Online Appendix to the Paper: Media Competition, Information Provision and Political Participation*

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A Data Sources

A.1 Newspaper Data

A.1.1 Number of Newspapers

To determine for each year between 1945 and 2012 the number of newspapers present in each French "département"/county, I use various sources of information that I digitize and merge.

For the **1945-1958** period, I use as a first source of information Guillauma (1995) who lists all the political and general information newspapers that have been published in France over the period. I extract from this list all the local daily newspapers. I check the consistency of Guillauma data by using three other sources. First, the *Cahiers de L'Institut Français de Presse*, a standard publication from an important French institute of press studies. Second, data from Ministry of Information reports on the state of French newspapers, that I collect in the French national archives. Third, the *Annuaires de la Presse et de la Publicité*, an annual directory of French newspapers. Newspaper directories are standard sources for historical research on French newspapers, but have never been digitized before. They originated as a guide to potential advertisers and were intended to be complete.

For the **1959-2006** period, I use the *Annuaires de la Presse et de la Publicité* as the first source of information.

For the 2007-2012 period, I use a more recent directory of newspapers (*Tarif média. La première source d'information sur les médias*).

I always check the consistency of the data on the number of newspapers present in each French county by using circulation data (see below). I also check that this data is consistent with the information provided in history books on French newspapers (Kayser, 1963; Derieux and Texier, 1974; Guillauma, 1988; Le Floch and Sonnac, 2000; Albert, 2004; Martin, 2005; Eveno, 2008).

Newspaper Owners To determine the identity of newspaper owners, I use (i) studies by historians, especially Derieux and Texier (1974); (ii) the archives of *Le journaliste* (a quarterly periodical published by the *Syndicat National des Journalistes* (SNJ) – National Union of Journalists); (iii) the archives of the INA (*Institut National de l'Audiovisuel* – National Audiovisual Institute); (iv) the archives of the newspaper *Le Monde*; and (v) information provided on the website of the Graduate School of Journalism of Lille[1].

A.1.2 Newspaper Circulation and Readership

I collect information on aggregate newspaper circulation at the newspaper level; and on newspaper circulation in each county for newspapers circulating across nearby counties. I also

[1] http://esj-lille.fr/

collect information on aggregate readership.

Aggregate circulation For the period **1945-1959**, newspaper circulation data comes first from Albert (1989) which is a standard source of historical research on this topic. I digitize this data. I check its consistency and complete it by using archives data from the French Ministry of Information's reports on the state of French newspapers. I used three reports:

1. *"Tirage des quotidiens de province au printemps 1945"*(local newspapers circulation during the spring 1945). These tables are from a file called "Local press, Political and news publications". They originate from the French Ministry of Informations regional delegations in major cities and date from April 1945.

2. "*Tirage des quotidiens de province de 1945 à 1952"* (local newspapers circulation between 1945 and 1952). These tables provide for each city and year the average circulation of all the local newspapers published in the city.

3. "*Tirage des quotidiens de province de 1951 à 1958"* (local newspapers circulation between 1951 and 1959).

For the period **1960-1974**, I use French Ministry of Information's non-publicly available records in the National archives. Newspapers were asked by the Ministry of Information to report annually on revenues, expenses and circulation. I collect and digitize data by having direct access to their responses to these queries.

For the **1975-1978** period, I use data in paper format from "Proscop Media"[2] reports that I digitize. These reports are available in the French National Library.

Finally, for the period **1979-2012**, newspaper circulation data is available in digitized format from the OJD, which is the French press observatory whose aim is to certify circulation data.[3]

Circulation data with geographical dispersion For the **1945-1958** period, circulation data with geographical dispersion is from the French Ministry of Information's reports described above.

For the **1959-1988** period, circulation data with geographical dispersion in paper format is from "Opération Vérité", an annual survey on local newspaper circulation at the city level conducted by the *Centre d'Etude des Supports de Publicité* (CESP). The CESP is a French interprofessionnal association gathering the whole of the actors of the advertising market concerned with the study of the media audience (advertisers, agencies and councils media,

[2]The Proscop Institute is a firm specialized in market research and marketing and geostrategic consulting.
[3]http://www.ojd.com/

central merchandisings of space, advertising media and controls). Figure A.1 provides an example of this data.

[FIGURE A.1 HERE]

I check the consistency of this data by using data on geographical dispersion from Proscop Media for 1968-1970, 1973, 1975-1978, 1980, 1981, 1983, 1985-1987, 1989, 1991 and 1996.

For the **1990-2012** period, circulation data with geographical dispersion is available in digitized format from the OJD.

Readership For the **1957-1992** period, the data on newspaper readership is from the CESP which publishes every five years between 1957 and 1967 and annually starting from 1968 a study of French newspaper readers (*Etude sur les lecteurs de la presse française*). The representative sample of the survey is drawn from all French people above 18 years old living in metropolitan France using electoral lists. It is a random sample including between 250,000 and 300,000 individuals depending on the years. The survey is conducted using a questionnaire whose main aim is to describe the behavior of French readers at the time of the survey. The main information provided is about the reading of a newspaper during the last period. The survey is available in paper format in the CESP. I digitize it for the following years: 1957, 1962, 1967, 1968, 1969, 1970, 1972, 1974, 1976, 1978, 1980, 1982, 1984, 1986, 1988, 1990 and 1992. Figure A.2 provides an example of this data.

[FIGURE A.2 HERE]

For the **1996-2012** period, the data on newspaper readership is available in digitized format from the *Syndicat de la Presse Quotidienne Régionale* (SPQR – Local daily press syndicate).[4] This annual data is from audience studies conducted to measure newspaper readership.

A.1.3 Newspapers' Price, Expenses and Revenues

I collect annually for local daily newspapers between 1960 and 2009 a number of important economic indicators, namely sales, profits, value-added, operating expenses (payroll, inputs, taxes), operating revenues (revenues from sales and revenues from advertising), and the number of employees.

For the **1960-1974** period, the data is from the French Ministry of Information's non-publicly available records in the National archives described above (newspapers were asked by the Ministry of Information to report annually on revenues, expenses and circulation). Figure A.3 provides an example of this data.

[4]There is a gap in the dataset for 1993-1995. To the extent of my knowledge there is no survey covering this period. The data is also missing for the year 2005 in which no survey was conducted.

[**FIGURE A.3 HERE**]

For the **1984-2009** period, the data (in digitized format) is from the Enterprise Survey (*Enquêtes Annuelles d'Entreprise* – EAE) conducted by the French national institute for statistics (INSEE) and the files constructed for the tax regime (*Bénéfice Réel Normal* – BRN) by the Finance Ministry (*Direction Générale des Impôts* – DGI). I identify newspapers in the dataset using the French registry of establishments and enterprises ("Sirene"). For the newspapers not covered in the Enterprise Survey, I use information from the Bureau van Dijk's websites (in particular ORBIS).

Finally, the data on the number of journalists, covering the period 1999-2012, is from the local daily press syndicate (SPQR). I complete it using data I obtain directly from newspapers.[5]

A.1.4 Newspapers' Content

Front pages Newspapers' front pages come from the SPQR website which publishes every day the "front pages of the day" of 54 local daily newspapers.[6] I download these front pages in ".pdf" format using an automated script, convert ".pdf" files in ".txt" files using an OCR software and count the number of words on each frontage.

Entire content I collect data on the entire daily content of each newspaper issue by using an automated script to retrieve for each day all the articles published in the issue. I download the data from two different websites which aggregate content from newspapers (Factiva[7] and Lexis-Nexis[8]).

Hard news and soft news To divide newspaper content between hard news and soft news, I use the information provided by the website Lexis-Nexis. When I retrieve the entire newspaper issues, I also retrieve all the metadata (tag) associated with each article on Lexis-Nexis

[5]Contrary to the United States, there is no media directory available with information on the number of journalists by newspapers in France.

[6]http://www.pqr.fr/editeurs/les-unes-du-jour/

[7]The data from Factiva covers 18 newspapers (beginning date in parentheses): *Berry Républicain* (2010-04-01); *Charente Libre* (2005-05-06); *Centre Presse Aveyron* (2006-09-01); *Est Républicain* (2008-02-27); *Indépendant* (2006-09-01); *Maine Libre* (2011-03-04);*Midi Libre* (2006-09-01); *Montagne* (2010-04-01); *Nouvelle République* (2011-01-12);*Ouest France*(2002-07-17); *Parisien* (2005-06-15); *Populaire du Centre* (2010-04-01);*Presse Océan* (2008-10-01); *Progrès* (2003-10-23); *République du Centre* (2011-05-02); *Sud Ouest* (2003-09-22); *Voix du Nord* (2011-02-01); *Yonne Républicaine* (2010-04-01).

[8]The data from Lexis-Nexis covers 21 newspapers: *Berry Républicain* (2010-03-22); *Centre Presse Aveyron* (2010-03-22); *Est Républicain* (2008-02-07); *Havre Libre* (2008-01-05); *Havre Presse* (2008-01-07); *Indépendant* (2007-05-11); *Journal Du Centre* (2010-03-22); *Maine Libre* (2011-09-05); *Midi Libre* (2006-11-01); *Montagne* (2010-03-22); *Nouvelle République* (2004-03-23); *Ouest France*(2006-04-20); *Paris Normandie* (2004-09-02); *Parisien* (2006-12-20); *Populaire du Centre* (2010-03-22); *Presse Océan* (2010-12-08); *Progrès de Fcamp* (2008-01-022); *Sud Ouest* (1994-05-07); *Tégramme (2002-02-01)*; *Voix du Nord* (2009-09-14); *Yonne Républicaine* (2010-03-22).

(title, topic and subject). Figure A.4 provides an example of the format of the information I obtain from Lexis-Nexis. This example covers the May 8th, 2011 issue of the newspaper *Berry Républicain*. In this issue, they are 114 articles. The length of the article in this example is 330 words. The topic is sport; I classify this article as soft news.

[FIGURE A.4 HERE]

Combining information from the title, topic and subject, I determine for each article its category. I create 13 different categories: agriculture, culture, economics, education, environnement, health, international, leisure activities, movies, "news in brief" (*faits divers*), politics, religion and sports.

I define as **hard news** the articles on agriculture, economics, education, environnement, international or politics.

I define as **soft news** the articles on culture, health, leisure activities, movies, "news in brief", religion or sports.

A.2 French Voting System, Electoral Data and Demographic Controls

Local juridictions France is organized in six different levels of local juridictions: (i) *régions* (states); (ii) *départements* (counties); (iii) arrondissements; (iv) cantons (administrative districts); (v) *"intercommunalités"* (intercommunal consortium); and (vi) cities. Four levels correspond to electoral circumscriptions: (i) "régions"/states (regional elections); (ii) "départements"/counties (legislative elections); (iii) cantons (cantonal elections); and (iv) cities (mayoral elections).

A "d'epartment"/county is a French administrative division. There are 101 French counties. The median land area of a county is 2,303 sq mi, which is slightly more than three-and-half times the median land area of a county of the United States. There are 36,570 cities in metropolitan France. There are 2,282 cities with more than 3,500 inhabitants outside the area of Paris. Table A.1 presents descriptive statistics on local juridictions.

Voting system The French voting system for local (mayoral) elections is the two-round list system with proportional representation (*"scrutin de liste à deux tours avec représentation proportionnelle"*). For cities with more than 3,500 inhabitant – which are the focus of this paper –, the system functions as follows: if a list obtains the absolute majority in the first round, then a number of seats equal to half of the available seats is attributed to this list. The other seats are shared between all the other lists following the proportional representation with the highest averages method. If no list obtains the absolute majority in the first round, then a second round takes place. The only lists that can take part in this round are the ones which obtained more than 10% of the recorded votes in the first round. A number of seats

equal to half of the available seats is attributed to the list which obtains most votes and the other sears are shared between all the other lists following the proportional representation with the highest averages method.

Mayoral elections take place in France every six years.

Electoral data Between 1947 and 2008, 11 local elections took place: in 1947, 1953, 1959, 1965, 1971, 1977, 1983, 1989, 1995, 2001 and 2008.

Before 1983, data on French mayoral elections have never been digitized. I construct the first electronically available dataset on French local elections results at the city level between 1945 and 1982, using official data sources in paper format.

For the **1947 and 1953 elections**, I digitize data from the National archives in Paris (available in various boxes beginning with shelf mark "F/1cII/"). The data covers all the cities with more the 2,500 inhabitants. Figure A.5 shows an example of this electoral data (for the 1947 election).

[FIGURE A.5 HERE]

For the **1959, 1965, 1971, and 1977 elections**, I digitize data from the newspaper *Le Monde*. This information is available only for cities with more than 9,000 inhabitants. I supplement the 1959 data for cities under 9,000 inhabitants using data from the National archives.

For the **1983, 1989, 1995 and 2001 elections**, I use the data from the *Centre de Données Socio-Politiques* (CDSP) of Science-Po Paris for all the cities over 3,000 inhabitants.

Finally, for the **2008 election**, the data is available in digitized format from the Interior ministry for all the cities over 3,500 inhabitants.

Demographic Data City-level demographic data from the French census is available in electronic format from the French national institute for statistics (INSEE) website for 1968, 1975, 1982, 1990, 1999, 2009 and 2010.[9] The 1962 census data is from the *Centre Maurice Halbwachs*.[10]

First, the census provides information on the total population, and on the share of the population by age group.

Second, the census provides information on the share of the population by occupation. Individuals (the working population between 15 and 64 year old) are classified into 6 different socio-economic groups:

1. Farmers;

[9] http://www.insee.fr/fr/bases-de-donnees/default.asp?page=statistiques-locales.htm
[10] http://www.cmh.ens.fr/greco/adisp.php

2. Artisans, shopkeepers and company managers (*"artisans-commercants-chefs d'entreprises"*);

3. Senior executives and knowledge workers (*"cadres et professions intellectuelles supérieures"*);

4. Intermediate occupations (*"professions intermédiaires"*);

5. Employees;

6. Laborers.

Third, the census provides information on the share of the population by degree. Individuals above 15 years old are classified into 6 different education degrees:

1. No diploma;

2. "Certificat d'études primaires" which is a diploma awarded at the end of elementary primary education in France (which was officially discontinued in 1989);

3. "BEPC" or "brevet" which is a diploma given to French pupils at the end of the "3ème" (which corresponds to year 10 or ninth grade);

4. "Certificat d'aptitude professionnelle" (CAP) or "brevet d'études professionnelles" (BEP) which are secondary and vocational education diplomas;

5. "Baccalauréat" which is an academic qualification taken at the end of the lycée (secondary education) and the main diploma required to pursue university studies;

6. Higher (post-secondary) education.

I digitize data for the 1936, 1946 (INSEE, 1947) an 1954 (INSEE, 1958) censuses from original publications by the French national institute for statistics. However, I only obtain information on the size of the population and the share of the population by age group for this time period.

Table A.1: French Local Juridictions, Descriptive Statistics (2008)

	Région *State*	Département *County*	Canton	Cities	Cities over 9,000 inhabitants
Number	22	96	3,883	36,570	1,011
Average population (nb)	2,839,500	650,719	16,088	1,722	61,789
Average area (km^2)	24,865	5,698	141	14.88	541

Sources: French national institute for statistics (INSEE).

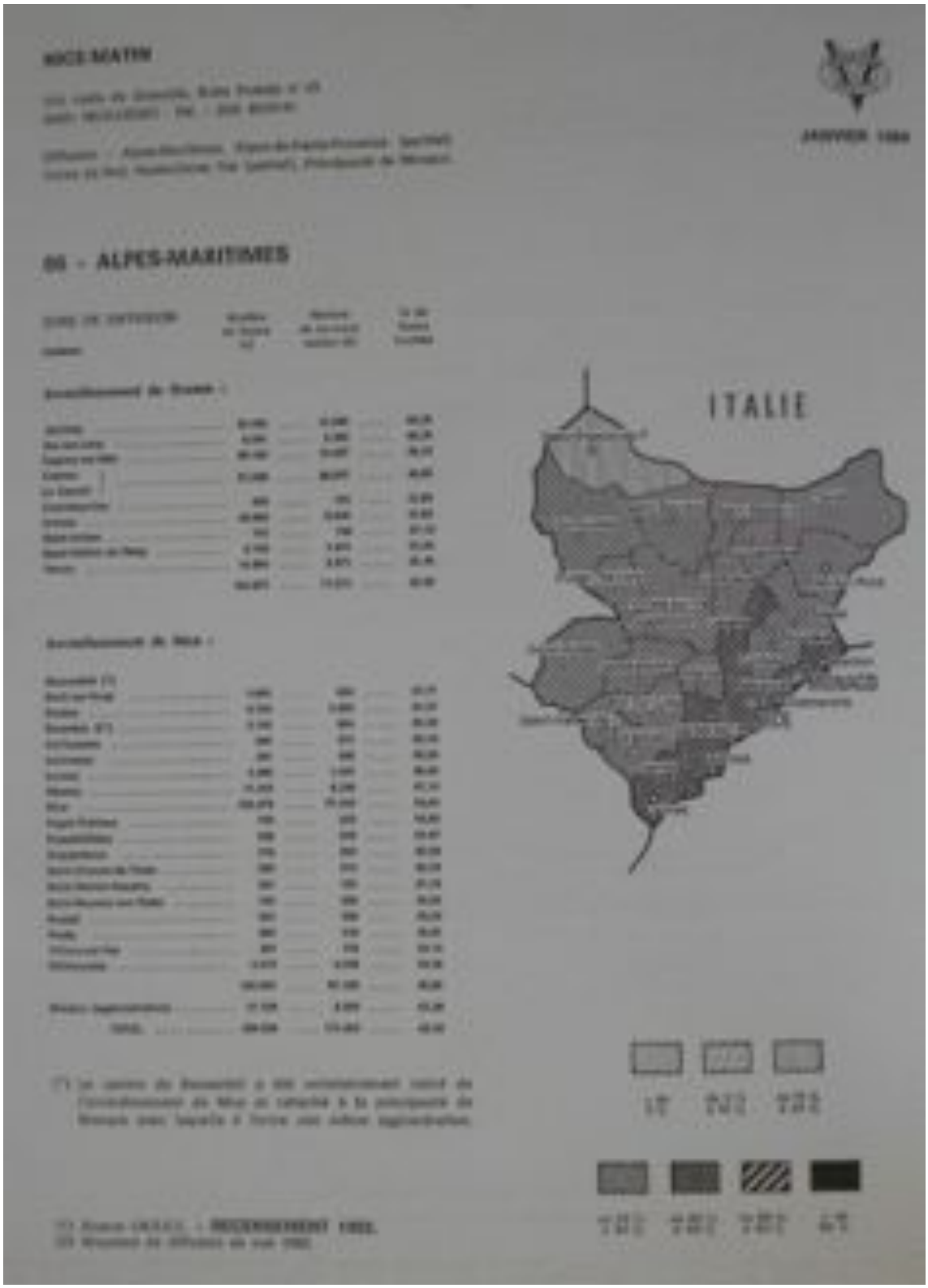
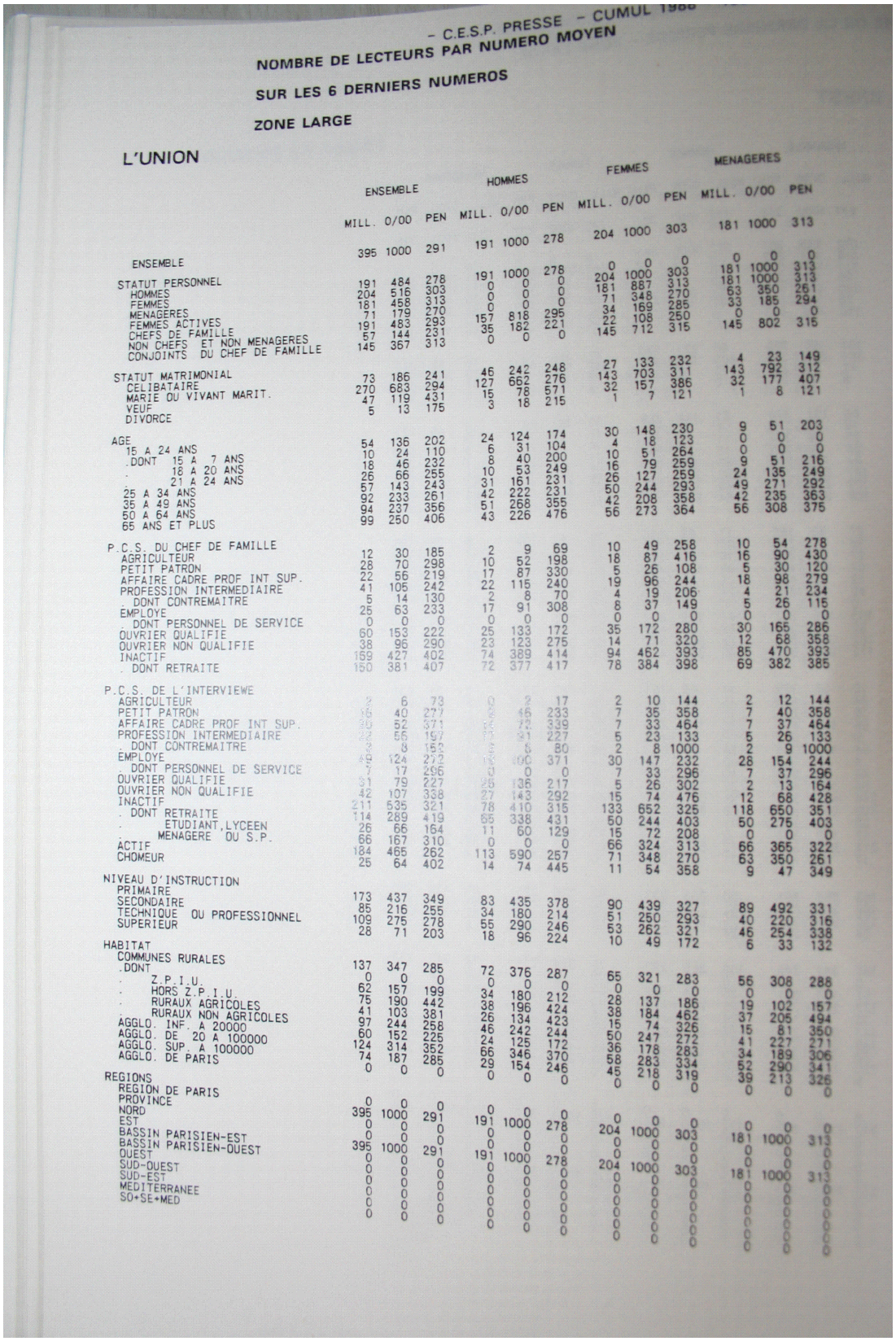


Figure A.1: Example Showing the "Opération Vérité" Circulation Data in Paper Format



- C.E.S.P. PRESSE - CUMUL 1988

NOMBRE DE LECTEURS PAR NUMERO MOYEN

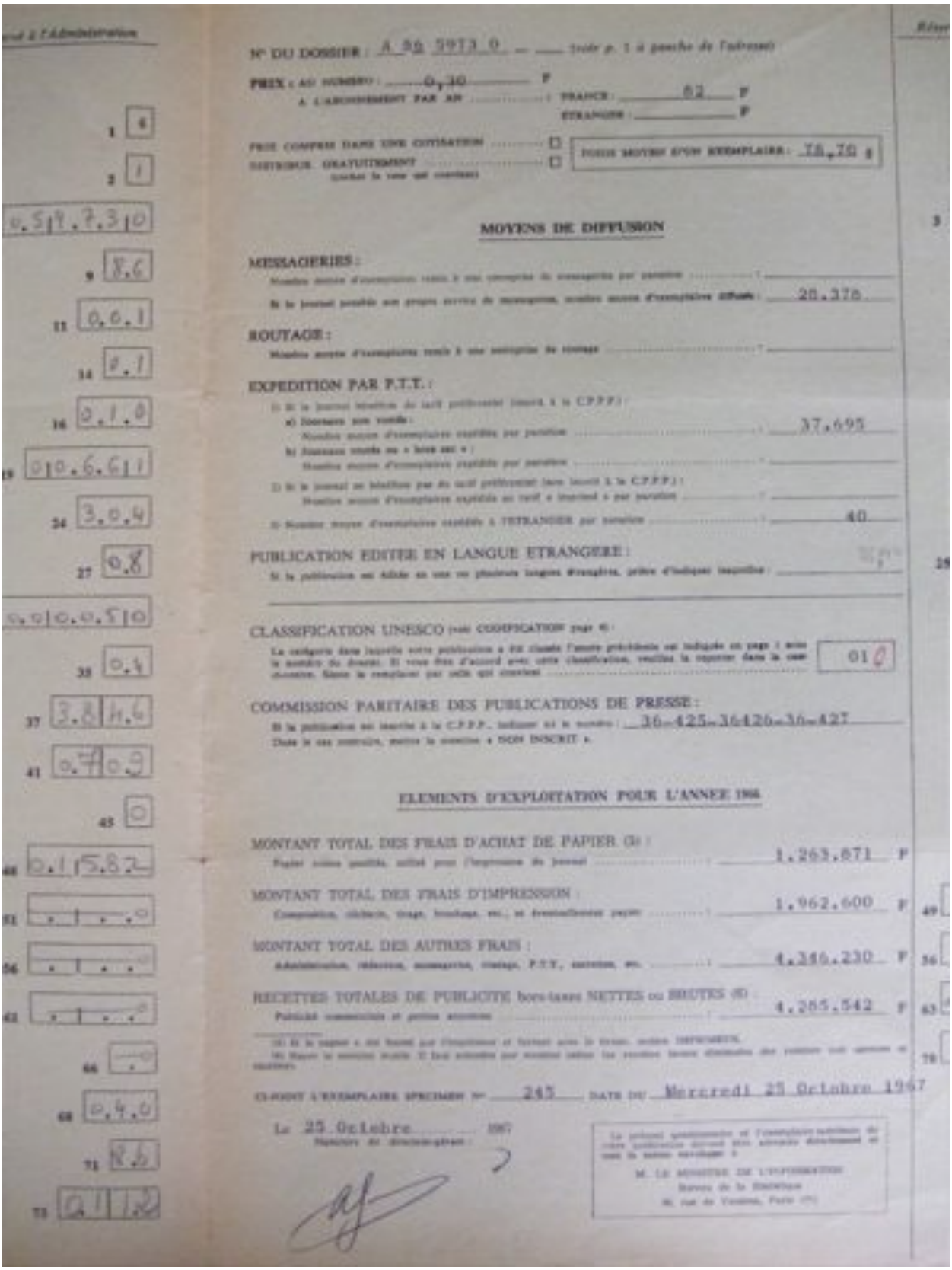
SUR LES 6 DERNIERS NUMEROS

ZONE LARGE

L'UNION

	ENSEMBLE			HOMMES			FEMMES			MENAGERES		
	MILL.	0/00	PEN	MILL.	0/00	PEN	MILL.	0/00	PEN	MILL.	0/00	PEN
ENSEMBLE	395	1000	291	191	1000	278	204	1000	303	181	1000	313
STATUT PERSONNEL												
HOMMES	191	484	278	191	1000	278	0	0	0	0	0	0
FEMMES	204	516	303	0	0	0	204	1000	303	181	1000	313
MENAGERES	181	458	313	0	0	0	181	887	313	181	1000	313
FEMMES ACTIVES	71	179	270	0	0	0	71	348	270	63	350	261
CHEFS DE FAMILLE	191	483	293	157	818	295	34	169	285	33	185	294
NON CHEFS ET NON MENAGERES	57	144	231	35	182	221	22	108	250	0	0	0
CONJOINTS DU CHEF DE FAMILLE	145	367	313	0	0	0	145	712	315	145	802	315
STATUT MATRIMONIAL												
CELIBATAIRE	73	186	241	46	242	248	27	133	232	4	23	149
MARIE OU VIVANT MARIT.	270	683	294	127	662	276	143	703	311	143	792	312
VEUF	47	119	431	15	78	571	32	157	386	32	177	407
DIVORCE	5	13	175	3	18	215	1	7	121	1	8	121
AGE												
15 A 24 ANS	54	136	202	24	124	174	30	148	230	9	51	203
.DONT 15 A 17 ANS	10	24	110	6	31	104	4	18	123	0	0	0
. 18 A 20 ANS	18	46	232	8	40	200	10	51	264	0	0	0
. 21 A 24 ANS	26	66	255	10	53	249	16	79	259	9	51	216
25 A 34 ANS	57	143	243	31	161	231	26	127	259	24	135	249
35 A 49 ANS	92	233	261	42	222	231	50	244	293	49	271	292
50 A 64 ANS	94	237	356	51	268	355	42	208	358	42	235	363
65 ANS ET PLUS	99	250	406	43	226	476	56	273	364	56	308	375
P.C.S. DU CHEF DE FAMILLE												
AGRICULTEUR	12	30	185	2	9	69	10	49	258	10	54	278
PETIT PATRON	28	70	298	10	52	198	18	87	416	16	90	430
AFFAIRE CADRE PROF INT SUP.	22	56	219	17	87	330	5	26	108	5	30	120
PROFESSION INTERMEDIAIRE	41	105	242	22	115	240	19	96	244	18	98	279
. DONT CONTREMAITRE	5	14	130	2	8	70	4	19	206	4	21	234
EMPLOYE	25	63	233	17	91	308	8	37	149	5	26	115
. DONT PERSONNEL DE SERVICE	0	0	0	0	0	0	0	0	0	0	0	0
OUVRIER QUALIFIE	60	153	222	25	133	172	35	172	280	30	165	286
OUVRIER NON QUALIFIE	38	96	290	23	123	275	14	71	320	12	68	358
INACTIF	159	427	402	74	389	414	94	462	393	85	470	393
. DONT RETRAITE	150	381	407	72	377	417	78	384	398	69	382	385
P.C.S. DE L'INTERVIEWE												
AGRICULTEUR	2	6	73	0	2	17	2	10	144	2	12	144
PETIT PATRON	16	40	277	7	46	233	7	35	358	7	40	358
AFFAIRE CADRE PROF INT SUP.	30	52	371	16	72	339	7	33	464	7	37	464
PROFESSION INTERMEDIAIRE	22	56	197	10	91	227	5	23	133	5	26	133
. DONT CONTREMAITRE	3	8	152	2	5	80	2	8	1000	2	9	1000
EMPLOYE	49	124	272	13	80	371	30	147	232	28	154	244
. DONT PERSONNEL DE SERVICE	7	17	296	0	0	0	7	33	296	7	37	296
OUVRIER QUALIFIE	31	79	227	25	136	217	5	26	302	2	13	164
OUVRIER NON QUALIFIE	42	107	338	27	163	292	15	74	476	12	68	428
INACTIF	211	535	321	78	410	315	133	652	325	118	650	351
. DONT RETRAITE	114	289	419	65	338	431	50	244	403	50	275	403
. ETUDIANT,LYCEEN	26	66	164	11	60	129	15	72	208	0	0	0
. MENAGERE OU S.P.	66	167	310	0	0	0	66	324	313	66	365	322
ACTIF	184	465	262	113	590	257	71	348	270	63	350	261
CHOMEUR	25	64	402	14	74	445	11	54	358	9	47	349
NIVEAU D'INSTRUCTION												
PRIMAIRE	173	437	349	83	435	378	90	439	327	89	492	331
SECONDAIRE	85	216	255	34	180	214	51	250	293	40	220	316
TECHNIQUE OU PROFESSIONNEL	109	275	278	55	290	246	53	262	321	46	254	338
SUPERIEUR	28	71	203	18	96	224	10	49	172	6	33	132
HABITAT												
COMMUNES RURALES	137	347	285	72	376	287	65	321	283	56	308	288
.DONT	0	0	0	0	0	0	0	0	0	0	0	0
. Z.P.I.U.	62	157	199	34	180	212	28	137	186	19	102	157
. HORS Z.P.I.U.	75	190	442	38	196	424	38	184	462	37	205	494
. RURAUX AGRICOLES	41	103	381	26	134	423	15	74	326	15	81	350
. RURAUX NON AGRICOLES	97	244	258	46	242	244	50	247	272	41	227	271
AGGLO. INF. A 20000	60	152	225	24	125	172	36	178	283	34	189	306
AGGLO. DE 20 A 100000	124	314	352	66	346	370	58	283	334	52	290	341
AGGLO. SUP. A 100000	74	187	285	29	154	246	45	218	319	39	213	326
AGGLO. DE PARIS	0	0	0	0	0	0	0	0	0	0	0	0
REGIONS												
REGION DE PARIS	0	0	0	0	0	0	0	0	0	0	0	0
PROVINCE	395	1000	291	191	1000	278	204	1000	303	181	1000	313
NORD	0	0	0	0	0	0	0	0	0	0	0	0
EST	0	0	0	0	0	0	0	0	0	0	0	0
BASSIN PARISIEN-EST	395	1000	291	191	1000	278	204	1000	303	181	1000	313
BASSIN PARISIEN-OUEST	0	0	0	0	0	0	0	0	0	0	0	0
OUEST	0	0	0	0	0	0	0	0	0	0	0	0
SUD-OUEST	0	0	0	0	0	0	0	0	0	0	0	0
SUD-EST	0	0	0	0	0	0	0	0	0	0	0	0
MEDITERRANEE	0	0	0	0	0	0	0	0	0	0	0	0
SO+SE+MED	0	0	0	0	0	0	0	0	0	0	0	0

Figure A.2: Example Showing the CESP Readership Data in Paper Format



N° DU DOSSIER : A 96 5973 0

PRIX : FRANCE : 62 F

MOYENS DE DIFFUSION

MESSAGERIES :

Si le journal possède son propre service de messagerie, nombre moyen d'exemplaires diffusés : 28.378

ROUTAGE :

EXPEDITION PAR P.T.T. :

a) Inscrits non vendus : 37.695

40

PUBLICATION EDITEE EN LANGUE ETRANGERE :

CLASSIFICATION UNESCO (voir CODIFICATION page 4) : 010

COMMISSION PARITAIRE DES PUBLICATIONS DE PRESSE :

Si la publication est inscrite à la C.P.P.P., indiquer ici le numéro : 36-425-36426-36-427

ELEMENTS D'EXPLOITATION POUR L'ANNEE 1966

MONTANT TOTAL DES FRAIS D'ACHAT DE PAPIER (1) : 1.263.671 F

MONTANT TOTAL DES FRAIS D'IMPRESSION : 1.962.600 F

MONTANT TOTAL DES AUTRES FRAIS : 4.346.230 F

RECETTES TOTALES DE PUBLICITE hors-taxes NETTES ou BRUTES (2) : 4.265.542 F

JOINDRE L'EXEMPLAIRE SPECIMEN N° 245 DATE DU Mercredi 25 Octobre 1967

Le 25 Octobre 1967

Figure A.3: Example Showing the Expenses and Revenues Data in Paper Format

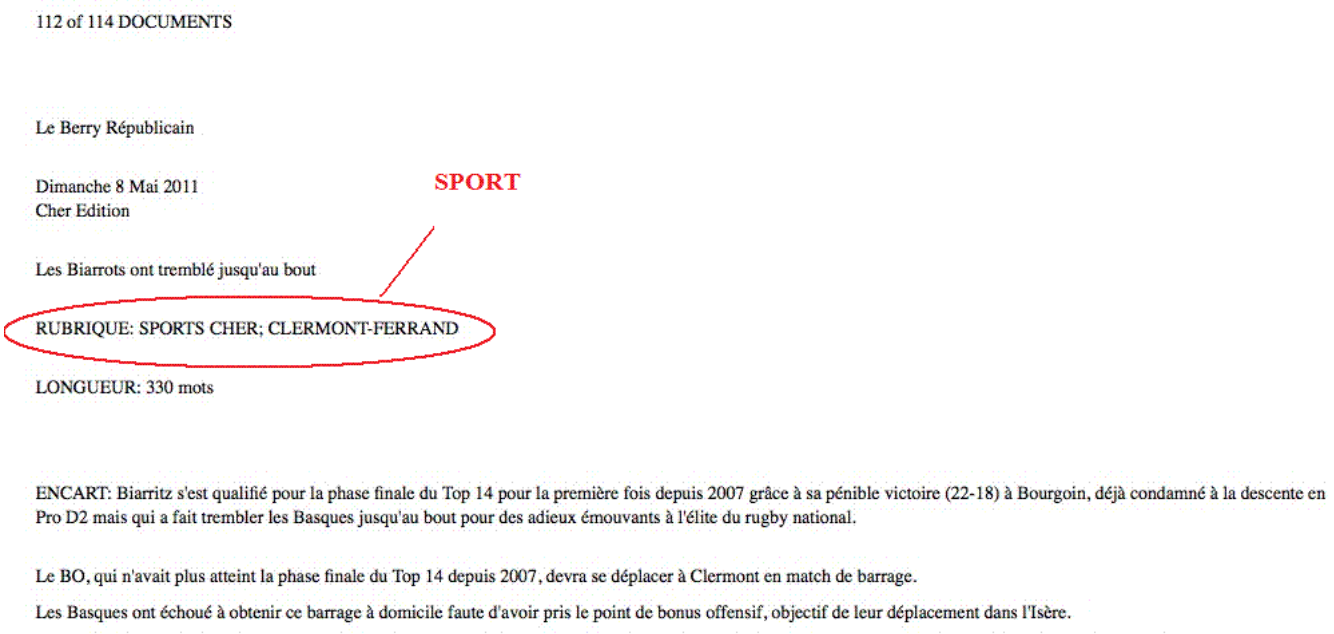
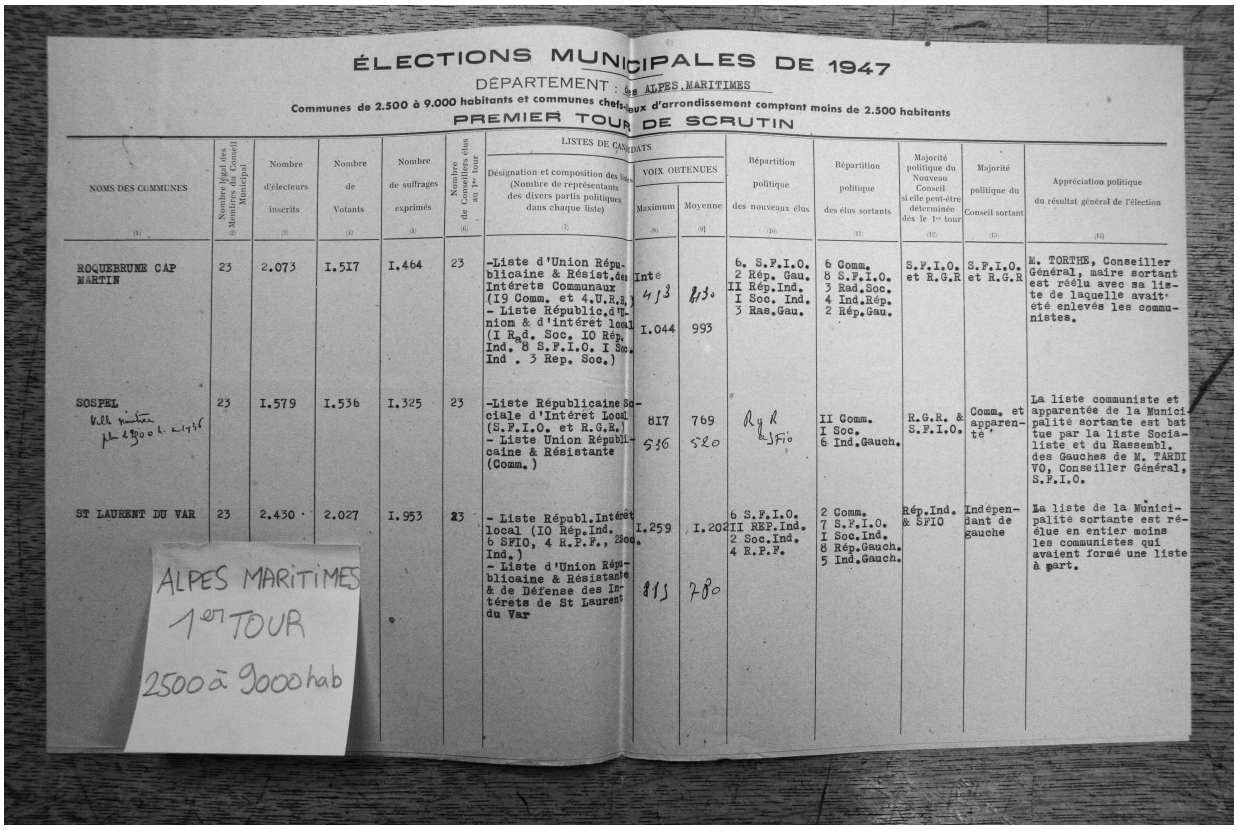


Figure A.4: Example Showing the Format of the Lexis-Nexis Data



ÉLECTIONS MUNICIPALES DE 1947

DÉPARTEMENT : des ALPES.MARITIMES

Communes de 2.500 à 9.000 habitants et communes chefs-lieux d'arrondissement comptant moins de 2.500 habitants

PREMIER TOUR DE SCRUTIN

NOMS DES COMMUNES	Nombre légal des Membres du Conseil Municipal	Nombre d'électeurs inscrits	Nombre de Votants	Nombre de suffrages exprimés	Nombre de Conseillers élus au 1er tour	LISTES DE CANDIDATS — Désignation et composition des listes (Nombre de représentants des divers partis politiques dans chaque liste)	VOIX OBTENUES — Maximum	VOIX OBTENUES — Moyenne	Répartition politique des nouveaux élus	Répartition politique des élus sortants	Majorité politique du Nouveau Conseil si elle peut être déterminée dès le 1er tour	Majorité politique du Conseil sortant	Appréciation politique du résultat général de l'élection
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
ROQUEBRUNE CAP MARTIN	23	2.073	I.517	I.464	23	-Liste d'Union Républicaine & Résist. des Intérets Communaux (I9 Comm. et 4.U.R.R.) - Liste Républic. d'Union & d'intérêt local (I Rad. Soc. IO Rép. Ind. 8 S.F.I.O. I Soc. Ind . 3 Rep. Soc.)	Inte I.044	4/3 873 993	6. S.F.I.O. 2 Rép. Gau. II Rép.Ind. I Soc. Ind. 3 Ras.Gau.	6 Comm. 8 S.F.I.O. 3 Rad.Soc. 4 Ind.Rép. 2 Rép.Gau.	S.F.I.O. et R.G.R	S.F.I.O. et R.G.R	M. TORTHE, Conseiller Général, maire sortant est réélu avec sa liste de laquelle avait été enlevés les communistes.
SOSPEL Ville nouvelle plus de 2.500 h. en 1936	23	I.579	I.536	I.325	23	-Liste Républicaine Sociale d'Intérêt Local (S.F.I.O. et R.G.R.) - Liste Union Républicaine & Résistante (Comm.)	817 536	769 520	R.g.R S.F.I.O.	II Comm. I Soc. 6 Ind.Gauch.	R.G.R. & S.F.I.O.	Comm. et apparenté	La liste communiste et apparentée de la Municipalité sortante est battue par la liste Socialiste et du Rassembl. des Gauches de M. TARDIVO, Conseiller Général, S.F.I.O.
ST LAURENT DU VAR	23	2.430	2.027	I.953	23	- Liste Républ. Intérêt local (IO Rép. Ind. 6 SFIO, 4 R.P.F., 2 Soc. Ind.) - Liste d'Union Républicaine & Résistante & de Défense des Intérets de St Laurent du Var	I.259 815	I.202 780	6 S.F.I.O. II REP.Ind. 2 Soc.Ind. 4 R.P.F.	2 Comm. 7 S.F.I.O. I Soc.Ind. 8 Rép.Gauch. 5 Ind.Gauch.	Rép.Ind. & SFIO	Indépendant de gauche	La liste de la Municipalité sortante est réélue en entier moins les communistes qui avaient formé une liste à part.

ALPES MARITIMES
1er TOUR
2500 à 9000 hab

Figure A.5: Example Showing the Turnout Data in Paper Format

B The Local Daily Newspaper Industry in France, an Overview

In this section, I give an overview of my data and of the evolution of the local daily newspaper industry in France between 1945 and 2012.

Figure B.1 shows the total number of newspapers by year in France. This number decreases strongly between 1945 and 2012. There are 186 local daily newspapers in 1945 and 64 in 2012.

[FIGURE B.1 HERE]

Circulation across nearby counties Despite this decrease, it is important to underline that between 1945 and 2012 there are nearly as many entries than exits. This comes from the fact that many newspapers circulate across nearby counties. In Figure B.2 I report the number (and the share) of newspapers circulating in more than one county. In 1950 (respectively 2000), 42 (27) newspapers over a total of 137 (61) are circulating in more than one county. This represents respectively 30% and 44% of the total number of newspapers in France at the time. On average, these newspapers circulate across 4 counties in 1950 (3.7 in 2000) as shown in Figure B.3.

[FIGURES B.2 & B.3 HERE]

Newspapers sell on average 85% of their copies in the counties in which they are headquartered. This ratio decreases strongly over time, from 98% to 73% in 2000 as shown in Figure B.4. It is below 55% if one only considers newspapers circulating in more than one county. This decrease may be due to improvements in transportation technology. Moreover, counties in which at least one newspaper is headquartered gets on average only 70% percent of their copies from in-county newspapers.

[FIGURE B.4 HERE]

Newspaper-county pairs Entries can thus come either from the "creation" of new newspapers, or from the expansion of existing newspapers in nearby counties.[11] Figure B.5 shows the total number of newspaper-county pairs by year in France. This number decreases between 1945 and 2012 but is still above 150.

[FIGURE B.5 HERE]

Over this period, I observe a total of 276 county-years with net entry and 361 county-years with net exit. Figure B.6 shows for each year the number of counties with net newspaper entry (upper figure B.6a) and the number of counties with net newspaper exit (bottom figure B.6b).

[11] My sample includes a total of 264 newspapers and 630 newspaper-county pairs.

The high number of entries/exits between 1945 and 1955 comes from the 1944-1945 tabula rasa of the past in the newspaper industy described in more details in the article (Section 4.1), with the entry of a lot of new titles and the rapid exit of a number of these new papers whose owners are inexperienced. Between 1955 and 2012, there are 79 county-years with net entry and 22 county-years with net exit.

[FIGURE B.6 HERE]

Figure B.7 shows the average number of local daily newspapers in a county by year. On average, in 1960, there are 3.3 newspapers circulating in each French county. In 2003, the first free daily newspapers appear in France. The figure shows the evolution of the number of newspapers/owners with (blue line with circles) and without (red dashed line with plus) these free newspapers.

[FIGURE B.7 HERE]

The size of the local daily newspaper industry Figure B.8 shows the evolution of the aggregate circulation of local and national daily newspapers. The total circulation of local daily newspapers in France varies between 9 million copies at the beginning of the period and around 6 million today. Local newspapers are a key provider of information over the 1945-2012 period. In comparison, the circulation of national newspapers (including the Paris area) is below 2 million. If one only focus on the circulation of general information newspapers (dropping sport and financial newspapers) outside Paris, then it is below one million.

[FIGURE B.8 HERE]

However, it is important to underline that if in aggregate terms the circulation of local newspapers is much higher than the circulation of national newspapers, the average total circulation of a given national newspaper is higher than the average total circulation of given local newspaper. National newspapers are on average bigger than local newspapers, but there are few of them.[12] Figure B.9 shows the evolution of the average total circulation of a local and a national newspaper. It varies around 200,000 copies for national newspapers, and its just below 100,000 copies for local newspapers.

[FIGURE B.9 HERE]

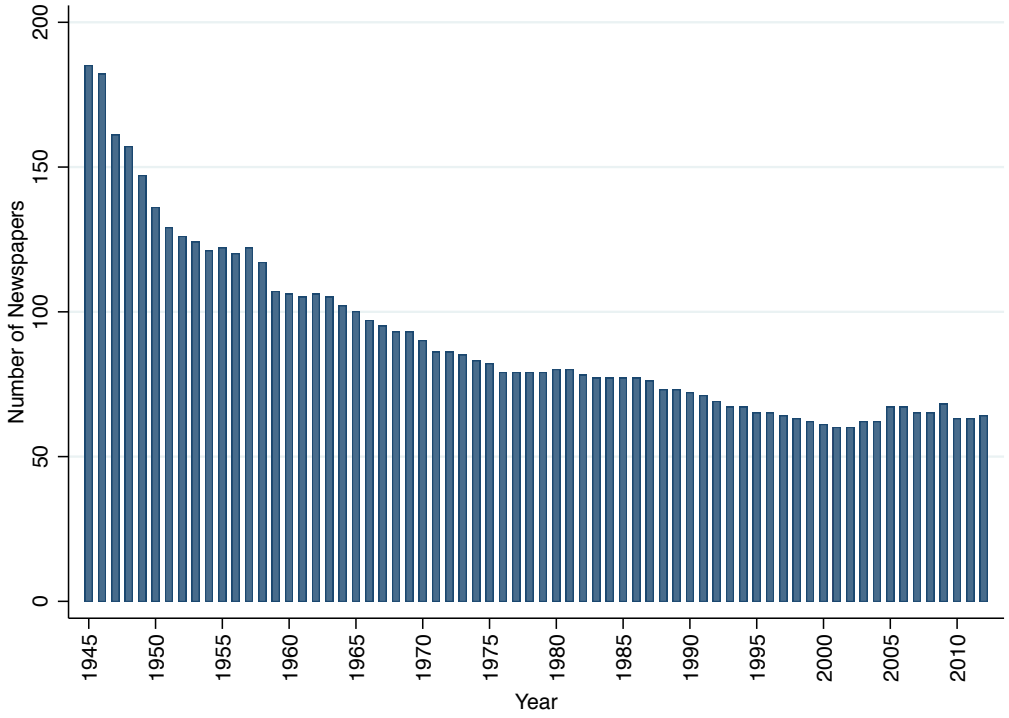
[12]There are only 6 general information national newspapers as of today (*Aujourd'hui en France*; *La Croix*; *Le Figaro*; *L'Humanité*; *Libération*; *Le Monde*), to which one can add 7 sport newspapers (*L'Equipe* and 6 dedicated horse racing newspapers: *Bilto*; *La Gazette des Courses*; *Paris Courses*; *Paris Turf*; *Tiercé Magazine*; *Week-End*) and 1 financial newspapers (*Les Echos*).

Figure B.10 shows the evolution of the average total circulation of a local daily newspaper in a county. The average number of copies decrease varies between 30,000 and 40,000 during the period 1945-2012 (left axis). This number represents 50% of the eligible voters in 1945, just below 30% in 2012 (right axis).

[FIGURE B.10 HERE]

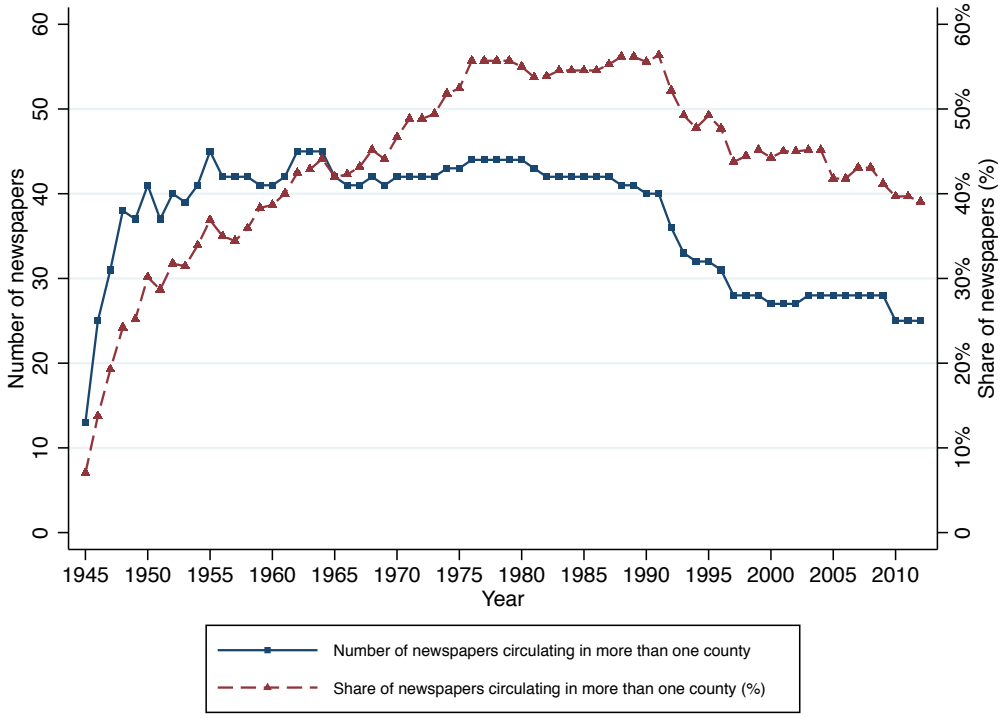
Finally, in Figure B.10, I plot the evolution of the average total county circulation.

[FIGURE B.11 HERE]



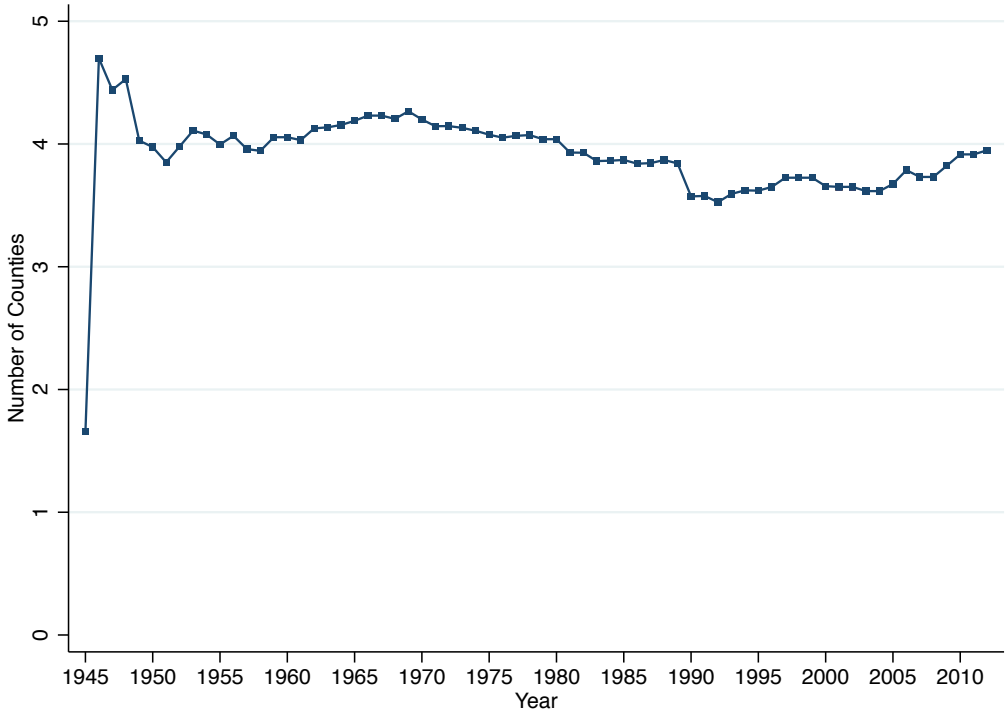
Notes: The data was constructed by the author using various sources described in details in this Appendix.

Figure B.1: Total Number of Local Daily Newspapers by Year in France



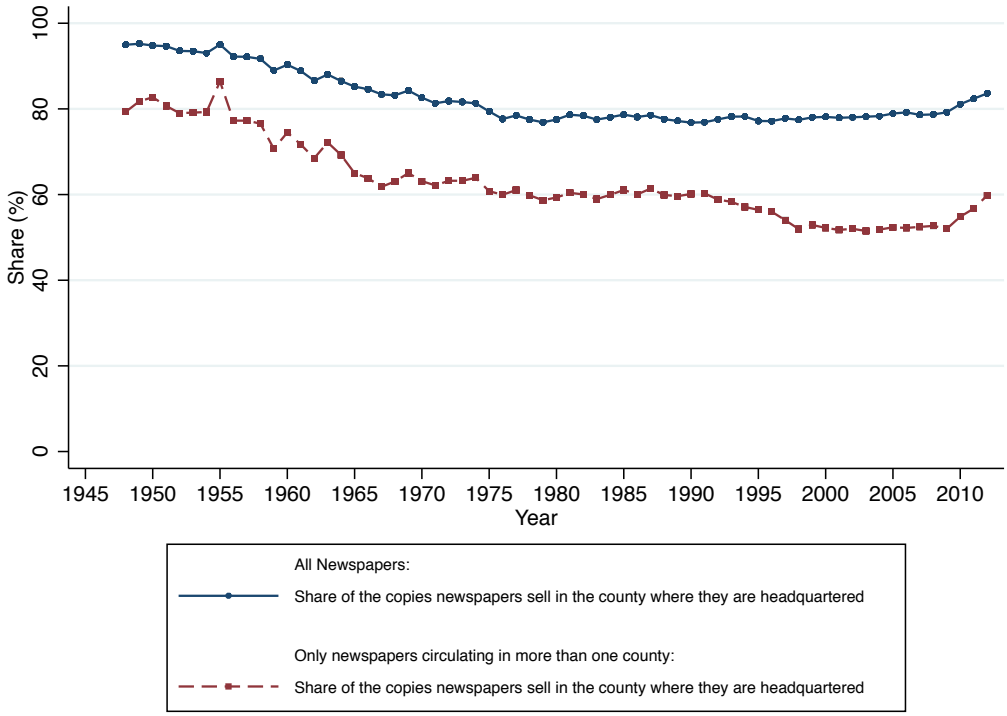
Notes: The data was constructed by the author using various sources described in details in this Appendix.

Figure B.2: Newspapers Circulating in More than One County



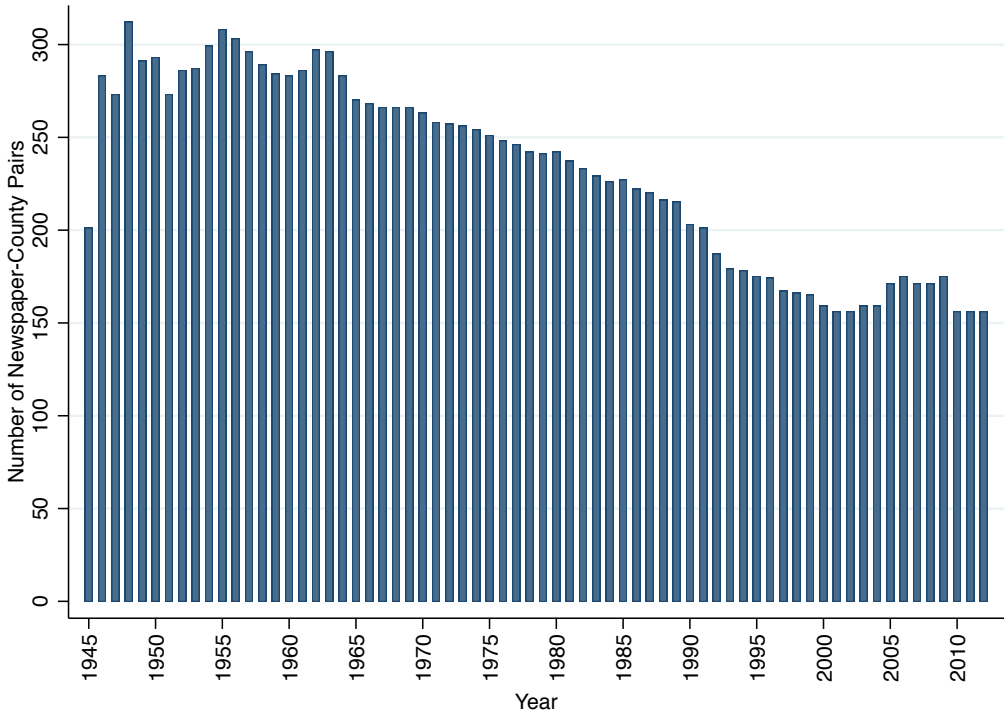
Notes: The data was constructed by the author using various sources described in details in this Appendix.

Figure B.3: Average Number of Counties across which Newspapers Circulating in More than one County Circulate



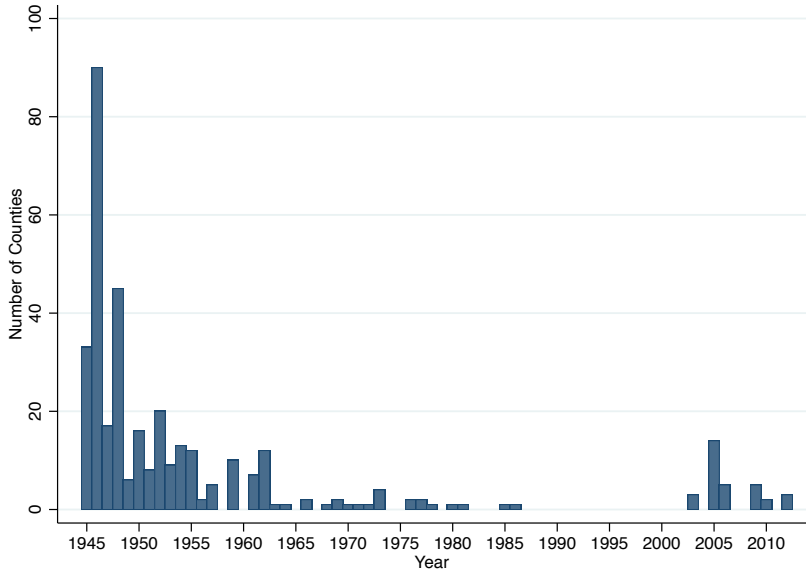
Notes: The data was constructed by the author using various sources described in details in this Appendix.

Figure B.4: Share of their Copies Newspapers Sell in the Counties in which they are Headquartered

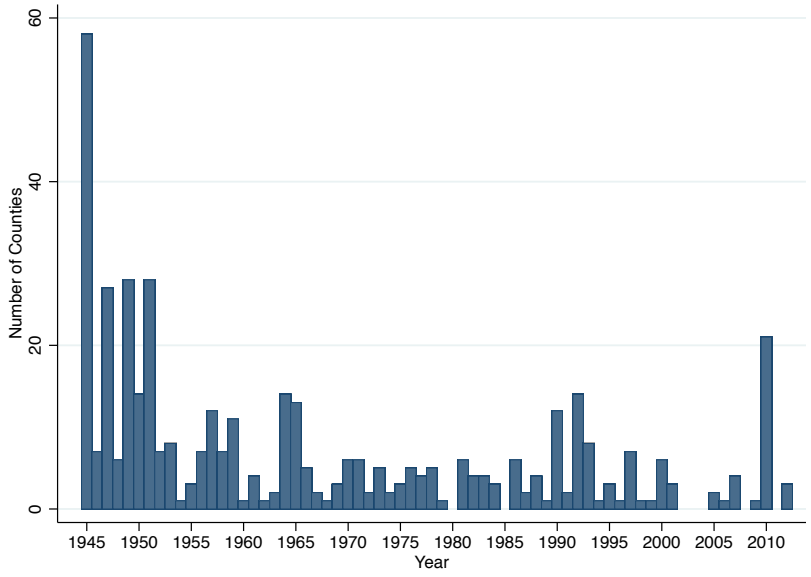


Notes: The data was constructed by the author using various sources described in details in this Appendix.

Figure B.5: Total Number of Newspaper-County Pairs by Year in France



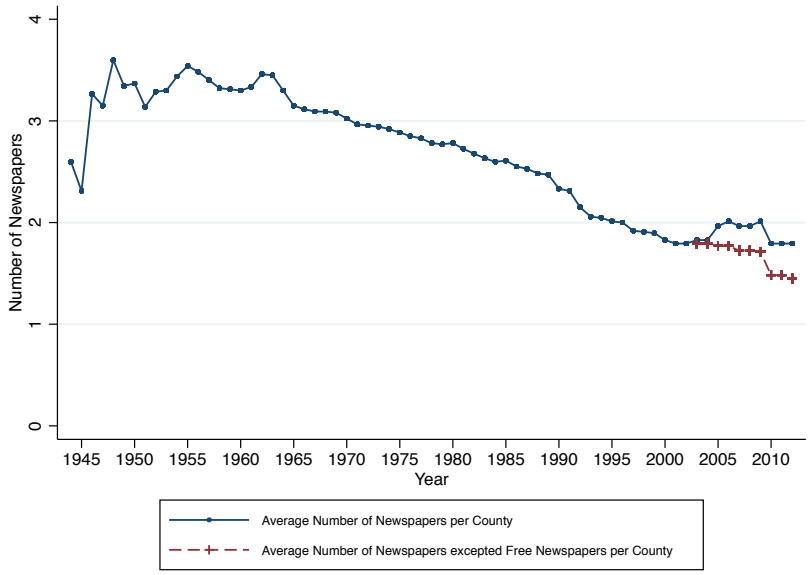
(a) Number of Counties with Net Entry



(b) Number of Counties with Net Exit

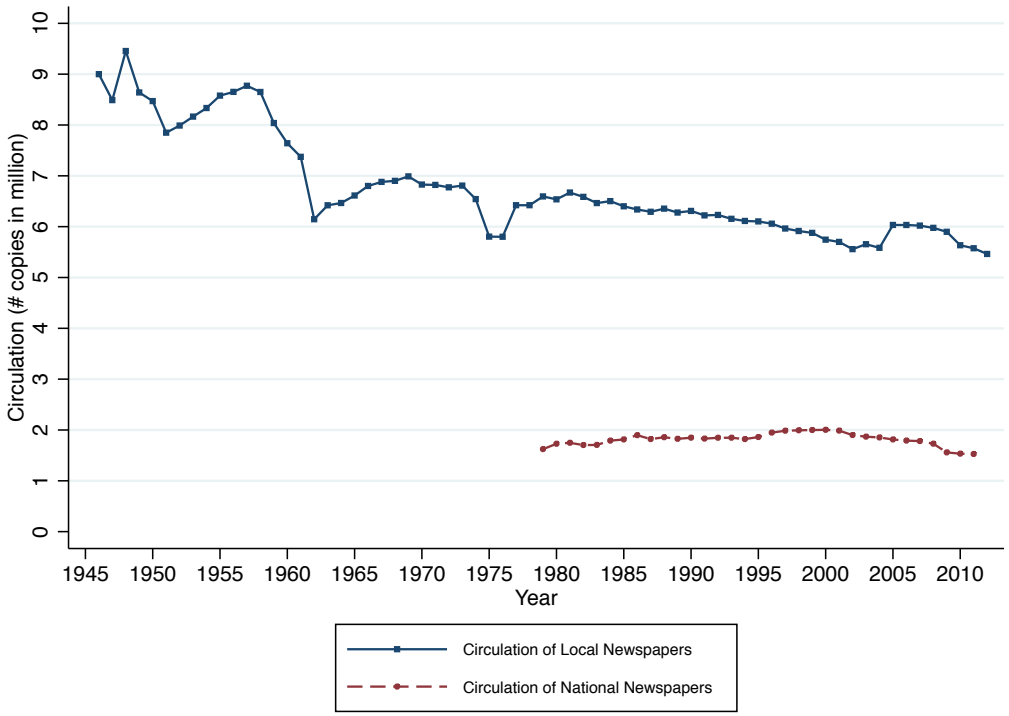
Notes: The figure shows for each year the number of counties with net newspaper entry (upper figure B.6a) and the number of counties with net newspaper exit (bottom figure B.6b). The data was constructed by the author using various sources described in details in this Appendix.

Figure B.6: Number of Counties with Net Newspaper Entry / Net Newspaper Exit by Year



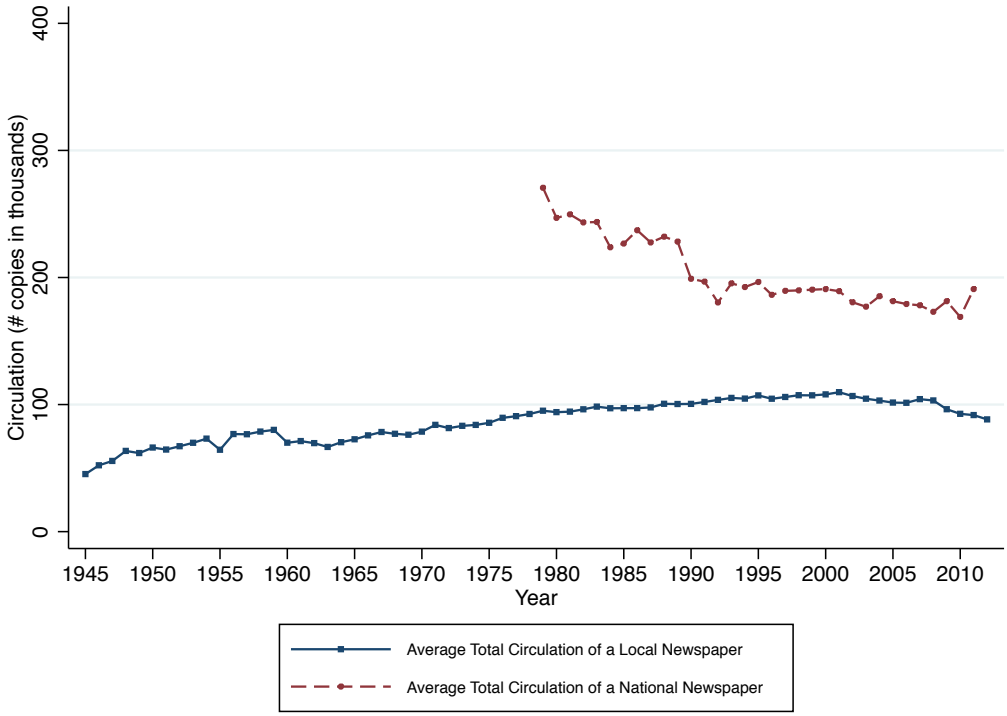
Notes: The data was constructed by the author using various sources described in details in this Appendix.

Figure B.7: Average Number of Daily Newspapers in a County by Year



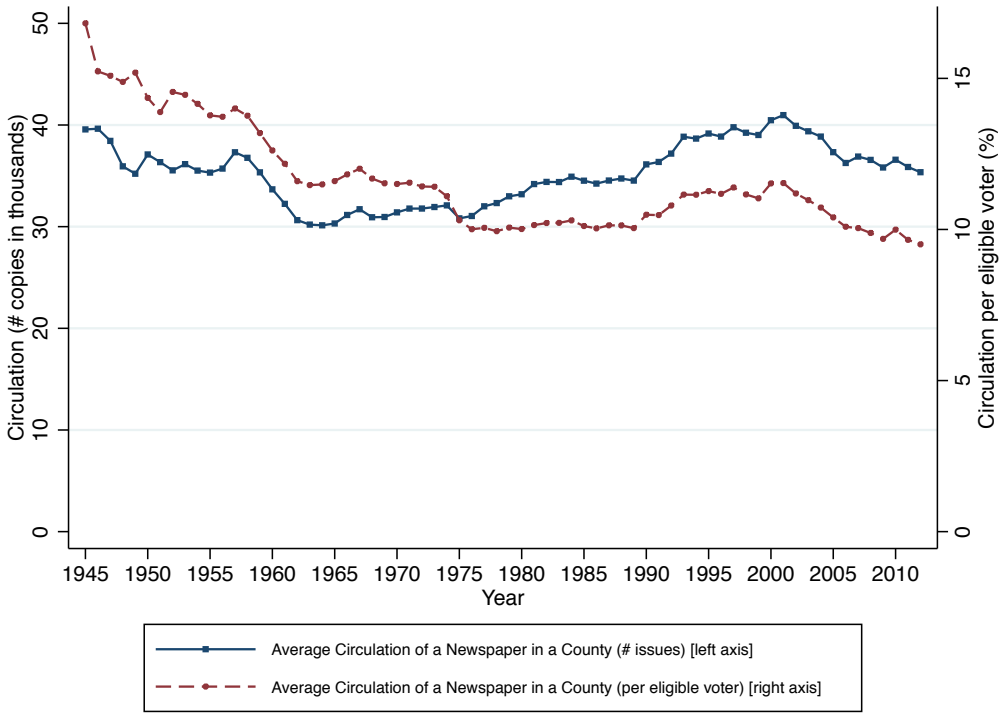
Notes: The figure was constructed by the author using the circulation data described in details in this Appendix.

Figure B.8: Aggregate Circulation, Local and National Newspapers



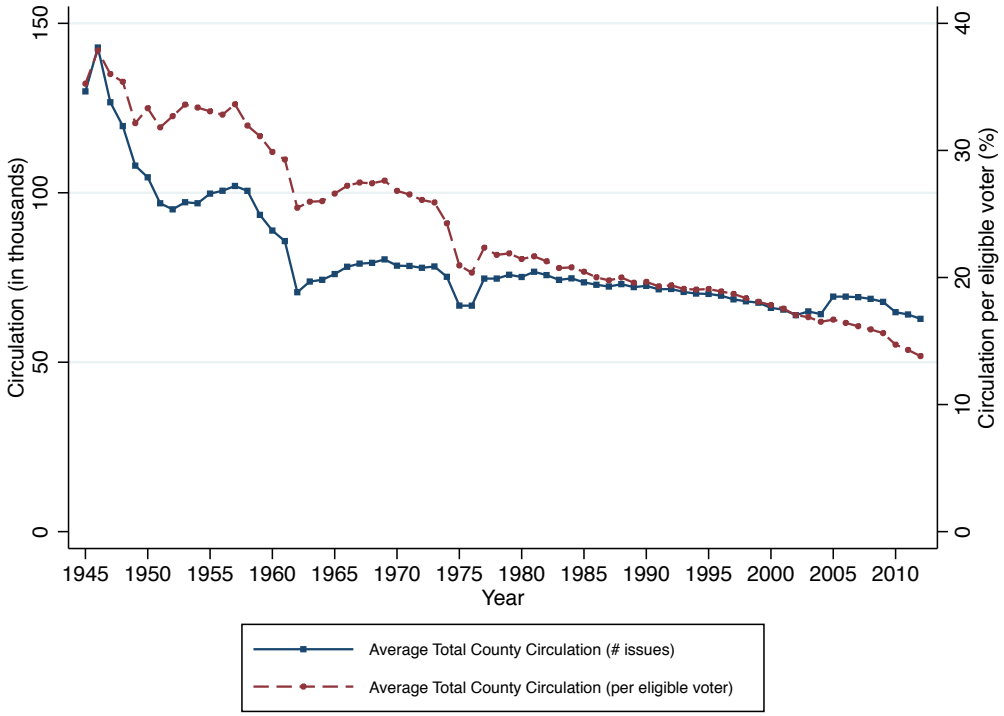
Notes: The figure was constructed by the author using the circulation data described in details in this Appendix.

Figure B.9: Total Circulation of a Newspaper, Local and National Newspapers (Average)



Notes: The figure was constructed by the author using the circulation data described in details in this Appendix.

Figure B.10: Circulation of a Local Newspaper in a County (Average)



Notes: The figure was constructed by the author using the circulation data described in details in this Appendix.

Figure B.11: Total County Circulation (Average)

C Additional Summary Statistics

Table C.1: Descriptive Statitics on Incumbent Newspapers' Revenues, Expenses and Number of Employees the Year before an Entry

	Entry
	mean/sd
Profit	-501
	(5,783)
Total Revenues	77,662
	(37,603)
Sales Revenues	43,552
	(23,267)
Ad Revenues	32,648
	(13,876)
Total Expenses	78,140
	(40,893)
Labor Expenses (Payroll)	33,019
	(17,713)
Intermediate Goods Expenses (Inputs)	41,956
	(23,684)
Number of Employees	508
	(271)

Notes: All variables (excepted the number of employees) are in (constant 2009) thousand euros. Time period is 1960-2012. The table presents the average and the standard deviations (between parentheses) of the variables.

Table C.2: Low- vs. High- Heterogeneity Counties' Characteristics

	(1)		
	High Heterogeneity	Low Heterogeneity	Diff/se
Education			
Elementary primary education (%)	0.57	0.59	-0.02***
			(0.01)
Secondary education (%)	0.33	0.32	0.01**
			(0.00)
Higher (post-secondary) education (%)	0.10	0.09	0.01***
			(0.00)
Socio-Economic Group			
Farmers (%)	0.09	0.13	-0.04***
			(0.00)
Artisans, shopkeepers and company managers (%)	0.09	0.08	0.01***
			(0.00)
Senior executives and knowledge workers (%)	0.07	0.06	0.01***
			(0.00)
Intermediate occupations (%)	0.17	0.16	0.01***
			(0.00)
Employees (%)	0.25	0.23	0.02***
			(0.00)
Laborers (%)	0.33	0.34	-0.01***
			(0.00)
Age			
Below 20 years old (%)	0.28	0.29	-0.01***
			(0.00)
Between 20 and 40 years old (%)	0.26	0.26	0.01***
			(0.00)
Between 40 and 60 years old (%)	0.24	0.24	0.00*
			(0.00)
Above 60 years old (%)	0.21	0.21	0.00
			(0.00)
Total Population (100,000)	5.04	5.27	-0.22
			(0.11)
Newspapers			
Number of Newspapers (1945-2012)	2.73	2.66	0.06
			(0.04)
Number of Newspapers (1960-2012)	2.50	2.49	0.01
			(0.04)
Observations	5866		

Notes: * p<0.10, ** p<0.05, *** p<0.01. The table compares the characteristics of counties with high and low heterogeneity. Column 1 presents the results for counties with high heterogeneity. Column 2 presents the results for counties with low heterogeneity. In Column 3 I perform a t-test on the equality of means (standard errors in parenthesis).

Table C.3: Summary Statitics of Newspapers' Readers (2006)

	French Population	**Local Daily Newspapers Readers**	**Local Daily Newspapers**	**National Daily Newspapers**
	Outside Paris	Outside Paris	**Readers**	**Readers**
Education				
Elementary primary education (%)	32.53	14.65	14.32	5.92
Secondary education (%)	47.21	59.34	59.21	45.90
Higher (post-secondary) education (%)	20.26	25.76	26.22	48.08
Socio-economic groups				
Farmers (%)	2.35	4.01	3.58	0.54
Artisans, shopkeepes and company managers (%)	6.26	6.21	6.21	4.92
Senior executives and knowledge workers (%)	11.57	11.37	11.46	27.82
Intermediate occupations (%)	23.19	22.78	23.03	26.52
Employees (%)	29.64	27.74	28.73	22.23
Laborers (%)	26.99	27.89	26.98	17.97
Age				
Above 60 years old (%)	30.91	38.04	36.72	27.15

Notes: The table gives summary statistics for newspaper readers' characteristics in 2006. Column 1 presents the distribution of education degrees, socio-economic groups and age in all French counties except the Paris area. Column 2 presents local daily newspaper readers' characteristics outside the Paris area, while column 3 presents these characteristics including the Paris area. Finally, column 4 presents these values for national daily newspapers' readers.

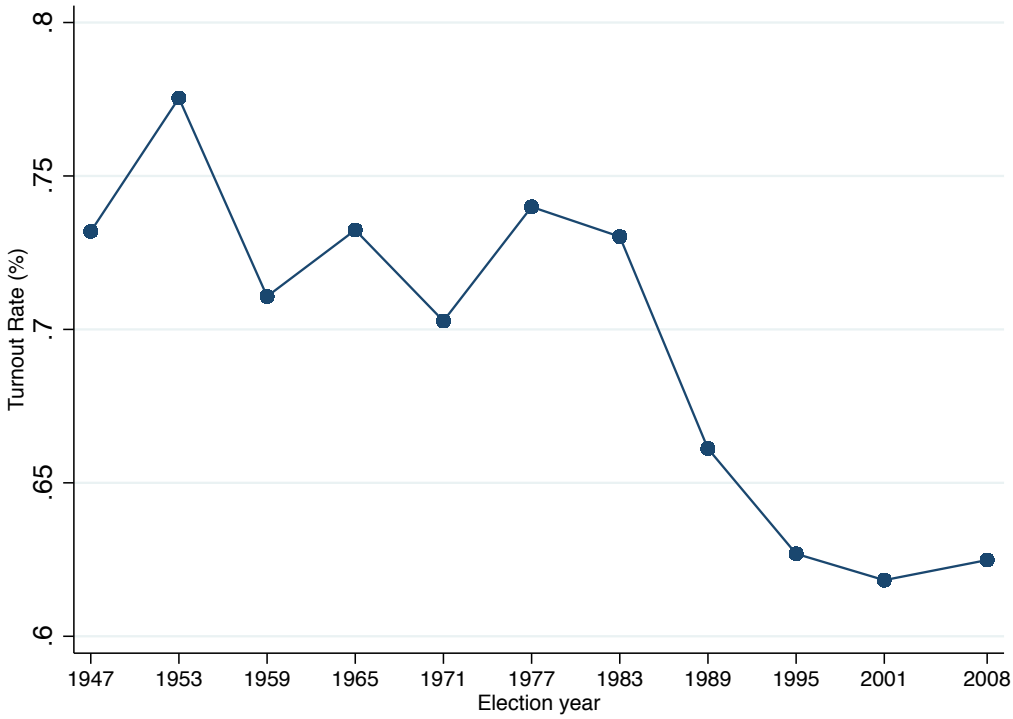


Figure C.1: Turnout Rate at Local Elections (Average)

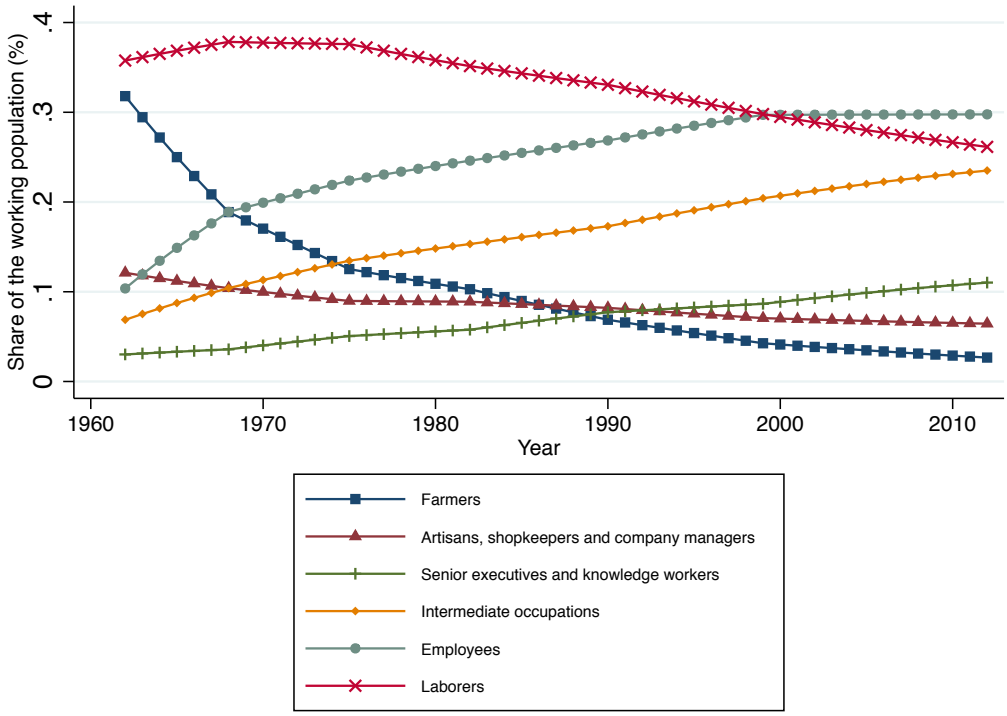


Figure C.2: Socio-Economic Composition of France, 1962-2010

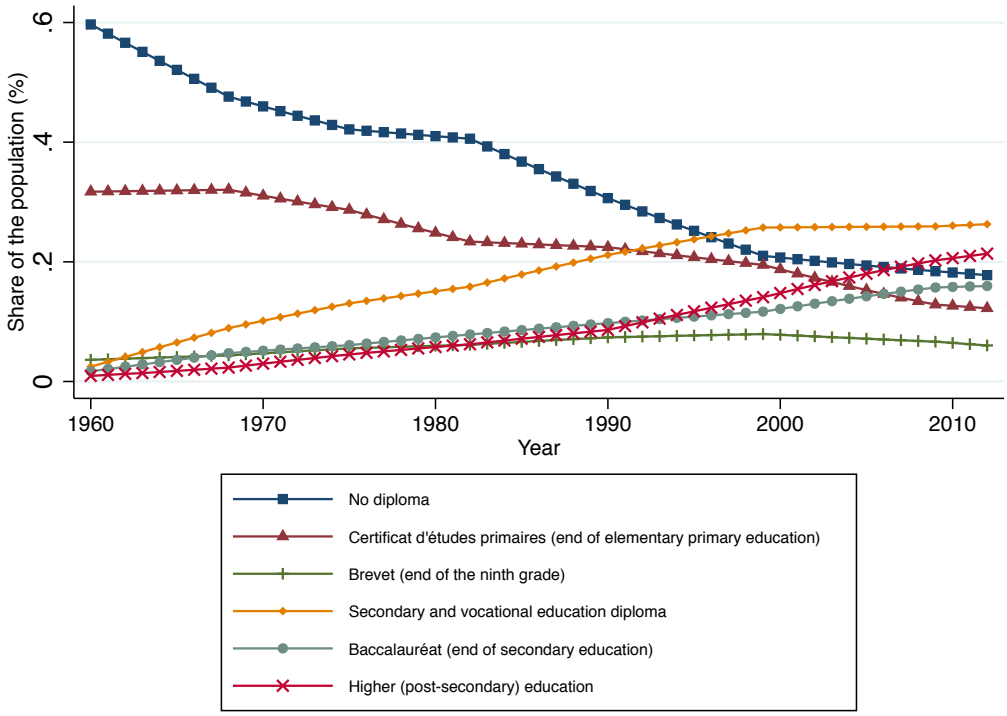


Figure C.3: Educational Attainment in France, 1962-2010

D Additional Results

D.1 Newspapers' Entry Decision

In this section, I provide evidence that, on the one hand, the market size is a good predictor of the number of active newspapers, and that on the other hand, newspapers move in where there is a trending population.

My estimating equation is:

$$y_{ct} = \alpha + \beta_1 \text{ population}_{ct} + \beta_2 \text{ population growth}_{ct} + \beta_3 \text{ population density}_{ct} + \mu_t + \varepsilon_{ct} \quad (1)$$

where c indexes counties, t indexes years and μ_t is a year fixed effect. Table D.1 presents the results of the estimation. y_{ct}, the dependent variable, is alternatively the number of newspapers in county c and year t (columns 1 to 5); an indicator variable equal to one when a newspaper enters in county c and year t and to zero otherwise (columns 6 to 9); and an indicator variable equal to one when a newspaper *owner* enters in county c and year t and to zero otherwise (columns 10 to 13). The independent variables are population (above 20 years old), population growth, and population density. I control for population density because delivery costs may be lower in densely populated areas and thus the number of newspapers may be higher in these areas. As expected given existing empirical evidence (see e.g. Berry, 1992), I find that the number of newspapers in a county is strongly correlated with the county population (column 1). A one-standard deviation increase in population yields a 0.24 standard deviation increase in the number of newspapers. This positive correlation is robust to controlling for the number of newspapers present in the county in 1950 (at the end of the postwar adjustment period in the newspaper industry described below) even if its magnitude is halved (column 5).

Given the latent variable model – newspapers move in when there is a growing population – the entry decision should be correlated with population growth. It is indeed the case: whether I control or not for population, I find that population growth is positively and significantly correlated with the entry decision of newspapers (columns 6 and 9). Moreover, once I control for population growth, population per se has no statistically significant impact on the entry decision (column 9). This finding holds whether I consider all entries (columns 6 to 9) or I reduce the set of entries to episodes where not only a new newspaper but also a new newspaper *owner* enters a county (columns 10 to 13). The magnitude of the positive correlation between the entry decision and population growth is higher when I impose this restriction. Importantly, all my empirical results are robust to controlling or not for population and population growth.

Table D.1: The Impact of Population on the Number of Newspapers and Newspapers' Entry Decision

	Number of Newspapers					Entry Decision (Newpaper)				Entry Decision (Owner)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Population (in million)	1.17***				0.58***	0.04***			-0.01	0.05***			0.02
	(0.06)				(0.12)	(0.01)			(0.01)	(0.01)			(0.02)
Population Growth		-0.53			1.64		0.94**		0.60**		1.34***		0.89**
		(4.01)			(3.99)		(0.43)		(0.25)		(0.45)		(0.35)
Population Density (in thousand)			3.94***		0.50			0.13***	0.05			0.17***	0.09*
			(0.21)		(0.41)			(0.04)	(0.04)			(0.04)	(0.05)
Number of Newspapers in 1950				0.25***	0.22***								
				(0.01)	(0.01)								
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-sq	0.21	0.16	0.21	0.30	0.31	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.06
Observations	4,611	4,524	4,611	4,611	4,524	4,611	4,524	4,611	4,524	4,611	4,524	4,611	4,524
Mean DepVar	2.50	2.48	2.50	2.50	2.48								

Notes: * p<0.10, ** p<0.05, *** p<0.01. Standard errors in parentheses are robust. Time period is 1960-2012. Models are estimated using OLS estimations. In columns 1 to 5, the dependent variable is the number of newspapers in a county. In columns 6 to 10, the dependent variable is an indicator variable equal to one when a new newspaper enters in a county and to zero otherwise. In columns 11 to 15, the dependent variable is an indicator variable equal to one when a new newspaper *owner* enters in a county and to zero otherwise. Variables are described in more details in the text.

D.2 Other Additional Results' Tables

Table D.2: The Effect of Entry on Total County's Revenues, Expenses and Number of Employees
(county-level analysis)

		Revenues			Expenses					
	(1) Circulation	(2) Profit	(3) Total	(4) Sales	(5) Ad	(6) Total	(7) Inputs	(8) Payroll	(9) Employees	(10) Price
$\mathbf{1}entry^{j=-2}$	-0.01	-446.44	-467.66	-1,839.47	-418.86	-860.09	-464.68	-66.70	0.42	-0.05
	(0.01)	(793.52)	(3,900.41)	(2,043.51)	(1,298.88)	(3,301.03)	(1,564.39)	(1,792.70)	(35.57)	(0.04)
$\mathbf{1}entry^{j=-1}$	-0.00	-1,130.62	-3.43	-1,313.31	-62.24	486.28	581.82	528.75	-2.54	-0.10***
	(0.01)	(913.78)	(4,779.80)	(2,718.94)	(1,825.14)	(4,410.15)	(1,714.63)	(2,781.61)	(47.18)	(0.04)
$\mathbf{1}entry^{j=0}$	0.03***	-1,301.82	-1,019.24	-3,414.32	-1,444.38	-179.83	45.30	188.51	-15.75	-0.38***
	(0.01)	(1,018.64)	(5,366.41)	(3,472.78)	(2,253.34)	(4,817.97)	(2,018.05)	(2,943.49)	(52.53)	(0.05)
$\mathbf{1}entry^{j=1}$	0.03***	-1,663.72	-2,288.85	-3,633.35	-145.78	-912.76	-314.77	-107.70	-15.14	-0.37***
	(0.01)	(1,279.24)	(5,703.90)	(3,385.05)	(2,051.28)	(5,151.08)	(2,317.75)	(3,056.30)	(56.49)	(0.05)
$\mathbf{1}entry^{j=2}$	0.04***	-953.10	-926.05	-3,252.49	533.52	119.44	351.63	111.46	-4.21	-0.37***
	(0.01)	(1,273.36)	(6,236.96)	(3,571.58)	(2,283.18)	(5,875.29)	(2,355.80)	(3,509.27)	(67.00)	(0.05)
$\mathbf{1}entry^{j=3}$	0.03**	-668.37	-3,662.56	-4,167.73	-366.09	-2,518.18	-719.29	-1,712.70	-31.86	-0.36***
	(0.01)	(660.39)	(6,599.04)	(4,084.77)	(2,498.59)	(5,829.31)	(3,050.30)	(3,200.53)	(67.82)	(0.06)
$\mathbf{1}entry^{j=4}$	0.04***	-1,456.06	-6,596.25	-3,989.27	-833.89	-5,823.90	-2,904.78	-3,136.24	-54.60	-0.38***
	(0.01)	(912.60)	(6,942.57)	(4,214.29)	(2,629.31)	(6,680.46)	(3,466.58)	(3,725.81)	(81.63)	(0.07)
$\mathbf{1}entry^{j\geq 5}$	0.03*	-1,904.40*	-5,890.58	-1,594.81	-437.28	-3,723.67	-617.94	-2,399.86	-85.09	-0.35***
	(0.01)	(1,009.63)	(5,752.31)	(4,271.38)	(2,326.70)	(5,353.36)	(3,725.70)	(3,008.95)	(58.88)	(0.08)
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-sq	0.93	0.51	0.94	0.94	0.93	0.95	0.94	0.95	0.93	0.73
Observations	2,523	1,965	1,959	1,608	1,608	1,962	1,965	1,963	2,073	2,449
Clusters	87	78	78	78	78	78	78	78	87	87
Mean DepVar	0.18	467.23	29,151.63	17,045.63	11,737.73	28,742.31	15,032.59	12,311.62	216.31	0.80

Notes: Standard errors in parentheses are clustered by county. Time period is 1960-2012. Models are estimated using OLS estimations. All variables (excepted employees) are in thousand (constant 2009) euros. Price is in (constant 2009) euros. Models include year and county fixed effects and demographic controls. The demographic controls are the share of the population with higher (post-secondary) education and the share of working population between 15 and 64 year old which is senior executive or knowledge worker in county c and year t. Variables are described in more details in the text.

Table D.3: The Effect of Entry on Newspapers' Revenues, Expenses and Number of Employees
(newspaper-level analysis)

			Revenues			Expenses			
	(1) Circulation	(2) Profit	(3) Total	(4) Sales	(5) Ad	(6) Total	(7) Inputs	(8) Payroll	(9) Employees
Pre Entry									
(t-2, t-1)	-0.00	-492.84	-714.39	-234.60	326.04	854.32	385.18	726.23	-1.52
	(0.01)	(553.58)	(2,555.01)	(1,284.58)	(823.33)	(2,494.45)	(1,044.03)	(1,457.69)	(20.43)
Short-run									
Impact of Entry									
(t, t+1, t+2)	-0.01*	-729.13	-3,292.80	-2,324.76	-440.92	-1,584.51	-897.29	-404.16	-29.19
	(0.01)	(717.90)	(3,168.31)	(1,828.42)	(1,150.52)	(2,979.44)	(1,295.75)	(1,742.11)	(23.59)
Long-run									
Impact of Entry									
(t+3, onwards)	-0.02**	-626.41	-6,344.07*	-4,917.24**	-2,278.90**	-4,934.31	-2,344.45	-2,323.45	-63.14**
	(0.01)	(488.73)	(3,317.26)	(2,026.22)	(1,135.70)	(2,982.40)	(1,717.13)	(1,580.93)	(25.17)
County FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
News FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-sq	0.65	0.47	0.81	0.83	0.80	0.82	0.84	0.77	0.77
Observations	5,158	3,388	3,367	2,624	2,614	3,384	3,390	3,388	3,598
Clusters	87	78	78	78	78	78	78	78	87
Mean DepVar	0.09	270.99	16,961.10	10,445.64	7,220.46	16,664.42	8,713.58	7,133.33	124.63

Notes: Standard errors in parentheses are clustered by county. Time period is 1984-2009. Models are estimated using OLS estimations. All variables (excepted employees and price) are in thousand (constant 2009) euros. Price is in (constant 2009) euros. Models include year and county fixed effects and demographic controls. The demographic controls are the share of the population with higher (post-secondary) education and the share of working population between 15 and 64 year old which is senior executive or knowledge worker in county c and year t. Variables are described in more details in the text.

Table D.4: The Effect of the Number of Newspapers on Newspapers' Content

(a) **Share of Articles on Hard News**

	Share of Articles on Hard News in the Newspaper					
	(1)	(2)	(3)	(4)	(5)	(6)
Number of newspapers	-3.55***	-2.77*	-3.68***	-3.09**	-2.10**	-3.77**
	(0.73)	(1.54)	(0.77)	(1.27)	(1.01)	(1.70)
Number of Newspapers						
* Low Heterogeneity		-2.96		-2.36		5.10*
		(1.96)		(1.90)		(2.73)
Low Heterogeneity		7.66*		6.23		-27.48
		(4.15)		(4.06)		(16.61)
Year FE	No	No	Yes	Yes	Yes	Yes
Controls	No	No	No	No	Yes	Yes
R-sq	0.06	0.07	0.12	0.13	0.21	0.22
Observations	25,745	25,745	25,745	25,745	25,745	25,745
Clusters (County-Year)	88	88	88	88	88	88
Mean DepVar	33.73	33.73	33.73	33.73	33.73	33.73

(b) **Number of Articles on Hard News**

	Number of Articles on Hard News in the Newspaper					
	(1)	(2)	(3)	(4)	(5)	(6)
Number of newspapers	-64.6***	-79.3***	-61.0***	-80.0***	-50.1***	-82.2***
	(8.6)	(20.4)	(8.1)	(16.3)	(7.8)	(12.8)
Number of Newspapers						
* Low Heterogeneity		-6.4		6.3		17.8
		(21.0)		(17.5)		(13.6)
Low Heterogeneity		56.8		24.6		37.8
		(38.3)		(33.9)		(24.5)
Year FE	No	No	Yes	Yes	Yes	Yes
Controls	No	No	No	No	Yes	Yes
R-sq	0.25	0.29	0.37	0.40	0.48	0.55
Observations	25,575	25,575	25,575	25,575	25,575	25,575
Clusters (County-Year)	92	92	92	92	92	92
Mean DepVar	103.1	103.1	103.1	103.1	103.1	103.1

(c) **Number of Articles on Soft News**

	Number of Articles on Soft News in the Newspaper					
	(1)	(2)	(3)	(4)	(5)	(6)
Number of newspapers	-111.3***	-116.5***	-107.5***	-117.9***	-110.3***	-127.1***
	(14.6)	(30.6)	(13.8)	(27.0)	(15.7)	(21.3)
Number of Newspapers						
* Low Heterogeneity		-77.1**		-64.0**		-44.0*
		(32.0)		(27.7)		(23.8)
Low Heterogeneity		264.2***		230.1***		231.2***
		(58.3)		(52.6)		(45.4)
Year FE	No	No	Yes	Yes	Yes	Yes
Controls	No	No	No	No	Yes	Yes
R-sq	0.27	0.42	0.35	0.47	0.47	0.62
Observations	25,696	25,696	25,696	25,696	25,696	25,696
Clusters (County-Year)	92	92	92	92	92	92
Mean DepVar	197.3	197.3	197.3	197.3	197.3	197.3

Notes: * p<0.10, ** p<0.05, *** p<0.01. Standard errors in parentheses are clustered by county*year. Time period is 2005-2012. In the upper table (Table D.4a), the dependent variable is the share of articles on hard news which is defined as the number of articles on agriculture, economics, education, environnement, international or politics, divided by the total number of articles classified by topics. In the middle table (Table D.4b), the dependent variable is the number of articles on hard news. In the bottom table (Table D.4c) the dependent variable is the number of articles on soft news. The controls include demographic controls (the share of the population with higher (post-secondary) education, the share of the working population between 15 and 64 year old which is senior executive or knowledge worker and the total population in county c and year t) and the demographic controls interacted with the heterogeneity indicator variable. Variables are described in more details in the text.

Table D.5: The Effect of the Number of Newspapers on Newspapers' Specialization

	Newspaper Specialization					
	(1)	(2)	(3)	(4)	(5)	(6)
Number of newspapers	0.053***	0.071***	0.052***	0.078***	0.050***	0.058***
	(0.012)	(0.014)	(0.010)	(0.011)	(0.009)	(0.009)
Number of Newspapers						
* Low Political Heterogeneity		-0.054***		-0.063***		-0.047***
		(0.015)		(0.012)		(0.017)
Low Political Heterogeneity		0.073***		0.099***		0.245
		(0.027)		(0.024)		(0.169)
Year FE	No	No	Yes	Yes	Yes	Yes
Controls	No	No	No	No	Yes	Yes
R-sq	0.10	0.13	0.11	0.15	0.17	0.17
Observations	28,180	28,180	28,180	28,180	28,180	28,180
Clusters (County-Year)	94	94	94	94	94	94
Mean DepVar	0.173	0.173	0.173	0.173	0.173	0.173

Notes: * p<0.10, ** p<0.05, *** p<0.01. Standard errors in parentheses are clustered by county-year. Time period is 2005-2012. The dependent variable is newspaper specialization computed alternatively on a daily basis. "Newspaper specialization" is an Herfindahl index of newspaper differentation. This index is equal to the sum of the squares of the shares of the different newpaper topics in each newspaper issue: agriculture, culture, economics, education, environnement, health, international, leisure activities, movies, "news in brief", politics religion and sports. The controls include demographic controls (the share of the population with higher (post-secondary) education, the share of working population between 15 and 64 year old which is senior executive or knowledge worker) and the total population in county c and year t), and demographic controls interacted with the heterogeneity dummy. Variables are described in more details in the text.

E Proofs of the Theoretical Results

There is a continuum of consumers of mass 1 and two profit-maximizing newspapers under duopoly, newspaper 1 and newspaper 2 (only one newspaper under monopoly, newspaper m). I study the production choices (price and quality) of newspapers under monopoly and duopoly. The analysis is based on a two-stage non-cooperative sequential game. Newspapers first choose simultaneously their quality and then compete simultaneously in price.

E.1 Model Set-Up: Consumers

Consumers choose whether to buy a newspaper: $\alpha \in A = \{B, NB\}$ (B: buy; NB: do not buy). I assume that there is unit-demand: consumers cannot buy more than one unit of the newspaper. Moreover, in order to keep the model tractable, I assume that there is no multi-homing: when there are two newspapers, consumers can only buy one of the two. They cannot buy both newspapers at the same time.

Consumers differ in their willingness-to-pay for quality (vertical differentiation). Consumer i maximizes the following utility function:

$$V_i = \begin{cases} \gamma_i n_j - p_j, & \text{if she buys newspaper j} \\ 0, & \text{otherwise} \end{cases}$$

where p_j is the price of newspaper j, n_j is its quality and γ_i is consumer i's willingness-to-pay for quality. I assume that this taste is uniformly distributed with unit density over the interval $\left[\underline{\gamma}, \overline{\gamma}\right]$: $U \sim \left[\underline{\gamma}, \overline{\gamma}\right]$.

In the monopoly case, consumer i buys newspaper j iff

$$\gamma_i n_j - p_j \geq 0 \tag{2}$$

In the duopoly case, newspaper j's ($j = 1, 2$) demand, D_j, is defined as the set of consumer types who get greater surplus from its quality-price offering than from the other firm's quality-price offering or the outside option:

$$D_j = \left\{\gamma \sim U\left[\underline{\gamma}, \overline{\gamma}\right] : \gamma n_j - p_j \geq \gamma n_z - p_z \ \forall z = 0, 1, 2\right\} \tag{3}$$

Higher types (agents with a high γ) more strongly prefer higher-quality newspapers since they get an higher marginal benefit. They thus choose the higher-quality newspaper under duopoly. Middle types choose the lower-quality newspaper. Finally, if the market is not covered, lower types choose not to buy a newspaper. Importantly here I am not assuming market coverage ex ante. The extent of consumers' heterogeneity – measured by the ratio $\frac{\overline{\gamma}}{\underline{\gamma}}$ – determines whether the market is actually covered or not. Market coverage is an endogenous

outcome of the quality game, as it will appear clearly below.

E.2 Model Set-Up: Newspapers

Newspapers maximize their profits by choosing their price p and their quality n:

$$\max_{(n_j,p_j)} \left[p_j D_j \left(\mathbf{n}, \mathbf{p} \right) - \frac{c n_j^2}{2} - S \right] \tag{4}$$

where S is the fixed cost for setting up a newspaper.[13]

The production cost is a quadratic function of the quality n and is given by $\frac{cn_j^2}{2}$. (The production cost increases with quality at a faster rate than any agent's willingness to pay for quality.)

I assume that the news market is one-sided, i.e. I do not take into account newspaper dependency on ad revenues. I recognize that newspapers derive revenue from both readers and advertisers. Implicitly, I am considering advertising revenue as a per-reader proportional subsidy.

E.3 Timing of the Game

The game proceeds as follows:

1. Newspapers simultaneously choose their quality n.

2. Newspapers simultaneously choose their price p.

This time ordering is standard. What is important is that newspapers first compete simultaneously in quality before competing simultaneously in price. This allows newspapers to differentiate in quality in order to soften price competition. I solve this game by backward induction. I only consider pure-strategy equilibria.

E.4 Solving the Model

I compare the production choices of newspapers under monopoly and under duopoly. I do not consider the cases with more than two newspapers. That is, I assume that the set-up cost is sufficiently large ($s > \underline{S}$) so that a third entrant would suffer losses. Whether monopoly or duopoly prevails in equilibrium also depends on S. One can easily show that if S is sufficiently small ($\underline{S} < S < \overline{S}$), the second entrant can make positive profits, so that there is a duopoly. Conversely, for S sufficiently large ($S > \overline{S}$), no entry is profitable, so there is a monopoly.

[13] This includes the annual costs that must be incurred in order to set up a newspaper (office space, equipment, printing press, etc.) and to maintain a reputation as a media outlet (e.g. one needs to have minimal number of journalists covering core issues, etc.).

E.4.1 Monopoly

Under monopoly, agent i buys the newspaper iff

$$\gamma_i \geqslant \frac{p_m}{n_m}$$

The marginal consumer type is thus $\widehat{\gamma}^M = \frac{p_m}{n_m}$ provided that $\widehat{\gamma}^M \in \left[\underline{\gamma}, \overline{\gamma}\right]$ (non-covered market case); otherwise the demand for the monopoly is 0 if $\widehat{\gamma} > \overline{\gamma}$ and 1 if $\widehat{\gamma} < \underline{\gamma}$ (covered marked case).[14]

Thee market configurations may arise at the price equilibrium. They are characterized by the following demand function.

$$D_m(p_m, n_m) = \begin{cases} 0 & \text{if } \overline{\gamma} < \frac{p_m}{n_m} \\ 1 - \frac{\frac{p_m}{n_m} - \underline{\gamma}}{\overline{\gamma} - \underline{\gamma}} & \text{if } \underline{\gamma} < \frac{p_m}{n_m} \leq \overline{\gamma} \quad \text{(NCM)} \\ 1 & \text{if } \underline{\gamma} \geq \frac{p_m}{n_m} \quad \text{(CM)} \end{cases}$$

Figure E.1 shows how demand varies with the ratio $\frac{p_m}{n_m}$ for $\underline{\gamma} = 1$, i.e. $\frac{\overline{\gamma}}{\underline{\gamma}} = 2$. In Figure E.2 it appears clearly that the lower heterogeneity ($\frac{\overline{\gamma}}{\underline{\gamma}} = 2$ for the red continuous line, and 1.5 for the blue dashed line), the higher the demand for a given ratio $\frac{p_m}{n_m}$.

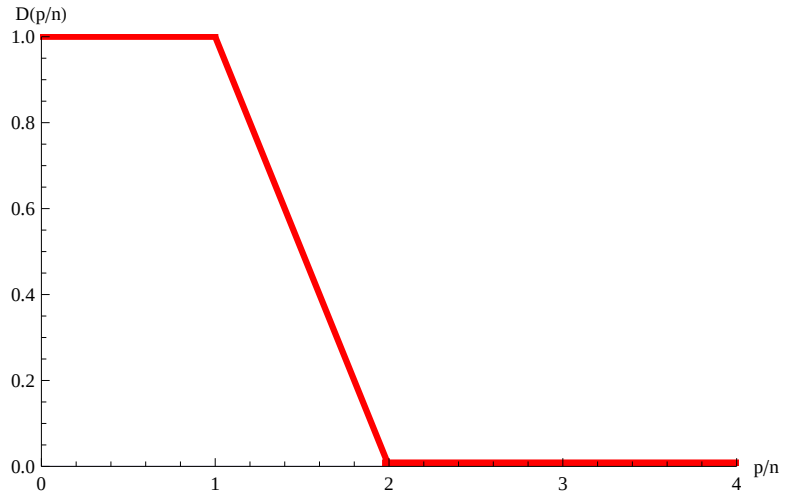


Figure E.1: Demand Function of the Monopoly

The monopoly maximizes its profits according to equation (4). The Nash equilibrium is

[14] For the remainder of the proof and to save on space I will use the initials NCM for non-covered market and CM for covered market.

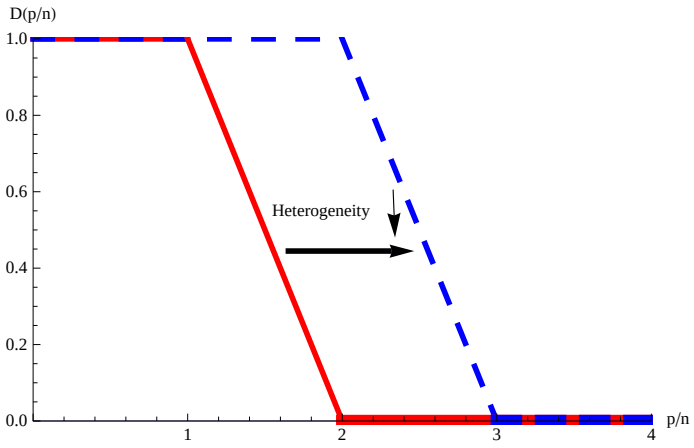


Figure E.2: Demand Function of the Monopoly and Heterogeneity

the price subgame is:

$$p_m^* = \begin{cases} \frac{\overline{\gamma} n_m}{2} & \text{if } \frac{\overline{\gamma}}{\underline{\gamma}} \in [2, \infty[\quad \text{(NCM)} \\ \underline{\gamma} n_m & \text{if } \frac{\overline{\gamma}}{\underline{\gamma}} \in [1, 2[\quad \text{(CM)} \end{cases}$$

Computing the optimal quality n I obtain:

$$n_m^* = \begin{cases} \frac{\overline{\gamma}^2}{4c} & \text{if } \frac{\overline{\gamma}}{\underline{\gamma}} \in [2, \infty[\quad \text{(NCM)} \\ \frac{\underline{\gamma}}{c} & \text{if } \frac{\overline{\gamma}}{\underline{\gamma}} \in [1, 2[\quad \text{(CM)} \end{cases}$$

Proposition 1 (Monopoly Equilibrium) *Depending on the ratio* $\frac{\overline{\gamma}}{\underline{\gamma}}$*, the monopoly equilibrium is characterized by the following price* p_m^**, quality* n_m^**, demand* D_m^* *and profit* Π_m^* *:*

$$\textit{If } \frac{\overline{\gamma}}{\underline{\gamma}} \in [1, 2[\textit{ then } \begin{cases} n_m^* = \frac{\underline{\gamma}}{c} \\ p_m^* = \frac{\underline{\gamma}^2}{c} \\ D_m^* = 1 \\ \Pi_m^* = \frac{\underline{\gamma}^2}{2c} \end{cases} \qquad \textit{If } \frac{\overline{\gamma}}{\underline{\gamma}} \in [2, \infty[\textit{ then } \begin{cases} n_m^* = \frac{\overline{\gamma}^2}{4c} \\ p_m^* = \frac{\overline{\gamma}^3}{8c} \\ D_m^* = \frac{1+\underline{\gamma}}{2} \\ \Pi_m^* = \frac{(1+\underline{\gamma})^4}{32c} \end{cases}$$

Figure E.3 represents the monopoly equilibrium a cost $c = 1$. It appears clearly that for the monopoly profits decrease with heterogeneity.

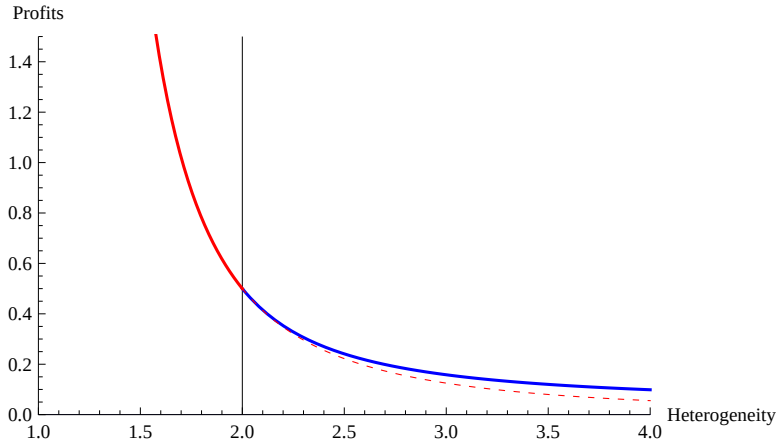


Figure E.3: Monopoly: Profit

E.4.2 Duopoly

The only Nash equilibrium is an asymmetric equilibrium in which one newspaper is of higher quality than the other newspaper. Newspapers always choose to differentiate because differentiation allows them to relax price competition while a symmetric equilibrium yields Bertrand competition. The key point is thus to determine whether the high-quality duopolist is of higher or of lower quality than the monopolist. It depends on the market coverage (the extent of business stealing). Here I do not assume market coverage ex ante and I determine the equilibrium for each market configuration. More precisely, for each market configuration, I first determine the Nash equilibrium in the price subgame taking as fixed n_2 and n_1. I then solve for the Nash equilibrium in the quality subgame.

Price Competition Without loss of generality, I assume that $n_2 > n_1$. The marginal consumer type is $\widehat{\gamma}^D = \frac{p_2 - p_1}{n_2 - n_1}$ provided that $\widehat{\gamma}^D \in \left[\underline{\gamma}, \overline{\gamma}\right]$.

Three market configurations may arise at the price equilibrium. Let consider the demand for newspaper 1. All consumers with a γ such that $\gamma < \widehat{\gamma}^D$ strictly prefer newspaper 1 to newspaper 2. However, they could refrain from buying. Only consumers with a γ such that $\gamma > \frac{p_1}{n_1}$ buy newspaper 1. Hence if $\frac{p_1}{n_1} < \underline{\gamma}$, all consumers with a γ such that $\gamma < \widehat{\gamma}^D$ buy newspaper 1, the market is covered and the demand for newspaper 1 is $\widehat{\gamma}^D - \underline{\gamma}$. On the contrary, if $\frac{p_1}{n_1} > \underline{\gamma}$ the market is not covered and the demand for newspaper 1 is $\widehat{\gamma}^D - \frac{p_1}{n_1}$ since all the consumers with a $\gamma \in \left[\underline{\gamma}, \frac{p_1}{n_1}\right]$ refrain from buying a newspaper. Finally, if $\frac{p_2}{n_2} < \underline{\gamma}$ then the market is preempted by newspaper 2.

The demand functions are as follows[15]:

[15] To simplify the notations I am simply using D_1 for $D_1(p_1, p_2, n_1, n_2)$ and D_2 for $D_2(p_1, p_2, n_1, n_2)$.

$$(D_1, D_2) = \begin{cases} \left(\widehat{\gamma}^D - \frac{p_1}{n_1}, \overline{\gamma} - \widehat{\gamma}^D\right) & \text{if } \underline{\gamma} < \frac{p_1}{n_1} \leq \widehat{\gamma}^D \quad \text{(NCM)} \\ \left(\widehat{\gamma}^D - \underline{\gamma}, \overline{\gamma} - \widehat{\gamma}^D\right) & \text{if } \frac{p_1}{n_1} \leq \underline{\gamma} \leq \frac{p_2}{n_2} \quad \text{(CM)} \\ (0,1) & \text{if } \frac{p_2}{n_2} < \underline{\gamma} \quad \text{(Preempted)} \end{cases}$$

The intuition for the preempted market case is as follows: since $n_2 > n_1$ all agents prefer newspaper 2 to newspaper 1 when $p_1 = p_2$. Newspaper 2 thus benefits from the possibility of preempting the market with a limit price: $p_2 = p_1 + \underline{\gamma}(n_2 - n_1)$. It is easy to show that the market is preemted by newspaper 2 whenever $\frac{\overline{\gamma}}{\underline{\gamma}} \in]1, 2]$. In this case if $n_2 > n_1$ only one newspaper (newspaper 2) is active in the price game.

Nash equilibrium in the price subgame is obtained in two steps. First I compute equilibrium candidates corresponding to each market configuration. Second I identify the parameters constellations for which candidates effectively yield the corresponding market outcome. I identify intervals for the values of $\frac{\overline{\gamma}}{\underline{\gamma}}$ whose bounds depend on (n_1, n_2).

Let first consider price equilibrium. The price equilibrium for the non-covered market case is simply determined by maximizing the profits with respect to the price. For the covered-market case, there are two possible solutions: a corner and an interior solution.

Price equilibrium are as follows:

$$(p_1^*, p_2^*) = \begin{cases} \left(\frac{n_1(n_2-n_1)\overline{\gamma}}{4n_2-n_1}, \frac{2n_2(n_2-n_1)\overline{\gamma}}{4n_2-n_1}\right) & \text{if } \underline{\gamma} < \frac{p_1}{n_1} \leq \widehat{\gamma}^D \quad \text{(NCM)} \\ \left(\underline{\gamma} n_1, \frac{(n_2-n_1)\overline{\gamma}+\underline{\gamma}n_1}{2}\right) & \text{if } \frac{p_1}{n_1} \leq \underline{\gamma} \leq \frac{p_2}{n_2} \quad \text{(CM corner)} \\ \left(\frac{\overline{\gamma}-2\underline{\gamma}}{3}(n_2-n_1), \frac{2\overline{\gamma}-\underline{\gamma}}{3}(n_2-n_1)\right) & \text{if } \frac{p_1}{n_1} \leq \underline{\gamma} \leq \frac{p_2}{n_2} \quad \text{(CM interior)} \end{cases}$$

Given these price equilibrium, it is easy to show that the market is non-covered (NCM) if $\frac{\overline{\gamma}}{\underline{\gamma}} \in \left[\frac{4n_2-n_1}{n_2-n_1}, \infty\right[$; that the market is covered with a corner solution (CM corner) if $\frac{\overline{\gamma}}{\underline{\gamma}} \in \left[\frac{2n_2+n_1}{n_2-n_1}, \frac{4n_2-n_1}{n_2-n_1}\right[$; and that the market is covered with an interior solution (CM interior) if $\frac{\overline{\gamma}}{\underline{\gamma}} \in \left]2, \frac{2n_2+n_1}{n_2-n_1}\right[$.

The Nash equilibrium in prices is thus a function of the degree of population heterogeneity ($\frac{\overline{\gamma}}{\underline{\gamma}}$) and the degree of product differentiation (n_1,n_2). This appears clearly when rearranging the conditions. The market is non covered if $\frac{\overline{\gamma}}{\underline{\gamma}} \in \left[\frac{4n_2-n_1}{n_2-n_1}, \infty\right[\Leftrightarrow n_1 < n_2\frac{\alpha-4}{\alpha-2}$. The market is covered with a corner solution if $\frac{2n_2+n_1}{n_2-n_1} \leq \frac{\overline{\gamma}}{\underline{\gamma}} \Leftrightarrow n_1 < n_2\frac{\alpha-2}{\alpha+1}$.

In Figures E.4 and E.5 I plot the prices as a function of heterogeneity for different degrees of product differentiation (n_1,n_2). The price of newspaper 1 p_1 is given by the continuous line and the price of newspaper 2 p_2 by the dashed line. It appears clearly that the more product

differentiation, the higher the price newspapers charge.

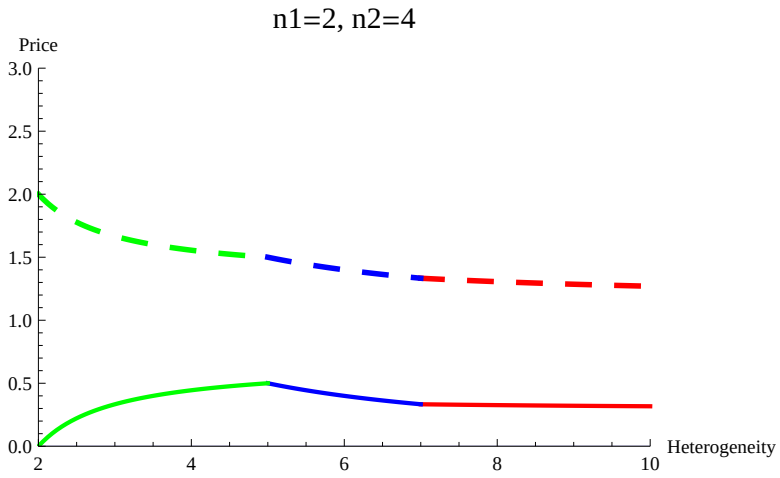


Figure E.4: Duopoly: Nash Equilibrium in Prices

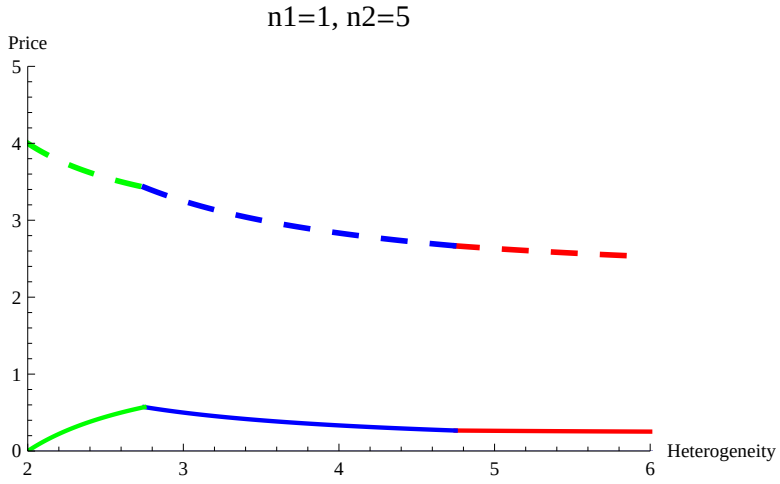


Figure E.5: Duopoly: Nash Equilibrium in Prices

Quality subgame Newspapers choose their quality in order to maximise their profits:

$$\max_{n_j} \Pi_j = p_j^* D_j \left(p_j^*, p_{j'}^*, n_j, n_{j'}\right) - \frac{c n_j^2}{2},\ j = 1, 2$$

Assuming $(n_2 > n_1)$, I first determine the local maximum for each of the three market configurations – the three price equilibrium. (To simplify the notations I note here Π_j the net profit – after deduction of the set-up cost S).

$$(\Pi_1,\Pi_2)=\begin{cases}\left(\frac{n_1n_2\overline{\gamma}^2(n_2-n_1)}{(4n_2-n_1)^2}-c\frac{n_1^2}{2},\frac{4n_2^2\overline{\gamma}^2(n_2-n_1)}{(4n_2-n_1)^2}-c\frac{n_1^2}{2}\right) & \text{if } \frac{\overline{\gamma}}{\underline{\gamma}}\in\left[\frac{4n_2-n_1}{n_2-n_1},\infty\right[\\ \left(\frac{\underline{\gamma}n_1}{2(n_2-n_1)}\left[(n_2-n_1)\left(\overline{\gamma}-2\underline{\gamma}\right)-\underline{\gamma}n_1\right]-c\frac{n_1^2}{2},\frac{\left[\underline{\gamma}n_1+\overline{\gamma}(n_2-n1)\right]^2}{4(n_2-n_1)}-c\frac{n_1^2}{2}\right) & \text{if } \frac{\overline{\gamma}}{\underline{\gamma}}\in\left[\frac{2n_2+n_1}{n_2-n_1},\frac{4n_2-n_1}{n_2-n_1}\right[\\ \left(\frac{(n_2-n1)\left(\overline{\gamma}-2\underline{\gamma}\right)^2}{9}-c\frac{n_1^2}{2},\frac{(n_2-n1)\left(2\overline{\gamma}-\underline{\gamma}\right)^2}{9}-c\frac{n_2^2}{2}\right) & \text{if } \frac{\overline{\gamma}}{\underline{\gamma}}\in\left]2,\frac{2n_2+n_1}{n_2-n_1}\right[\end{cases}$$

Let first consider the **non-covered market case** which corresponds to the parameters constellation $\frac{\overline{\gamma}}{\underline{\gamma}}\in\left[\frac{4n_2-n_1}{n_2-n_1},\infty\right[$. Solving for the first order condition of the two newspapers and combining them together I obtain:

$$4n_2^3-8n_1^3-23n_1n_2^2+12n_1^2n_2=0 \tag{5}$$

Setting $n_2=\mu n_1$ and dividing both sides by n_1^3 I rewrite equation (5) as follows:

$$4\mu^3-23\mu^2+12\mu-8=0 \tag{6}$$

Equation (6) has only one real soluton: $\mu=5.25123$. Hence the non-covered market solution is:

$$\text{If}\quad \frac{\overline{\gamma}}{\underline{\gamma}}>4.7\quad\begin{cases}n_1^*=0.0482\frac{\gamma^2}{c}\\ \\ n_2^*=0.2533\frac{\gamma^2}{c}\end{cases}$$

Second, I study the **covered-market case with an interior solution** ($\frac{\overline{\gamma}}{\underline{\gamma}}\in\left]2,\frac{2n_2+n_1}{n_2-n_1}\right[$). In this case newspaper 1's profits are given by:

$$\Pi_1=\frac{\left(1-\underline{\gamma}\right)^2}{9}(n_2-n_1)-c\frac{n_1^2}{2}$$

These profits are strictly decreasing in n_1 so newspaper 1 will produce the lowest possible amount of n_1.

Rearranging condition $\frac{\overline{\gamma}}{\underline{\gamma}}\in\left]2,\frac{2n_2-n_1}{n_2-n_1}\right[$ I obtain that the market is covered with an interior solution whenever $n_1>n_2\frac{1-\underline{\gamma}}{1+3\underline{\gamma}}$. Newpaper 1 thus chooses $n_1=n_2\frac{1-\underline{\gamma}}{1+3\underline{\gamma}}$. Combining this value with the first order condition for newspaper 2 the interior solution covered market equilibria is:

$$\text{If} \quad \frac{\overline{\gamma}}{\underline{\gamma}} \in]2, \infty[\quad \begin{cases} n_1^{***} = \frac{1}{3c} \frac{\underline{\gamma}(1-\underline{\gamma})(2+3\underline{\gamma})^2}{\left(1+2\underline{\gamma}\right)^2} \\ \\ n_2^{***} = \frac{1}{3c} \frac{\underline{\gamma}\left(2+3\underline{\gamma}\right)^2}{\left(1+2\underline{\gamma}\right)^2} \end{cases}$$

When $\left(\overline{\gamma}, \underline{\gamma}\right)$ take values such that a reply is defined for two configurations, I compare corresponding profits in order to identify the best reply.

Finally I check that the local maximum I obtain are Nash equilibrium. In other words, I check that (i) newspaper 1 has no incentive to "leapfrog" newspaper 2 and itself produce the highest quantity; and that (ii) newspaper 2 has no incentive to deviate and produce a quantity of news lower than that produced by newspaper 1. Comparing the production choices of newspapers under monopoly and duopoly I obtain the following proposition:

Proposition 2 (Business stealing and returns to scale in news production)
Assume n_m^* is the monopoly equilibrium and (n_1^*,n_2^*) is the duopoly equilibrium. $\exists\ \underline{\lambda}, \overline{\lambda}$ such that
If $\frac{\overline{\gamma}}{\underline{\gamma}} \geq \overline{\lambda}$ (high heterogeneity of tastes), $n_1^* < n_m^* < n_2^*$ (i.e. under duopoly, one duopolist produces a lower-quality newspaper than the monopolist, and the other one a higher-quality newspaper).
If $\frac{\overline{\gamma}}{\underline{\gamma}} < \underline{\lambda}$ (low heterogeneity of tastes), $n_1^* < n_2^* < n_m^*$ (i.e. under duopoly, both duopolists produce a lower-quality newspaper than the monopolist).

F Voting Model

The voting model I present in this section is closely related Feddersen and Pesendorfer (1996) and Feddersen and Sandroni (2006a,b). Society must choose between two candidates by majority voting. There are two states of nature: one in which all voters prefer the first candidate and a second state where all prefer the other candidate. Voters have state dependent preferences: there are no partisans. I voluntarily chose to abstract from political bias considerations. In the benchmark case of my model as well as in the general case with vertical differentiation, readers do not have political opinions and individuals are only heterogenous in their preferences for information and entertainment; there is no media bias and newspapers are pure profit-maximizers. Agents are motivated to vote out of a sense of ethical obligation. Each agent has an action she should take and receives utility from taking this action. Hence each agent behaves strategically even though pivotal probabilities play no role.

I assume that people learn information for their voting decision as a by-product of newspaper readership. An important number of studies have shown that people often learn politically relevant facts as a by-product of nonpolitical routines (Prior, 2007). Taking the example of moviegoers sitting through a newsreel even though they came to be entertained by the main feature, Downs (1957, p. 223) underline that political information is sometimes obtained from entertainment-seeking behavior: "entertainment sources sometimes yield political information as a surplus benefit from what is intended as an entertainment investment". Focusing on television, Baum (2002, 2003) argues that a mix of entertainment and politics provides political information to people not sufficiently interested in politics to watch hard news.[16] Similarly, Zukin and Snyder (1984) show that many politically uninterested New Jersey citizens who received their broadcast news from New York City stations recaled the names of New York mayoral candidates, even though they could not vote for any of the candidates. In this paper, I assume along the same lines that even readers buying a newspaper mainly for the entertainment pages it contains acquire information relevant in the political process from the information pages of the newspaper. This information affects whether or not they would go to the polls.

F.1 Model Set-Up: Nature

There are two equally likely states of Nature $\Theta \in \{0, 1\}$ that are unobservable. There is a continuum of agents of mass 1 who share a common prior about the state of Nature (one half).

[16] According to Baum (2002, 2003, 2005), viewers select programs based on the desire to be entertained, but still learn about politics because the programs they pick also contain information. He shows for example that some people who would otherwise not watch any news at all pay attention to coverage of wars and foreign policy crises in soft-news programs (Baum, 2002). He finds in the same way that when presidential candidates appear on entertainment talk shows, they sway a segment of the population that would otherwise not heard much about the campaign (Baum, 2005).

There are two candidates running for the election, candidate 0 and candidate 1: $\Omega = \{0, 1\}$. The candidate that receives the majority of the votes cast is elected (if there is a tie, each candidate is chosen with equal probability). One can think of the two candidates as being the "status quo" and the "alternative", and assume that there is some uncertainty about the cost of implementing the alternative which can be either high or low.

F.2 Model Set-Up: Consumers

Consumers – which are also the potential newspaper buyers described in the previous section – take two actions. First they choose whether to buy a newspaper, according to the utility function described in more details above, and next they choose whether to vote: $s \in S = \{a, 0, 1\}$, where a denotes abstention, 0 denotes vote for candidate 0 and 1 vote for candidate 1. There is no partisan. Voters have state dependent preferences, i.e. given a pair (ω, θ), $\omega \in \Omega$ and $\theta \in \Theta$, the utility of a potential voter is:

$$U(\omega, \theta) = \begin{cases} 0, & \text{if } \omega \neq \theta \\ U > 0, & \text{if } \omega = \theta \end{cases}$$

Every voter receives a message $m \in M = \{0, 1, \phi\}$. Voters who receive a message 0 or 1 are informed and all others are uninformed. As underlined above, I assume that the information acquisition is exogenous in the voting stage of the game: voters who buy a newspaper are informed and all others are uninformed.[17] I call $q \in (0, 1)$ the fraction of informed voters in the population. Among the informed voters, the fraction which observes the message $m \in \{0, 1\}$ in state m is $\rho \in (.5, 1]$. When ρ is close to 0.5 the message is a very noisy signal of the true state, while when ρ is close to 1 the message almost perfectly conveys the true state.

I assume that ρ is an increasing function of n (the quality of the newspaper) s.t. $\rho(0) = 0.5$ and $\rho'(n) > 0$. In other words, the higher the quality of the newspaper, the better the quality of the signal received by the reader. Finally, there is a uniformly distributed cost of voting $C \sim U(0, \overline{C})$.

F.3 Timing of the Game

The game proceeds as follows:

1. Nature draws $\theta \in \Theta = \{0, 1\}$.
2. Newspapers choose their quality n and price p.
3. Voters choose $\alpha \in A = \{B, NB\}$ (whether to buy a newspaper, and which one).

[17] A possible extension will be to endogenize the acquisition of information. However it will make the model much less tractable without modifying its main predictions.

4. Voters choose $s \in \{a, 0, 1\}$ (voting decision).

5. The state of nature is revealed.

I solve the game by backward induction.

F.4 Solving the Model

Proposition 3 shows how information provided by newspapers affects voting behavior.

Proposition 3 (Less information leads to rational abstention)
(i) Only informed voters (reading a newspaper) vote.
(ii) Among informed voters, if there are different degrees of information (two newspapers with different n competing on the market), then only the informed voters reading the higher-quality newspaper vote.
(iii) There is a cut-off point such that better informed voters with voting costs above this threshold should abstain. This cut-off point is increasing in the quality of the newspaper n.

This is consistent with existing empirical evidence showing that individuals with high level of information are much more likely to vote than those with low levels (Converse, 2006; Parlfrey and Poole, 1987).

Combining Propositions 1 and 3, I obtain the following predictions on how the media environment affects political behavior.

Prediction 1 (High heterogeneity)
If heterogeneity in consumers' willingness-to-pay for quality is high, then
(i) Turnout is higher under duopoly than under monopoly.
(ii) Voters are better informed under duopoly than under monopoly.

Prediction 2 (Low heterogeneity)
If heterogeneity in consumers' willingness-to-pay for quality is low, then
(i) Turnout is lower under duopoly than under monopoly.
(ii) Voters are less informed under duopoly than under monopoly.

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