.515)	4.810 (5.037)	1.848 (1.266)
$pop65$	-0.059 (0.435)	0.349 (0.564)	0.692 (0.357)*	0.145 (0.460)	-5.280 (6.260)	-34.70 (10.13)***
$trade$	-0.124 (0.072)*	-0.164 (0.100)	-0.142 (0.066)**	-0.098 (0.070)	-1.929 (0.900)**	1.848 (1.266)
Time Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	132	132	130	134	130	129
R^2	0.56	0.52	0.56	0.51	0.92	0.97

Table 2. Estimation Results - five-year averages

Notes: Column (1) and (2) the dependent variable is POL_{jt}. In columns (3a) and (3b) the dependent variable is respectively tv and $radio$. Other notes as for Table 1.

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