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Economie politique de la redistribution : une approche comparative par la demande

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A Grzegorz

Résumé

Cette thèse vise à étudier l'économie politique de la redistribution à partir de la demande, en utilisant des données internationales sur plusieurs périodes. Nous proposons de mener une analyse empirique de la relation entre les préférences individuelles, la demande politique et la politique économique. Nous nous concentrons sur les politiques redistributives, en ce qu'elles reposent intuitivement sur les conflits d'intérêts portant sur la capture de rentes. Nous utilisons la dimension temporelle et la dimension unitaire de l'individu ou du pays, et procédons à des analyses de séries temporelles, de coupes transversales ou bien longitudinales. Plus spécifiquement, la thèse cherche à éclairer les points suivants : (i) les déterminants des préférences individuelles pour la redistribution, (ii) l'évolution, la prépondérance et la multidimensionalité de la demande pour les politiques économiques, et (iii) la manière dont les demandes individuelles hétérogènes sont traduites dans les politiques macroéconomiques, au travers du filtre effectué par la compétition électorale.

Chapitre 1
Préférences pour la Redistribution : une Analyse Comparative Européenne

Comment expliquer les préférences des agents pour l'intervention de l'Etat dans les politiques sociales ? Le Chapitre 1 fournit une analyse empirique des déterminants des préférences individuelles pour les politiques redistributives. En regardant les préférences individuelles pour la redistribution, nous cherchons à répondre à la question suivante : Où les préférences individuelles pour la redistribution trouvent-elles leur origine ? Ceci est fait à partir d'une analyse statique, en utilisant des régressions économétriques en coupes transversales sur quatre pays européens (Royaume-Uni, Suède, France et Allemagne). Le choix d'étudier ces quatre pays repose sur la diversité de leurs modèles sociaux, et leur représentativité du contexte européen. Nous recherchons l'hétérogénéité dans la position des individus sur le marché du travail, et déduisons un regroupement d'agents qui portent les mêmes préférences (groupes socio-politiques).

Nous menons une analyse en coupes transversales sur des données de sondages individuelles, et mettons en lumière le lien entre la position économique des agents et leur demande spécifique vis-à-vis de la redistribution. La littérature sur les déterminants des préférences pour la redistribution propose une large variété d'arguments pour expliquer les différences dans les attitudes vis-à-vis de l'Etat providence. Cela va des facteurs purement pécuniaires (Meltzer et Richard, 1981) aux facteurs purement culturels (Algan et Cahuc, 2006), en passant par la position sociale subjective (Hirschman, 1973) ou les anticipa-

tions de mobilité sociale (Bénabou et Ok, 2001). En contrôlant pour nombre des facteurs habituellement considérés comme ayant un impact sur les préférences individuelles, nous étudions les motifs égoïstes de redistribution et nous nous concentrons sur le rôle joué par le statut professionnel des individus dans la formation de leurs préférences. Nous utilisons des données ISSP (International Social Survey Programme) pour quatre pays européens (Royaume-Uni, Suède, France et Allemagne) qui représentent des cas idéaux concernant le modèle social en Europe (Esping-Andersen, 1990 ; Amable, 2005), et testons la validité empirique des principales propositions de la littérature, grâce à des régressions logistiques ordonnées. Nous évaluons de manière substantive l'importance relative de chaque variable explicative et menons une série de tests de robustesse. Afin de souligner l'hétérogénéité du modèle social européen, nous menons également l'analyse au niveau national avec une série de régressions séparées par pays.

Nos résultats sont les suivants. Premièrement, nous confirmons l'importance d'un pur effet revenu sur les préférences. En effet, l'activité professionnelle, le revenu familial, la classe sociale subjective ou la mobilité sociale attendue pointent tous dans la même direction : plus un individu est pauvre (objectivement ou subjectivement), plus il soutient la redistribution. Deuxièmement, ces attitudes vis-à-vis de la redistribution sont liées à la position économique des individus sur le marché du travail. Nous sommes ainsi capables de déterminer qui soutient le modèle social en Europe, et qui bénéficierait du recul du modèle social européen, en regroupant les agents le long de la dimension professionnelle. Troisièmement, sur la base des groupes socio-politiques formés par des individus qui exercent différentes activités professionnelles mais expriment des attitudes similaires, nous

établissons un regroupement de pays à partir de la comparaison des résultats de nos régressions sur pays séparés.

Notre contribution à la littérature existante est triple. Tout d'abord, nous estimons de manière éloquente l'importance relative des facteurs économiques en termes de gains courants et attendus, en tenant compte de l'expérience de mobilité sociale et de l'aversion au risque. Ensuite, nous identifions quels groupes socio-politiques peuvent être formés sur la base de leurs préférences pour la redistribution. Enfin, nous mettons en lumière les différences entre les pays européens concernant le regroupement des agents. Nos résultats pointent ainsi du doigt la nécessité d'adopter des stratégies politiques différenciées par pays, lors de la mise en place de réformes nationales.

Notons que l'espace politique est ici contraint à n'être représenté que par une seule dimension : la demande se réfère uniquement aux politiques redistributives. Ceci peut sembler une hypothèse forte, ce que cherche à évaluer le chapitre suivant.

Chapitre 2
Espace Politique des Electeurs Français : Evolution de la Demande Politique, 1978-2002

Comment représenter l'espace politique des électeurs et identifier l'évolution de la demande politique ? Le Chapitre 2 identifie empiriquement la multidimensionalité et l'évolution de la demande politique d'agents hétérogènes. Ayant dé-

sormais une meilleure idée de ce qui constitue les racines de la demande pour les politiques économiques, nous passons à la caractérisation de cette demande. Nous considérons alors un éventail plus large de politiques économiques (pas seulement redistributives) et laissons l'espace politique non contraint (potentiellement multidimensionnel). Nous conservons un niveau d'analyse microéconomique et regardons les préférences individuelles. Cette fois, nous nous intéressons à la hiérarchie des préférences. Nous cherchons à répondre à la question suivante : Parmi les différentes demandes que porte un individu, laquelle détermine son vote ? Nous cherchons par ailleurs à savoir si cette demande saillante reste la même à travers le temps. Ainsi, nous introduisons la dynamique dans l'analyse. Finalement, nous observons la composition et la décomposition de groupes socio-politiques le long de plusieurs dimensions à travers le temps.

Nous menons une analyse factorielle à partir de sondages post-électoraux français, sur la période 1978-2002. Le cas français est intéressant, en ce que nombre d'observateurs ont défini l'issue du premier tour des élections présidentielles de 2002 comme étant une crise politique, lorsque le candidat de l'Extrême droite, habituellement largement minoritaire, s'est qualifié pour le second tour des élections (Kuhn, 2002 ; Lewis-Beck, 2003). Afin de mettre en lumière les racines d'une telle situation, le point central de notre analyse est de rassembler les groupes socio-économiques autour des dimensions politiques qui structurent l'espace politique. Plus précisément, nous dessinons la carte spatiale des préférences politiques des électeurs, et mesurons l'importance relative des dimensions politiques à travers le temps, sans contraindre l'espace politique à être unidimensionnel. Nous nous appuyons ainsi sur les modèles de vote spatial (Downs, 1957 ; Enelow et Hinich,

1984 ; Iversen, 1994), et sur la littérature d'économie politique qui évalue empi-
riquement les conséquences de la multidimensionalité de la demande (Laslier et
Van der Straeten, 2004 ; Roemer et Van der Straeten, 2005).

Nos résultats peuvent être résumés comme suit. Nous identifions explicite-
ment un espace politique multidimensionnel et l'évolution de la demande poli-
tique d'agents hétérogènes ; au final, la représentation spatiale de l'espace poli-
tique français se réduit à deux dimensions. La première dimension est une dimen-
sion standard gauche-droite liée à la politique économique, et se maintient tout
au long de la période étudiée (1978-2002). La seconde dimension est tout d'abord
une dimension liée à l'insécurité (1978-1988), puis se transforme en une dimen-
sion liée à l'Europe (1997-2002), en passant par une période de contestation où
le clivage se porte sur le besoin de réformes (1995). Cette seconde dimension dis-
socie progressivement l'électorat des partis modérés de celui des partis extrêmes.
Ainsi, la crise économique des années 1980 et le processus d'intégration euro-
péenne des années 1990 déterminent les demandes politiques et multiplient les
lignes de fracture : les deux blocs sociaux qui soutenaient la Droite et la Gauche
de gouvernement se divisent progressivement, et une tripartition de l'espace po-
litique apparaît finalement.

La contribution de ce chapitre peut être résumée dans les trois aspects sui-
vants. Premièrement, nous évaluons empiriquement la multidimensionalité de
l'espace politique français. Deuxièmement, nous montrons la dynamique de la
demande et l'évolution de sa composition. Troisièmement, nous caractérisons les
blocs sociaux qui soutiennent les dimensions politiques définies dans l'espace po-

litique. Nous mettons ainsi en lumière les changements significatifs dans les bases sociales du vote et de la proximité partisane de 1978 à 2002, notamment après le point de rupture de 1995 et la montée des questions européennes dans le débat politique. Ceci a d'importantes implications en termes d'opportunités de mener un changement institutionnel, que nous détaillons plus avant dans le chapitre.

Notons que l'offre politique (plateformes des partis) et les règles de la compétition électorale (institutions politiques), bien qu'interagissant implicitement avec l'espace politique identifié pour les électeurs, sont absentes de cette étude. Pourtant, l'interaction entre la demande et l'offre est potentiellement très importante, à l'équilibre. Une caractéristique essentielle de la compétition politique est donc ajoutée à l'analyse dans le chapitre suivant.

Chapitre 3
Générosité de l'Etat Social : Interaction entre Demande de Redistribution et Fragmentation des Partis

Comment la fragmentation des partis relaie-t-elle les préférences pour la redistribution dans les démocraties parlementaires ? Le Chapitre 3 met en lumière l'interaction entre le nombre de partis (une caractéristique de la concurrence politique) et la dispersion des préférences pour la redistribution (une caractéristique de la demande politique), et son impact sur le niveau de générosité de l'Etat social. Nous passons ainsi à une analyse de l'interaction entre la demande politique, précédemment montrée comme étant basée sur des préférences hétérogènes, et la

compétition politique. Le degré de fragmentation du système de partis est utilisé pour caractériser la compétition politique. A partir de régressions sur données longitudinales (18 pays, 23 années), nous déterminons les origines de la politique économique liée à la générosité de l'Etat social. De manière importante, nous cherchons également à faire apparaître comment l'hétérogénéité de la demande (la distribution des préférences) est traduite dans les politiques économiques, en fonction des règles du jeu (le nombre de partis dans la législature).

Nous menons des régressions sur un échantillon de 18 pays de l'OCDE sur une période de 23 années, en traitant attentivement les questions soulevées par l'utilisation de données temporelles en coupes transversales (données longitudinales ou de panel). Les données proviennent de bases de données microéconomiques (préférences pour la redistribution) et de bases de données macroéconomiques (politique économique, fragmentation des partis). Notre argument capture l'affirmation selon laquelle le degré de fragmentation des partis politiques a un impact positif sur le niveau de dépenses publiques (Crepaz, 1998 ; Milesi-Feretti, Perotti et Rostagno, 2002 ; Persson, Roland et Tabellini, 2007). Cependant, nous tenons compte d'un canal additionnel, jusqu'alors négligé par la littérature : l'effet de composition de la demande. En utilisant l'interaction entre l'offre et la demande, notre objectif est de montrer que les demandes conflictuelles d'agents hétérogènes peuvent trouver un moyen d'être exprimées dans les politiques publiques, selon l'architecture de la médiation politique.

Nos résultats sont triples. Premièrement, nous montrons que le niveau des préférences pour la redistribution ont un impact direct sur la générosité de l'Etat

social. Deuxièmement, nous montrons que l'hétérogénéité de la demande, plus que le niveau de cette demande, a un impact positif fort sur la générosité des politiques sociales. Troisièmement, l'impact de la demande est conditionné par la structure des partis : l'effet positif de la demande (que ce soit en niveau ou en dispersion) est ainsi renforcé par le degré de fragmentation du système de partis.

La principale contribution de ce chapitre à la littérature existante est d'utiliser une mesure directe des préférences pour la redistribution afin d'expliquer l'évolution de la générosité des politiques sociales. De manière importante, nous analysons aussi l'effet de composition de la demande sur la politique économique. Enfin, nous mettons en lumière la complémentarité entre l'hétérogénéité de la demande et le niveau de fragmentation des partis, et dérivons un effet d'une ampleur importante sur la politique économique.

Ainsi, cette thèse explore l'un des aspects majeurs de l'économie politique : Quel est le rôle de la demande politique sur l'évolution de la politique économique ? Afin de répondre à cette question, nous nous concentrons sur les politiques redistributives et portons une attention particulière à la dimension hétérogène de la demande. Nous menons des analyses empiriques à l'aide de données internationales étalées dans le temps. Tout d'abord, nous explorons les origines de la demande (préférences individuelles) ; puis nous évaluons l'évolution de la demande et des groupes sociaux qui portent des préférences hétérogènes ; enfin, nous interagissons la demande avec une caractéristique de la compétition électorale et mesurons son impact sur l'issue politique. Dans l'ensemble, la thèse montre qu'une question de politique économique, telle que le niveau de redistri-

bution d'un pays, gagne à être étudiée par la prise en compte de l'hétérogénéité et de l'aspect dynamique de la demande politique et de la compétition électorale. La présence de multidimensionalité, de demandes hétérogènes, de préférences conflictuelles et de partis fragmentés doit être considérée afin de comprendre comment les politiques redistributives peuvent différer d'un pays à l'autre, et d'une année sur l'autre. Ceci a potentiellement d'importantes implications sur la manière de mener des réformes de politique économique, dont le succès dépend du degré de dispersion du soutien politique des électeurs.

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Introduction Générale

L'économie politique conçoit les politiques économiques comme étant issues d'un équilibre entre une offre proposée par des partis politiques et mise en place par des gouvernements, et une demande portée par des électeurs hétérogènes. L'appariement entre l'offre et la demande politiques se fait à travers un processus électoral. L'équilibre politique issu de ce processus électoral a été largement étudié dans le contexte de partis cherchant à gagner les élections, étant donnée la demande des électeurs. En revanche, les évaluations empiriques portant sur la manière dont cette demande est structurée sont bien moins abondantes.

Afin de contribuer à ce champ de recherche, un point de départ est de reconnaître la dimension hétérogène de la demande, celle-ci impliquant des préférences conflictuelles (Acemoglu et Robinson, 2005). Toute tentative de réforme politique est ainsi confrontée à l'opposition d'un groupe d'individus, que ce groupe soit minoritaire ou majoritaire. Le pouvoir effectif du groupe dépend des caractéristiques institutionnelles du système de représentation politique (Riker, 1962). Par conséquent, il est nécessaire d'identifier ces groupes, susceptibles d'opposer leur veto à la réforme. En effet, afin de gagner un soutien politique suffisamment large, les gouvernements adaptent souvent leurs propositions afin de mieux cibler ces groupes (Castanheira *et al.*, 2006).

Le caractère conflictuel des intérêts des agents est particulièrement important lorsque l'on s'intéresse aux réformes ayant pour but de modifier l'étendue de la redistribution des revenus au sein d'un pays, ou bien le degré de générosité de son

modèle social. Ainsi, la grande diversité des Etats providence (Esping-Andersen, 1990 ; Amable, 2005) parmi les pays européens ou les pays de l'OCDE représente une source d'informations très riche pour nos investigations. La question de la convergence des modèles sociaux a souvent été posée dans la littérature (Hall et Soskice, 2001) et la globalisation ou la *désindustrialisation* ont été pointées du doigt comme étant à l'origine de l'évolution des modèles (Iversen, 2001). Cependant, une analyse d'économie politique qui étudierait attentivement les mécanismes à travers lesquels l'hétérogénéité des préférences pour la redistribution se traduit dans le choix de politique économique *via* le regroupement d'agents aux préférences communes est toujours absente.

Objectif de la thèse

Cette thèse vise à étudier l'économie politique de la redistribution à partir de la demande, en utilisant des données internationales sur plusieurs périodes. Nous proposons de mener une analyse empirique de la relation entre les préférences individuelles, la demande politique et la politique économique. Nous nous concentrons sur les politiques redistributives, en ce qu'elles reposent intuitivement sur les conflits d'intérêts portant sur la capture de rentes. Nous utilisons la dimension temporelle et la dimension unitaire de l'individu ou du pays, et procédons à des analyses de séries temporelles, de coupes transversales ou bien longitudinales. Plus spécifiquement, la thèse cherche à éclairer les points suivants : (i) les déterminants des préférences individuelles pour la redistribution, (ii) l'évolution, la prépondérance et la multidimensionalité de la demande pour les politiques économiques, et (iii) la manière dont les demandes individuelles hétérogènes sont traduites dans les politiques macroéconomiques, au travers du filtre effectué par la compétition électorale.

De manière importante, nous gardons en tête que l'hétérogénéité des individus a une limite : les agents peuvent toujours être rassemblés, et la formation de groupes socio-politiques est nécessaire afin de créer un soutien politique (l'action collective au niveau de la demande est implicite, et peut être dérivée de notre travail). Ceci implique une série d'hypothèses simplificatrices du point de vue de l'offre et des institutions politiques qui agissent comme les règles du jeu de la compétition politique ; ces hypothèses seront détaillées au sein de chaque chapitre.

En gardant les choses volontairement simples pour le moment, nous exposons ci-dessous l'évolution progressive qui est faite tout au long de la thèse : l'analyse passe d'un cadre statique à un cadre dynamique, d'un niveau micro à un niveau macroéconomique, de l'étude des déterminants des préférences individuelles à l'étude des conséquences de la dispersion de ces préférences, en passant par l'étude de la formation des blocs sociaux qui constituent les groupes politiques.

Dans le Chapitre 1, nous visons à évaluer l'origine de l'hétérogénéité de la demande. En regardant les préférences individuelles pour la redistribution, nous cherchons à répondre à la question suivante : Où les préférences individuelles pour la redistribution trouvent-elles leur origine ? Ceci est fait à partir d'une analyse statique, en utilisant des régressions économétriques en coupes transversales sur quatre pays européens (Royaume-Uni, Suède, France et Allemagne). Le choix d'étudier ces quatre pays repose sur la diversité de leurs modèles sociaux, et leur représentativité du contexte européen. Nous recherchons l'hétérogénéité dans la position des individus sur le marché du travail, et déduisons un regroupement d'agents qui portent les mêmes préférences (groupes socio-politiques).

Notons que l'espace politique est ici contraint à n'être représenté que par une seule dimension : la demande se réfère uniquement aux politiques redistributives.

Ceci peut sembler une hypothèse forte, ce que cherche à évaluer le chapitre suivant.

Dans le Chapitre 2, nous visons à étudier la nature et le nombre des dimensions qui structurent l'espace politique du côté de la demande. Ayant désormais une meilleure idée de ce qui constitue les racines de la demande pour les politiques économiques, nous passons à la caractérisation de cette demande. Nous considérons alors un éventail plus large de politiques économiques (pas seulement redistributives) et laissons l'espace politique non contraint (potentiellement multidimensionnel). Nous conservons un niveau d'analyse microéconomique et regardons les préférences individuelles. Cette fois, nous nous intéressons à la hiérarchie des préférences. Nous cherchons à répondre à la question suivante : Parmi les différentes demandes que porte un individu, laquelle détermine son vote ? Nous cherchons par ailleurs à savoir si cette demande saillante reste la même à travers le temps. Ainsi, nous introduisons la dynamique dans l'analyse. Finalement, nous observons la composition et la décomposition de groupes socio-politiques le long de plusieurs dimensions à travers le temps. Ceci est fait grâce à une analyse factorielle basée sur des données de sondage françaises, sur la période 1978-2002.

Notons que l'offre politique (plateformes des partis) et les règles de la compétition électorale (institutions politiques), bien qu'interagissant implicitement avec l'espace politique identifié pour les électeurs, sont absentes de cette étude. Pourtant, l'interaction entre la demande et l'offre est potentiellement très importante, à l'équilibre. Une caractéristique essentielle de la compétition politique est donc ajoutée à l'analyse dans le chapitre suivant.

Dans le Chapitre 3, nous visons à étudier la générosité de l'Etat social, déterminée par la rencontre entre la demande politique et l'offre

politique. Nous passons ainsi à une analyse de l'interaction entre la demande politique, précédemment montrée comme étant basée sur des préférences hétérogènes, et la compétition politique. Le degré de fragmentation du système de partis est utilisé pour caractériser la compétition politique. A partir de régressions sur données longitudinales (18 pays, 23 années), nous déterminons les origines de la politique économique liée à la générosité de l'Etat social. De manière importante, nous cherchons également à faire apparaître comment l'hétérogénéité de la demande (la distribution des préférences) est traduite dans les politiques économiques, en fonction des règles du jeu (le nombre de partis dans la législature).

Dans l'ensemble, cette thèse montre qu'une question de politique économique, telle que le niveau de redistribution d'un pays, gagne à être étudiée par la prise en compte de l'hétérogénéité et de l'aspect dynamique de la demande politique et de la compétition électorale. La présence de multidimensionalité, de demandes hétérogènes, de préférences conflictuelles et de partis fragmentés doit être considérée afin de comprendre comment les politiques redistributives peuvent différer d'un pays à l'autre, et d'une année sur l'autre.

Plan de la thèse

Le reste de cette introduction propose une vue d'ensemble et un plan de la thèse. Après avoir présenté les questions substantives qui nous intéressent, nous exposons notre choix d'outils analytiques afin d'aider le lecteur à gagner une meilleure perspective. Nous présentons aussi les principaux résultats de chaque chapitre et nos contributions à la littérature existante.

Comment expliquer les préférences des agents pour l'intervention de l'Etat dans les politiques sociales ? Le Chapitre 1 fournit une analyse empi-

rique des déterminants des préférences individuelles pour les politiques redistributives.

Nous menons une analyse en coupes transversales sur des données de sondages individuelles, et mettons en lumière le lien entre la position économique des agents et leur demande spécifique vis-à-vis de la redistribution. La littérature sur les déterminants des préférences pour la redistribution propose une large variété d'arguments pour expliquer les différences dans les attitudes vis-à-vis de l'Etat providence. Cela va des facteurs purement pécuniaires (Meltzer et Richard, 1981) aux facteurs purement culturels (Algan et Cahuc, 2006), en passant par la position sociale subjective (Hirschman, 1973) ou les anticipations de mobilité sociale (Bénabou et Ok, 2001). En contrôlant pour nombre des facteurs habituellement considérés comme ayant un impact sur les préférences individuelles, nous étudions les motifs égoïstes de redistribution et nous nous concentrons sur le rôle joué par le statut professionnel des individus dans la formation de leurs préférences. Nous utilisons des données ISSP (International Social Survey Programme) pour quatre pays européens (Royaume-Uni, Suède, France et Allemagne) qui représentent des cas idéaux concernant le modèle social en Europe (Esping-Andersen, 1990 ; Amable, 2005), et testons la validité empirique des principales propositions de la littérature, grâce à des régressions logistiques ordonnées. Nous évaluons de manière substantive l'importance relative de chaque variable explicative et menons une série de tests de robustesse. Afin de souligner l'hétérogénéité du modèle social européen, nous menons également l'analyse au niveau national avec une série de régressions séparées par pays.

Nos résultats sont les suivants. Premièrement, nous confirmons l'importance d'un pur effet revenu sur les préférences. En effet, l'activité professionnelle, le revenu familial, la classe sociale subjective ou la mobilité sociale attendue pointent tous dans la même direction : plus un individu est pauvre (objectivement ou subjectivement), plus il soutient la redistribution. Deuxièmement, ces attitudes

vis-à-vis de la redistribution sont liées à la position économique des individus sur le marché du travail. Nous sommes ainsi capables de déterminer qui soutient le modèle social en Europe, et qui bénéficierait du recul du modèle social européen, en regroupant les agents le long de la dimension professionnelle. Troisièmement, sur la base des groupes socio-politiques formés par des individus qui exercent différentes activités professionnelles mais expriment des attitudes similaires, nous établissons un regroupement de pays à partir de la comparaison des résultats de nos régressions sur pays séparés.

Notre contribution à la littérature existante est triple. Tout d'abord, nous estimons de manière éloquente l'importance relative des facteurs économiques en termes de gains courants et attendus, en tenant compte de l'expérience de mobilité sociale et de l'aversion au risque. Ensuite, nous identifions quels groupes socio-politiques peuvent être formés sur la base de leurs préférences pour la redistribution. Enfin, nous mettons en lumière les différences entre les pays européens concernant le regroupement des agents. Nos résultats pointent ainsi du doigt la nécessité d'adopter des stratégies politiques différenciées par pays, lors de la mise en place de réformes nationales.

Comment représenter l'espace politique des électeurs et identifier l'évolution de la demande politique ? Le Chapitre 2 identifie empiriquement la multidimensionalité et l'évolution de la demande politique d'agents hétérogènes.

Nous menons une analyse empirique à partir de sondages post-électoraux français, sur la période 1978-2002. Le cas français est intéressant, en ce que nombre d'observateurs ont défini l'issue du premier tour des élections présidentielles de 2002 comme étant une crise politique, lorsque le candidat de l'Extrême droite, habituellement largement minoritaire, s'est qualifié pour le second tour des élections (Kuhn, 2002 ; Lewis-Beck, 2003). Afin de mettre en lumière les racines d'une telle situation, le point central de notre analyse est de rassembler

les groupes socio-économiques autour des dimensions politiques qui structurent l'espace politique. Plus précisément, nous dessinons la carte spatiale des préférences politiques des électeurs, et mesurons l'importance relative des dimensions politiques à travers le temps, sans contraindre l'espace politique à être unidimensionnel. Nous nous appuyons ainsi sur les modèles de vote spatial (Downs, 1957 ; Enelow et Hinich, 1984 ; Iversen, 1994), et sur la littérature d'économie politique qui évalue empiriquement les conséquences de la multidimensionalité de la demande (Laslier et Van der Straeten, 2004 ; Roemer et Van der Straeten, 2005).

Nos résultats peuvent être résumés comme suit. Nous identifions explicitement un espace politique multidimensionnel et l'évolution de la demande politique d'agents hétérogènes ; au final, la représentation spatiale de l'espace politique français se réduit à deux dimensions. La première dimension est une dimension standard gauche-droite liée à la politique économique, et se maintient tout au long de la période étudiée (1978-2002). La seconde dimension est tout d'abord une dimension liée à l'insécurité (1978-1988), puis se transforme en une dimension liée à l'Europe (1997-2002), en passant par une période de contestation où le clivage se porte sur le besoin de réformes (1995). Cette seconde dimension dissocie progressivement l'électorat des partis modérés de celui des partis extrêmes. Ainsi, la crise économique des années 1980 et le processus d'intégration européenne des années 1990 déterminent les demandes politiques et multiplient les lignes de fracture : les deux blocs sociaux qui soutenaient la Droite et la Gauche de gouvernement se divisent progressivement, et une tripartition de l'espace politique apparaît finalement.

La contribution de ce chapitre peut être résumée dans les trois aspects suivants. Premièrement, nous évaluons empiriquement la multidimensionalité de l'espace politique français. Deuxièmement, nous montrons la dynamique de la demande et l'évolution de sa composition. Troisièmement, nous caractérisons les

blocs sociaux qui soutiennent les dimensions politiques définies dans l'espace politique. Nous mettons ainsi en lumière les changements significatifs dans les bases sociales du vote et de la proximité partisane de 1978 à 2002, notamment après le point de rupture de 1995 et la montée des questions européennes dans le débat politique. Ceci a d'importantes implications en termes d'opportunités de mener un changement institutionnel, que nous détaillons plus avant dans le chapitre.

Comment la fragmentation des partis relaie-t-elle les préférences pour la redistribution dans les démocraties parlementaires ? Le Chapitre 3 met en lumière l'interaction entre le nombre de partis (une caractéristique de la concurrence politique) et la dispersion des préférences pour la redistribution (une caractéristique de la demande politique), et son impact sur le niveau de générosité de l'Etat social.

Nous menons des régressions sur un échantillon de 18 pays de l'OCDE sur une période de 23 années, en traitant attentivement les questions soulevées par l'utilisation de données temporelles en coupes transversales (données longitudinales ou de panel). Les données proviennent de bases de données microéconomiques (préférences pour la redistribution) et de bases de données macroéconomiques (politique économique, fragmentation des partis). Notre argument capture l'affirmation selon laquelle le degré de fragmentation des partis politiques a un impact positif sur le niveau de dépenses publiques (Crepaz, 1998 ; Milesi-Feretti, Perotti et Rostagno, 2002 ; Persson, Roland et Tabellini, 2007). Cependant, nous tenons compte d'un canal additionnel, jusqu'alors négligé par la littérature : l'effet de composition de la demande. En utilisant l'interaction entre l'offre et la demande, notre objectif est de montrer que les demandes conflictuelles d'agents hétérogènes peuvent trouver un moyen d'être exprimées dans les politiques publiques, selon l'architecture de la médiation politique.

Nos résultats sont triples. Premièrement, nous montrons que le niveau des préférences pour la redistribution ont un impact direct sur la générosité de l'Etat social. Deuxièmement, nous montrons que l'hétérogénéité de la demande, plus que le niveau de cette demande, a un impact positif fort sur la générosité des politiques sociales. Troisièmement, l'impact de la demande est conditionné par la structure des partis : l'effet positif de la demande (que ce soit en niveau ou en dispersion) est ainsi renforcé par le degré de fragmentation du système de partis.

La principale contribution de ce chapitre à la littérature existante est d'utiliser une mesure directe des préférences pour la redistribution afin d'expliquer l'évolution de la générosité des politiques sociales. De manière importante, nous analysons aussi l'effet de composition de la demande sur la politique économique. Enfin, nous mettons en lumière la complémentarité entre l'hétérogénéité de la demande et le niveau de fragmentation des partis, et dérivons un effet d'une ampleur importante sur la politique économique.

Chapitre 1

Preferences for Redistribution : a European Comparative Analysis

What explains people's preferences for state intervention in social policies ? Conducting a cross-section analysis on individual-level survey data, we highlight the link between the economic position of agents and their specific demand toward redistribution. Controlling for a number of factors usually found to impact individual preferences in the literature, we take the egoistic motives for redistribution seriously and focus on the role played by the occupational status of individuals in shaping their preferences. Thus, (i) we estimate the relative importance of economic factors in terms of current and expected gain, allowing for social mobility experience and risk aversion. Further, (ii) we try to identify which socio-political groups could be formed on the basis of their preferences for redistribution. Finally, (iii) we highlight differences between European countries as it comes to the grouping of agents.

1.1   Introduction

What explains people's preferences for state intervention in social policies or more specifically preferences for redistributive policies ? In this chapter, we conduct a cross-country analysis on the determinants of preferences for redistribution in Europe using individual-level survey data. We take the egoistic motives for redistribution seriously and estimate the relative importance of economic factors in terms of current and expected gain, allowing for social mobility concerns and risk aversion. To do that, we use ISSP (International Social Survey Programme) data on four European countries (Great Britain, Sweden, France and Germany) that represent ideal cases relative to the welfare state in Europe, and test the empirical validity of the main propositions of the literature using ordered logit regressions. We substantively assess the relative importance of each explanatory variable and conduct a series of robustness checks.

Throughout the analysis, our focus is on the role played by the occupational status of individuals in shaping their preferences for redistribution. Adopting a political economy viewpoint on the more general question of what determines redistributive policies, we further try to identify which socio-political groups could be formed on the basis of their preferences for redistribution. Indeed, the changing weight of social groups and the degree of homogeneity that exists inside groups crucially influences the political outcome[1]. The analysis of demand concerning social policies and the identification of social groups that formulate this demand are then necessary to be able to determine, in a comparative perspective, the support for potential reforms concerning the welfare state in Europe (Castanheira *et al.*, 2006).

There is a rapidly growing literature on the determinants of preferences for redistribution, with a large variety of arguments proposed to explain differences

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1. See on this point the political economy model of Pagano and Volpin (2001, 2005), and its extension by Amable and Gatti (2004, 2007).

in attitudes towards the welfare state. This goes from purely pecuniary factors (Meltzer and Richard, 1981) to purely cultural factors (Algan and Cahuc, 2006), through subjective social positioning (Hirschman, 1973) or expectations of social mobility (Benabou and Ok, 2001). Our contribution to the existing literature is threefold : (i) We substantively assess the importance of the variables identified in the literature, infer a hierarchy in the arguments and emphasize the supremacy of economic factors in shaping preferences for redistribution ; (ii) We identify the different social groups who might support redistribution according to their position on the labor market ; (iii) We highlight differences between countries as it comes to the grouping of agents (hence potential coalitions) based on their policy preferences.

The rest of the chapter is organized as follows. Section 1.2 presents the literature on the determinants of preferences for redistribution. Section 1.3 explains our empirical strategy, the data used and the careful construction of variables. Section 1.4 illustrates the econometric results, while Section 1.5 conducts a series of robustness checks. Section 1.6 concludes. Technical details on the econometric specification can be found in the appendix, along with descriptive statistics of the data and the results of robustness checks.

1.2 Literature

A recent body of the economic literature addresses the problem of the formation of preferences for redistribution.

The standard viewpoint is to consider a purely pecuniary factor as determining individual preferences (Meltzer and Richard, 1981) : individuals whose income is below the mean income of the population ask for redistribution, given that they will directly benefit from it ; symmetrically, individuals whose income is above the mean do not favor redistribution as they are net contributors. The-

refore, if the median income is below the mean income in the population, a majority of voters will be in favor of redistribution. In their study of the differences between the level of welfare state in the United States and in four European countries (France, Germany, Sweden and the UK), Alesina and Glaeser (2004) show that the empirical validity of this argument is highly controversial.

Adding the "prospect of upward mobility" to enrich the standard model and assuming that a change in politics can not happen to often, Benabou and Ok (2001) leave a room for individuals whose income is just below the mean to rationally oppose redistributive policies. Then, there may be a "preference for inequality" (Suhrcke, 2001) linked to the fact that a majority of voters expect an upward mobility in the future, thus a net cost to redistribution (Clark, 2003; Senik, 2005). A similar argument has been recently tested by Alesina and La Ferrara (2005) using an objective mobility matrix.

But how do individuals estimate their chance of future mobility? Piketty (1995) assumes a learning process that leads individuals to take into account not only their current income, but also their personal mobility history to compute their future income. Using their personal mobility experience, individuals, who do not know the true role of effort in determining income, update their initial beliefs (randomly distributed) while evaluating the cost of redistribution. Therefore, an individual who believes that effort is rewarded by the society and who experiences an upward mobility would have an incentive to oppose any redistributive policy and to pursue its effort to increase his social position. These beliefs, in the long run self-fulfilling[2], imply multiple equilibria leading for instance the US to promote effort (thus to oppose redistribution) and European countries to reward chance (thus to favor redistributive policies). The standard income effect usually assumed in the Public Choice theories with an egoistic median voter may thus be false, since the effect comes from endogenous beliefs about the role of

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2. See Piketty (1998) for a theoretical explanation of the persistence of inequalities.

effort[3]. More recently, Fong (2001), Alesina and Angeletos (2005) and Benabou and Tirole (2006) have revisited the relationship between collective beliefs on the relative importance of individual effort in one's success and the demand for redistribution.

The relative income does also play a role in determining preferences, as pointed out by Ravallion and Lokshin (2000) who take advantage of the "tunnel effect" originated by Hirschman (1973). In this approach, beliefs are strongly related to the way other people move in the society. The tunnel refers to a situation where a car driver is blocked in a traffic jam. If the queue beside him is moving, whereas his queue is stationary, the individual first has a positive reaction : the traffic jam is probably close to the end, and his queue will move very soon, too. But if, after a while, his queue still does not move, the individual is not only unsatisfied to be stuck, but his discontent is raised by the fact that other drivers next to him do move. This double effect is called the *tunnel effect*. Attitudes of individuals clearly depend on their expectations, and their expectations rely on the observation of others. Ravallion and Lokshin (2000) and Corneo and Grüner (2000, 2002) find empirical support for this relative social mobility argument, using Russian data for the former, and international survey data (ISSP 1992) for the latter.

Finally, a growing body of the literature focuses on behavioral and cultural values as determinants of preferences for redistribution[4]. Alesina and Fuchs-Schündeln (2007) argue that there is a long lasting impact of political regimes on collective beliefs about redistribution. The authors take advantage of the natural experiment of East Germany to assess the impact of Communism on people's preferences for redistribution. Alesina, Glaeser and Sacerdote (2001) and Roe-

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3. See Piketty (1999) for a test on French data.

4. See Algan and Cahuc (2006) for an international comparison using World Value Survey and ISSP (1991, 1998) that explains differences in welfare states and labor market institutions by differences in civic attitudes ; See Amable (2008) for an empirical evaluation on European Social Survey data of the importance of cultural factors relative to other "materialists" factors in the individual support for the European social model.

mer and Van der Straeten (2005, 2006) focus on the racial conflict that could explain the refusal of redistribution, when individuals expect migrants to take all the benefit from it. Clark and Lelkes (2005) and Scheve and Stasavage (2006) highlight the role of religion as a substitute to public redistribution. The hypothesis tested by the authors is that the social distress due to an economic shock (e.g. unemployment) is dampened if the individual belongs to a social network. Religion might be such a network. In all these studies, the insurance motive of redistributive policies (Buchanan and Tullock, 1962) is tackled[5].

In the following, we test the empirical validity of these propositions on a sample of European countries. Adopting a political economy viewpoint on the more general question of what determines redistributive policies, we try to identify which socio-political groups could be formed on the basis of their preferences for redistribution. Throughout the analysis, the hypothesis is that preferences for redistribution rely on the economic positioning of agents on the labor market. Thus, conducting a cross-country analysis on the determinants of preferences for redistribution in Europe, we contribute to the existing literature in three ways. First, we assess the relative importance of the factors identified to impact preferences for redistribution and reveal the key role played by economic variables, as compared to cultural factors. Second, we identify the different occupational groups who might support redistributive policies. Third, we highlight differences between countries, especially as it comes to the grouping of agents who support redistribution.

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5. See Rehm (2005) for an empirical test on European Social Survey data of diverse insurance motives (globalization, deindustrialization) as determinants of preferences for redistribution.

1.3 Empirical Strategy

1.3.1 Estimation Process

We proceed to an ordered logit regression, since the variable to be explained encompasses discrete choices that can be easily ordered on a Likert scale[6]. Ordered models assume the existence of threshold values, thus implying an ordering to the categories of the dependent variable. More precisely, a latent variable is supposed to capture the outcome, following a decision rule based on those cut-points parameters that need to be estimated (see the appendix for a formal explanation on this).

The equation to estimate can be defined as follows :

$$Y_i^* = \gamma D_i + \chi E_i + \delta M_i + \phi V_i + \eta C + \epsilon_i \tag{1.1}$$

where vectors γ, χ, δ, ϕ, η and ϵ are parameters to estimate, and Y_i^* is the latent variable, i.e. the intensity of preferences for redistribution.

D is a vector of individual socio-demographic characteristics (age, sex, marital status). E is a vector that measures the socio-economic position of individuals (type of occupation, current income, risk aversion). This vector includes also a binary variable for individuals who are union members. M is a vector of binary variables that captures the personal social mobility experience and the perception

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6. The Likert scale is commonly used to measure the degree of satisfaction of individuals. This type of scale uses a classification in 5 points, that goes from the strong agreement to the simple agreement, indifference, disagreement, and strong disagreement to rank attitudes. Even though some scholars treat this scale as being an interval scale (hence applying OLS estimates), we do not know whether the distances between the different alternatives are equal (i.e. the gap between "strongly agree" and "agree" is not necessarily of the same magnitude as the gap between "agree" and "indifferent"). Therefore, the presence of a Likert scale calls for the use of categorical dependent variable regression models (CDVMs). Unlike the OLS, CDVMs are not linear.

of mobility relative to the father, or alternatively the subjective social position. V is a vector of dummies that captures cultural values, here reduced to the religion of individuals and the intensity of their religiosity. In the finer study of Germany, we include a dummy for living in former East Germany, in order to capture a potential long lasting effect of the communist regime on preferences. Finally, C is a vector of country dummies, and ϵ is the error term.

We do not observe Y_i^*, but a variable Y_i that takes the values 1 to 5 and increases with the individual support for redistribution. In particular, we have :

$$Y_i = j \text{ if } \alpha_{j-1} \leq Y_i^* < \alpha_j \tag{1.2}$$

for $j = 1, ..., 5$ where α_j are cut points to estimate, assuming that $\alpha_0 = -\infty$ and $\alpha_5 = +\infty$.

The interpretation of categorical variables estimates is not straightforward (King *et al.*, 2000 ; Tomz *et al.*, 2003). Coefficients give us the marginal effect of a unit variation of the independent variable on the value of the latent variable. However, we do not know the value of the latent variable, but only its cut points. Therefore, a first interpretation of results is done through the interpretation of the *sign of coefficients* and of their *statistical significance*. Notice that within the same regression, the magnitude of coefficients is comparable. We thus interpret the relative impact of independent variables in terms of *odds ratios* (i.e. for a unit increase in x, the odds of a lower outcome compared with a higher outcome are changed by a factor β, holding all other variables constant). We further assess the substantive effect of coefficients by computing *predicted probabilities* for a few ideal types (Long and Freese, 2006).

1.3.2 Data

Our micro-econometric analysis is based on the ISSP dataset "Social Inequality III" (International Social Survey Programme - 1999). Questions of the survey deal with the political demand, votes, social and economic characteristics of individuals (between 500 and 1000 respondents per country). We select four countries in the dataset, that correspond to four ideal cases relative to the welfare state in Europe, according to the literature (Esping-Andersen, 1990 ; Amable, 2003 and 2005) : Great Britain, which has the lowest level of welfare state and is based on a Beveridgean individualistic logic ; Sweden, which has the highest level of welfare state and an universalist and egalitarian system ; France and Germany that are the two biggest European countries and have a welfare state based on the insurance system originated by Bismarck.

To measure attitudes towards redistribution, we assume that agents are sincere revealers of their preferences, while answering to the following survey question :

> "What is your opinion of the following statement : It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes."

For presentational purpose, the original scale has been inverted, from cons to pros in five categories : 1 Strongly Disagree, 2 Disagree, 3 Neither Agree Nor Disagree, 4 Agree, 5 Strongly Agree. The distribution of answers is shown in the Tables below (see also Figures 1.1 and 1.2 in the appendix).

Tab. 1.1: Distribution of answers by country

%	Germany	GB	Sweden	France	Total Sample
Strongly disagree (SD)	5	2	6	6	5

To be continued next page...

TAB. 1.1: Distribution of answers by country (cont')

%	Germany	GB	Sweden	France	Total Sample
Disagree (D)	17	13	13	14	14
Don't know (NN)	17	17	22	17	18
Agree (A)	42	48	36	30	37
Strongly agree (SA)	19	19	24	33	25
Total	100	100	100	100	100

Question : "It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.". Source : ISSP 1999 - Social Inequality III

TAB. 1.2: Distribution of answers by occupation

%	SD	D	NN	A	SA	Total
Managers	12	24	18	29	16	100
Professionals	10	20	18	33	20	100
Associate professionals	5	12	20	38	25	100
Clerks	3	13	16	40	29	100
Service workers	2	9	18	41	30	100
Agricultural workers	7	8	20	38	28	100
Craftsmen	3	14	19	39	25	100
Machine operators	3	9	14	42	32	100
Elementary workers	4	6	16	39	35	100
Total sample	5	14	18	37	25	100

Question : "It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes.". Source : ISSP 1999 - Social Inequality III

1.3.3 Testing the Argument

We further select in our dataset a series of explanatory variables, each of which corresponding to a possible explanation of the formation of preferences. The causal link involved is briefly exposed below.

Occupation ISCO-88 (International Standard Classification of Occupations[7]) : The type of occupation, which depends on skills level and specialization, is assumed to influence preferences of agents regarding social policies. Indeed, according to Iversen and Soskice (2001), specific jobs are more threatened by globalization and macro shocks than others. Moreover, specialized workers have more difficulties to find vacancies that correspond to their specialty (Estevez-Abe *et al.*, 2001). Consequently, agents with *specific skills* are supposed to be more supportive of the welfare state, compared to agents with *general skills*. To test their argument, the authors construct a linear *skill specificity index* based on ISCO classification. However, we do not see any reason why all specific skills -by definition specific to a job or a sector- would be threatened in the same way by globalization or macro shocks. Thus, the linearity of the effect does not seem intuitive to us. Moreover, the skill specificity index of the authors is negatively related to the level of education of workers (Cusack *et al.*, 2006, p.371).

Thus, to ease the argument and the interpretation, we simply cluster the ISCO indicator into the 9 major groups indicated by the ILO and strongly related to the *education degree* of individuals and the level of *in-the-job training* they received[8]. Importantly, by entering occupation major groups as binary variables

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7. As EUROSTAT (1994, p.1) clearly explains : "ISCO-88 organizes occupations in an hierarchical framework. At the lowest level is the unit of classification -a job- which is defined as a set of tasks or duties designed to be executed by one person. Jobs are grouped into occupations according to the degree of similarity in their constituent tasks and duties. [...] For the purpose of aggregating occupations into broadly similar categories at different levels in the hierarchy, ISCO-88 introduces the concept of skill, defined as the *skill level* -the degree of complexity of constituent tasks- and *skill specialization* -essentially the field of knowledge required for competent performance of the constituent tasks.".

8. See Tables 1.11 and 1.12 in the appendix.

into the regression, we are able to assess which occupations can be grouped to-
gether according to the similarity of their political demand. The major groups
we use are the following : Manager, Professional, Associate professional, Clerk,
Service worker, Craftsman, Machine operator, Elementary worker. Agricultural
workers are excluded from our sample, since their size is too small and their
composition too heterogeneous to infer robust results.

Income The higher income an individual has, the less he needs public funding,
hence the less he should be in favor of social spending (Meltzer and Richard,
1981). On the other hand, the higher income an individual has, the more he
has to loose providing he falls into unemployment, if he does not earn replace-
ment benefits. Hence, the linearity of his preferences towards redistribution is
not theoretically obvious and calls for more precise tests at the empirical level
(Moene and Wallerstein, 2001). Therefore, current income enters the regression
in quintiles, from the lowest (Q1) to the highest (Q5) level of income[9].

Risk Aversion The employment status (workers in the private sector, self-
employed and publicly employed) is used to proxy risk aversion. Self-employed
workers are supposed to be less risk averse than average (Alesina and La Ferrara,
2005), while publicly employed people are supposed to be more risk averse than
average. Indeed, public employees are less likely to loose their job : Job tenure
is more insured in the public sector than in the private sector. This is especially
true in France and in Sweden. Assuming a decision process while choosing their
work status, those individuals who have chosen to be publicly employed should
correspond to more risk averse people. Furthermore, the level of public employ-

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9. In order to ease comparison and interpretation, the income variable is considered in
quintiles and labeled in the country money. However, keeping the original coding does not
affect the results. On the contrary, quintiles being less precise than the original data, this gives
power to the analysis, as current income remains an important regressor while considered in
quintiles.

ment directly relies on the size of government, and more particularly on the size of social programs. Therefore, public employees have a direct interest in supporting redistributive policies.

Unions We measure the belonging to a trade union or employers' association by a dummy for union membership. The idea is that union members are better informed about the costs and benefits of redistribution. Moreover, union members are supposedly willing to influence public policy decisions, by giving power to an organization that gathers common interests (Olson, 1965).

Religion Religious denomination (dummies for Catholic and Protestant) and church attendance are used to assess the validity of the literature results in our sample (Clark and Lelkes, 2005 ; Scheve and Stasavage, 2006).

Social Class In order to infer the potential impact of the subjective social ranking on attitudes towards redistribution, we use the self-positioning of agents on a social scale that ranks from 1 (top) to 10 (bottom). We define two binary variables : upper class (positioning from 1 to 4) and lower class (from 7 to 10). Individuals who positioned themselves on the 5th and 6th ranks are considered to belong to the middle class (our reference category). We thus expect a negative effect of individuals who express the feeling to belong to the upper class on preferences for redistribution, and a positive effect of individuals having the feeling to belong to the lower class, relative to those who belong to the middle class.

Social Mobility We use two different specifications to assess the social mobility argument. The first one is the self-assessment by individuals of their job prestige, compared to their father's. This specification can also be found in Corneo and Grüner (2002) and in Alesina and La Ferrara (2005). The second specification

we use is the personal history of individuals, concerning their social mobility. To construct this variable, we use the previous question on the self-positioning of individuals on a social scale : Indeed, the question is asked twice, for today and regarding 10 years ago (*ex post* assessment). We calculate the difference between both answers to measure the subjective social mobility of respondents and classify the newly created variable in 3 categories (upward mobility, immobility, downward mobility). This is a direct test of the argument of Piketty (1995), stating that people who experienced an upward mobility should oppose redistribution, while people who experienced a downward mobility should support redistribution. Our reference category gathers people who consider they did not experience any mobility within the last 10 years.

As a set of control, we introduce the following variables : Gender (dummy for female), age and age squared (to allow for concavity), and marital status (dummy for individuals who are married or live as married).

An important variable that could have been introduced into our analysis is the education level of individuals. Because it is already included into our ISCO variable, it has not been put into the regression to avoid multicollinearity. However, if tested separately, we find the same result as in the literature : The more educated an individual is, the less does he favor redistribution. The explanation for this is twofold. First, the more he studies, the more he is informed, hence the more he knows about the cost and benefits of redistribution ; Second, the more he studies, the higher his productivity and wage, thus the more he pays taxes while employed. Therefore, the less he will favor redistribution that represents a net cost for him[10]. Finally, another interesting explanatory variable would be the work status of individuals (unemployed, disabled, retired, part-time, etc.).

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10. If we further assume that long-term unemployment risk is decreasing with education, this effect is emphasized.

Unfortunately, the high number of missing points on this question constrained us to let this set of variables out of the regression.

1.4 Results

We first run a pooled country regression that constrains the residual variance to be the same, hence assuming the homogeneity of unobserved variables. While presenting the results of our estimates, we systematically provide odds ratios to compare the impact of explanatory variables in a meaningful way. Indeed, odds ratios allow to interpret a unit increase in x_k as a change in the odds of a lower outcome compared with a higher outcome by a factor β_k, holding all other variables constant. We next propose a few ideal types and compute their predicted probabilities to fall into one or the other category of our dependent variable. Econometric results are provided in Table 1.3 for the pooled country regressions, using ordered logit estimation technique. Predicted probabilities are gathered in Table 1.4 for four different ideal types.

Throughout the regression Table, column [1] presents our baseline model, which includes only explanatory variables linked to the labor market (occupation, income, employment status, union membership) and the usual control variables (socio-demographic characteristics, country dummies). Columns [2] and [3] extend the baseline model with variables related to religion. These include the frequency of church attendance (column [2]) and the religious denomination (column [3]). The aim is here to test the validity of arguments emphasizing the role of religion in the formation of preferences for redistribution. Column [4] extends the baseline model by incorporating dummy variables for the social class of individuals (upper class, lower class). Our reference category is the middle class. Finally, columns [5] and [6] test the arguments linked to the role of subjective social mobility in the formation of preferences for redistribution. More particu-

larly, column [5] tests the argument of intergenerational mobility, while column [6] tests the impact of personal mobility history on preferences for redistribution. Following our baseline model throughout the different regressions allow us to assess the robustness of the impact of economic variables.

1.4.1   The Supremacy of Economic Factors

Running an ordered logit regression on pooled country data (Table 1.3), it clearly appears that the economic factors we have identified in the previous discussion do play a crucial role in determining preferences for redistribution (occupation, income, risk aversion). Not surprisingly, family income is a good predictor of preferences : The higher it is, the lower the individual support for redistribution[11]. This is a simple revenue effect : Wealthier individuals are directly burdened by redistributive policies, while low income should gain from it. The result also implies that the supposed insurance effect remains relatively modest compared to the revenue effect.

Our proxies for risk aversion are also shown to have an important effect on preferences for redistribution. Self-employed workers, who are supposed to be less risk averse than dependent employees, are indeed less in favor of redistribution : Their odds of having more *negative* attitudes toward redistribution are 1.3 times (30%) larger than dependent employees. To the contrary, more risk averse people, proxied by public employees in our sample, appear to be strongly and significantly in favor of redistributive policies : Their odds of having more *positive* attitudes toward redistribution are 1.5 times (50%) larger than workers in the private sector.

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11. Notice that the result of the Chow test (H0 : equal coefficients) for income quintiles is $\chi^2(3) = 32.37$, $p < 0.01$, meaning that the categories of income are not evenly spaced, so we should not treat income as an interval scale variable. It implies that an increase from the first quintile of income to the second quintile of income does not involve a similar decrease in the probability to favor redistribution, as an increase from the second quintile to the third quintile of income. This is the reason why we keep entering income quintiles separately into the regression.

Finally, the type of occupation that individuals do is also a good predictor of their preferences, even after controlling by income. Indeed, in all our specifications, our occupation indicator is strongly and significantly related to our dependent variable. We interpret the coefficients relatively to our reference category, which represents a Clerk. Thus, the negative and significant coefficients of Managers, Professionals and Associate professionals indicate that individuals who belong to these types of occupation are clearly less in favor of redistribution than Clerks : based on column [1], the odds of having more *negative* attitudes toward redistribution are 2.1 times (110%) larger for Managers than for Clerks, 1.6 times (60%) larger for Professionals than for Clerks, and 1.25 times (25%) larger for Associate professionals than for Clerks. By opposition, Machine operators and Elementary workers are much more in favor of redistribution than Clerks : Their odds of having more *positive* attitudes toward redistribution are increased by, respectively, 43% and 38% compared to Clerks. Finally, Service workers and Craftsmen have attitudes toward redistribution that cannot be distinguished from those of Clerks (non significant coefficients). Results clearly suggest that a straight ordering of occupation categories may be relevant : The less skills an individual has, the higher his probability to favor redistributive policies. Results further suggest that a grouping of occupation categories might be drawn, according to the proximity of their coefficients : (i) Elementary workers and Machine operators do have the same attitudes towards redistribution ; their attitudes differ from those of (ii) Craftsman, Service workers and Clerks ; finally, (iii) Associate professionals, Professionals and Managers do form another group, which encompasses similar attitudes towards redistribution.

1.4.2   Does Religion Act as a Substitute to Redistribution ?

Columns [2] and [3] introduce variables on church attendance and religious denomination, respectively. Our results confirm the argument of Scheve and Stasavage (2006) : Religion seems to act as a substitute for redistributive policies. Being Catholic increases the odds of having more *negative* attitudes toward redistribution by 30%, while being Protestant increases it by 24%, relative to having no religion[12]. According to the literature, this could be due to an insurance effect of religious communities that lessen the social distress of individuals, hence their need for redistribution. Indeed, Clark and Lelkes (2005) have shown that religious individuals suffer from significantly lower estimated losses in subjective utility after adverse life events, such as unemployment. However, our results for religion, if not vanished, are less clear cut when it comes to separated country regressions (Tables in the appendix). We come back to this point in the conclusion, assembling all our results to infer a general picture of the issue.

1.4.3   How Does Individuals' Social Self-ranking Affect their Support for Redistribution ?

Column [4] introduces the subjective belonging to a social class. We try here to capture the differentiated impact on preferences of an individual's feeling to belong to the upper or to the lower class. Not surprisingly, individuals who express the feeling to belong to the upper class are less inclined to favor redistribution than those who subjectively belong to the middle class (our reference category) : Their odds of having more *negative* attitudes toward redistribution is increased by 43%. Symmetrically, individuals who (subjectively) belong to the lower class have a higher probability (increased by 60%) to favor redistributive policies.

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12. The category "other religion" is quite negligible, representing only 3% of the population in our sample. Including it into the regression does not change the results.

Two remarks have to be done, concerning the incorporation of this variable into our model. On one hand, the *subjective* feeling to belong to a certain social class is highly correlated to *objective* variables of job occupation and family income. Notice indeed that the introduction of the social class variable decreases the coefficients of occupation and income, although it does not strongly affect their significance. On the second hand, two individuals who have the same occupation and a similar family income may have different views of their social position. The self-positioning of an individual on the social ladder thus captures the feeling he has regarding his relative ranking, hence his vision of the society where he lives (this could even act as a proxy of his social satisfaction).

1.4.4 The Strong Impact of Subjective Social Mobility on Preferences for Redistribution

Columns [5] and [6] introduce the social mobility argument. Two different specifications are tested. The first one (column [5]) tries to capture the effect of intergenerational social mobility in a family context. Surprisingly, the coefficient of job prestige is positive. Taking the result seriously, this would mean that an individual who considers his job as more prestigious than his father's would yet be inclined to have a more *positive* attitudes towards redistributive policies (increased by 13%). Apart from intergenerational altruism, this effect could be due to a long-lasting effect of family experience (an impact of the social position of parents on the believes and attitudes of children). This result is consistent with the argument of Piketty (1995) about endogenous believes of individuals.

Our second specification of social mobility (column [6]) has a more straightforward interpretation. We use individual perceptions of personal upward or downward mobility within the last ten years. Our reference category encompasses those individuals who experienced no social mobility. Coefficients have the expected signs : Individuals who get the feeling to have experienced an upward

mobility are less supportive to redistributive policies than people who did not experience any mobility, whereas people who experienced a downward mobility within the last ten years are more in favor of redistribution. The odds of the former to have more *negative* attitudes toward redistribution is increased by 26%, while the odds of the latter to have more *positive* attitudes toward redistribution is increased by 27%. Notice again that this is not an *objective* indicator of social mobility, but a *subjective* one[13]. Although the effect is highly significant.

1.4.5   Socio-demographic Controls and Country Dummies

Whereas being married (or living as married) has no significant effect on preferences for redistribution, being a female clearly increases the probability to have more favorable attitudes towards redistribution (by 41%, according to our baseline model in column [1]). As for age, if middle age people are more in favor of redistribution than the youth, this effect is dampened through time (concave function).

Turning now to country dummies, the puzzle is the following. Great Britain is our reference category. The negative and highly significant coefficients for Sweden and Germany mean that living in one of those countries leads individuals to adopt more negative attitudes towards redistribution (the odds of *negative* attitudes are increased by 47% and 31%, respectively), as compared to British citizens, all other things being equal. The difference between Great Britain and France is not significant. However, country dummies do not give any information on the reason why this is so. Indeed, they simply have the role of "capturing" country specific potential omitted variables, which might have an impact on the preferences of individuals for redistribution (level of income inequality, actual redistributive policy, unemployment rate, demographic situation, etc.). Including country dummies into the regressions thus allows to produce unbiased estimates

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13. For the use of objective indicators of social mobility, see the contribution of Alesina and La Ferrara (2005).

of our variables of interest. The fact that country dummies do have significant coefficients means that there are, indeed, differentiated national attitudes. These dummies are like "black boxes", whose information needs to be manually extracted. It might thus be relevant to run separated regressions for each country (see Section 1.5 below).

TAB. 1.3: Preferences for redistribution : pooled country

Ordered logit	[1]	[2]	[3]	[4]	[5]	[6]
Occupation						
Reference category : Clerk						
Manager	-.763***	-.727***	-.761***	-.600***	-.764***	-.700***
	(.156)	(.158)	(.158)	(.158)	(.160)	(.158)
Professional	-.471***	-.448***	-.522***	-.310**	-.496***	-.441***
	(.126)	(.127)	(.128)	(.127)	(.128)	(.127)
Ass. professional	-.223*	-.226*	-.265**	-.182	-.247**	-.235**
	(.116)	(.118)	(.119)	(.117)	(.117)	(.117)
Service worker	.069	.051	.066	.068	.069	.088
	(.124)	(.129)	(.128)	(.125)	(.129)	(.126)
Craftsman	.129	.080	.146	.084	.096	.089
	(.135)	(.139)	(.138)	(.136)	(.138)	(.136)
Machine operator	.360**	.325**	.382**	.316*	.324**	.346**
	(.160)	(.163)	(.166)	(.164)	(.161)	(.163)
Elementary worker	.327*	.254	.331*	.223	.351*	.296*
	(.176)	(.183)	(.177)	(.175)	(.186)	(.177)
Income						
Reference category : Family income Q5						
Family income Q1	1.066***	1.071***	1.016***	.823***	1.071***	1.016***
	(.122)	(.125)	(.125)	(.127)	(.125)	(.125)
Family income Q2	.925***	.963***	.892***	.755***	.895***	.878***
	(.119)	(.122)	(.122)	(.123)	(.122)	(.122)
Family income Q3	.928***	.940***	.889***	.802***	.926***	.884***
	(.108)	(.111)	(.111)	(.111)	(.110)	(.111)
Family income Q4	.729***	.705***	.709***	.651***	.701***	.716***
	(.106)	(.109)	(.108)	(.108)	(.108)	(.108)
Employment status						
Self-employed	-.282**	-.268*	-.341**	-.253*	-.295**	-.273*
	(.138)	(.142)	(.140)	(.138)	(.140)	(.140)
Publicly employed	.397***	.413***	.396***	.387***	.407***	.397***

To be continued next page...

TAB. 1.3: Preferences for redistribution : pooled country (cont')

Ordered logit	[1]	[2]	[3]	[4]	[5]	[6]
	(.078)	(.079)	(.080)	(.078)	(.081)	(.079)
Unions						
Union membership	.268***	.284***	.284***	.264***	.266***	.301***
	(.084)	(.086)	(.086)	(.085)	(.085)	(.085)
Demographic characteristics						
Female	.344***	.362***	.350***	.307***	.341***	.315***
	(.074)	(.077)	(.076)	(.075)	(.077)	(.075)
Age	.029**	.029**	.030**	.024*	.026*	.023
	(.014)	(.014)	(.014)	(.014)	(.014)	(.014)
Age-sq/100	-.032**	-.031**	-.031**	-.026*	-.029**	-.028*
	(.014)	(.014)	(.014)	(.014)	(.015)	(.015)
Married	-.047	-.039	-.044	-.068	-.047	-.032
	(.081)	(.083)	(.083)	(.082)	(.084)	(.083)
Country						
Reference category : Great Britain						
Sweden	-.386***	-.412***	-.334***	-.276***	-.408***	-.399***
	(.104)	(.108)	(.108)	(.105)	(.107)	(.105)
Germany	-.271**	-.290***	-.294**	-.277***	-.310***	-.281***
	(.105)	(.109)	(.122)	(.106)	(.109)	(.107)
France	.131	.032	.193	.148	.105	.151
	(.106)	(.110)	(.119)	(.108)	(.109)	(.110)
Religion						
Church attendance		-.098***				
		(.026)				
Catholic			-.265**			
			(.105)			
Protestant			-.221**			
			(.087)			
Social class						
Reference category : Middle class						

To be continued next page...

TAB. 1.3: Preferences for redistribution : pooled country (cont')

Ordered logit	[1]	[2]	[3]	[4]	[5]	[6]
Upper class				-.356***		
				(.091)		
Lower class				.465***		
				(.085)		
Social Mobility						
Job prestige					.124*	
					(.074)	
Reference category : No mobility						
Upward mobility						-.235***
						(.080)
Downward mobility						.244***
						(.094)
Number of Obs	3064	2924	2921	3026	2918	2994
Pseudo R-Squared	.045	.047	.048	.052	.046	.048
Log Pseudolikelihood	-4270.5	-4068.4	-4070.1	-4185.5	-4071.3	-4155.9
Chi 2	358.81	357.45	370.60	405.15	346.54	373.42

Note : Robust standard errors in parentheses. $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

1.4.6   Predicted Probabilities

To further illustrate our results, we make use of predicted probabilities to assess the relative importance of a few independent variables. Based on Table 1.3, Model [5] with social mobility, we construct four ideal types and compute their predicted probabilities of having different attitudes toward redistribution. Our first two ideal types are a Male Self-employed Manager in the Private sector (Type 1) and a Female Elementary worker employed in the Public sector (Type 2). Results are shown in Table 1.4. We clearly see the strong impact of occupation on predicted outcomes, along with the gender dimension and risk aversion.

Tab. 1.4: Preferences for redistribution : predicted probabilities

	Type 1	Type 2	Type 3	Type 4
Strongly Disagree	.12	.02	.05	.03
Disagree	.27	.06	.15	.11
Neither agree Nor disagree	.25	.12	.21	.17
Agree	.27	.39	.39	.41
Strongly Agree	.09	.41	.19	.28

Note : Based on Table 1.3, Model [5]. Predicted probabilities for different ideal types, holding all other variables constant at their means.
Type 1 : Male, Self-employed, Private sector, Manager ; **Type 2** : Female, Publicly employed, Elementary worker ; **Type 3** : Average individual, Upward mobility ; **Type 4** : Average individual, Downward mobility

Our last two ideal types represent an Average individual, who experiences an Upward mobility (Type 3) or a Downward mobility (Type 4). An average individual has about 3 to 5% probability to strongly disagree with redistribution, about 11 to 15% probability to disagree with redistribution, 17 to 21% to have no idea about it, and 39 to 41% probability to agree with redistribution. But most importantly, he has 28% probability to strongly agree with redistributive policies if he experienced a Downward mobility, while this probability falls to 19% if he experienced an Upward mobility within the last 10 years. This example illustrates the non negligible impact of personal social mobility history on preferences for redistribution, as it was already visible with odds ratios.

1.5 Robustness Checks

We run a series of robustness checks, including binary regressions for the pooled data, a test of the proportional odds assumption, and separated country

regressions that allow to identify varying determinants of preferences for redistribution without needing to interact each variable with each country dummy. Results of binary regressions are given in Table 1.5, while Tables 1.6, 1.7, 1.8 and 1.9 in the appendix give results for the separated country regressions.

1.5.1   Binary Dependent Variable

As a first robustness check, we run the same pooled regressions with a binary dependent variable. People answering that they "agree" or "strongly agree" with the question on whether the government should reduce income differences were coded 1, whereas others (including "neither agree nor disagree", "disagree" and "strongly disagree" answers) were coded 0. Results are shown in the appendix (Table 1.5). They remain globally unchanged.

1.5.2   Generalized Ordered Logit

Further, we test the validity of the *parallel lines assumption*, also called proportional odds assumption (Long and Freese, 2006). Indeed, if the effect of an independent variable on our dependent variable is not uniform across categories, then the parallel lines assumption is violated, leading to a fallacious interpretation of the magnitude of the coefficient[14]. The test compares slope coefficients of the $J-1$ binary logits implied by the ordered regression model. In our pooled models, the Brant test indicates that the parallel regression assumption has been violated for control variables (age, age-squared, female, country dummies). We consider this is not a problem, as we do not interpret their substantive impact. Further, there is some evidence that it has been violated for the dummies representing publicly employed workers and union members, although not changing the sign of coefficients but only the magnitude of the impact according to the category of the dependent variable considered. The same issue is found for our dummy

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14. This can be tested through the Brant test (command *brant* in Stata).

variables representing Catholics and a downward mobility experience. We thus run *generalized ordered logit* estimates[15], in order to assess differentiated effects of these independent variables. However, no valuable additional information is given by this estimation technique, which marginally affects the magnitude of coefficients (but neither their significance, nor their sign), but does not tackle the essential message of this study[16]. Consequently, we remain confident with the inferences we made in Section 1.4 based on ordered logit estimates.

1.5.3 Separated Country Regressions

We finally check for the necessity of running separated country regressions. The pooled analyses include a fixed effect for each country to allow for different mean levels of support for redistribution due to any number of national characteristics, including the actual level of redistribution. However, this does not allow the effects of the other independent variables to vary across countries as is possible by estimating separate coefficients for each case. Running a Chow test to assess whether coefficients remain equal between countries, we find that the test is strongly significant[17], so that the hypothesis that the coefficients do not vary between countries is invalidated. Therefore, it is relevant to run separated country regressions. We thus estimate the models in Table 1.3 separately for each of the four countries in the sample. Tables 1.6, 1.7, 1.8 and 1.9 in the appendix report the coefficient estimates for Great Britain, Swede, France and

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15. Stata user-written command *gologit* written by Fu (1998) and extended by Williams (2006).

16. Notice that the only coefficients that can be affected by this technique are those of control variables, publicly employed, union membership, Catholic and downward mobility where the parallel line assumption has been violated. All other coefficients are left unchanged.

17. Given that H0 : equal coefficients, $\chi^2(66) = 170.71$, $p < 0.01$

Germany, respectively[18]. We briefly discuss the results, essentially pointing to the differences in the grouping of individuals by occupation category[19].

Notice first that in all our country estimates, the type of occupation an individual exercises remains a key factor in the determination of preferences for redistribution, along with the family income. This suggests the pooled estimates are not driven by a couple of outlier countries. However, these new estimates make clear that the grouping of individuals based on their role on the labor market and relying on similar individual preferences for redistribution highly differs from one country to another. Concerning the structure of the society for instance, we see two major socio-political groups in Sweden and in Germany, which are (i) the Managers (who could form a coalition with the Professionals and the Associate professionals in Sweden), and (ii) all other occupation categories. By contrast, there are three major socio-political groups in Great Britain and in France, which are (i) the Managers (associated to the Professionals and the Associate professionals in France), (ii) the Elementary workers in Great Britain and the Craftsmen in France, and (iii) the rest of the population. This suggests that political strategies to reform the welfare state in those countries might highly differ, since potential social coalitions based on common interests do differ (Castanheira *et al.*, 2006). Moreover, in France and in Sweden, another dimension clearly divides the population : The distinction between the public and the private sector, and between union members and non-union members. This is not surprising, knowing the importance of the public sector and the power of unions in both countries. Finally, as a specific feature of Germany, we find that the dummy for living in former East Germany is strongly related to the support for redistribution : The odds of being in favor of redistribution is almost 3 times larger if an individual

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18. In the pooled regressions, the reference category regarding the type of job occupation was a Clerk. For national regressions, we choose to modify our reference category to Managers, for presentational purpose. This does not affect the results at all, only the way to present it.

19. As there are no further controls in the separated country regressions, results should be taken with cautious. The main issue is here to assess the consequences of contextual effects on the variables of interest.

lives in East Germany, compared to an individual living in West Germany. We meet up here with Alesina and Fuchs-Schündeln (2007) result on the long lasting impact of political regimes on collective preferences.

1.6 Conclusion

Building on a rapidly growing literature on the political economy of redistribution, this chapter proposes an empirical analysis of the determinants of individual preferences for redistributive policies. Using individual-level survey data for four representative European countries, we run a series of regressions specified to assess the main arguments of the literature. We systematically compare coefficients in a meaningful way by the use of odds ratios and predicted probabilities. Consequently, (i) we are able to infer which factors are the most important in shaping attitudes towards redistribution, and clearly emphasize the supremacy of economic factors. We further argue that the position of individuals on the labor market has a direct impact on their preferences for redistribution. This appears to be indeed the case, and to be robust to a change in model specification. Hence, (ii) based on the results of our regressions, we draw a grouping of individuals along this occupational dimension. Finally, (iii) we highlight the differences between countries in terms of the potential varying effects of explanatory variables on the preferences for redistribution ; we thus give a hint on the need for diverse political strategies while implementing national reforms. Below is a summary of our results.

First, our analysis confirms the importance of a pure revenue effect on preferences. Indeed, work occupation, family income, subjective social class or expected social mobility all point to the same direction : The poorer (objectively or subjectively), the more supportive to redistribution. These attitudes towards redistribution are linked to the economic position of individuals on the labor

market. Indeed, generally speaking, Managers, Professionals and Associate professionals form a separate group from Clerks, by expressing a lower support for redistribution. On the other hand, Machine operators and Elementary workers form another group, which is more supportive to redistribution than Clerks.

Second, the revenue effect does not act similarly on all individuals. It can be reinforced (dampened) by the risk aversion (risk willingness) of individuals. Indeed, looking at the employment status of individuals, we find that being publicly employed sensitively increases the probability to support redistribution, while being self-employed decreases it. This is especially true in France and in Sweden. Hence, our proxies for risk aversion are good predictors of preferences for redistribution, which is not surprising if one considers the insurance motives of redistributive policies.

Third, the political and social backgrounds of individuals can somehow temper this effect : We find that (i) the social position of fathers can have a long lasting impact on the attitudes of children, (ii) the political regime can have a long lasting effect on collective preferences. These results clearly call for more research in the way social competition is perceived in European countries and the way it impacts social preferences (Fong, 2001 ; Alesina and Angeletos, 2005 ; Alesina and Fuchs-Schündeln, 2007).

Fourth, one of the most empirical issue in the literature on redistribution remains the question of whether religion plays an active role in shaping preferences. The conclusion is far to be obvious : According to our results, it seems impossible to say if Catholics are more pros or cons redistribution, and the same for Protestants since the sign of coefficients differs from one country to another. However, one can take a different view : The literature states that religion (without looking at specific denomination) decreases the social distress of individuals, hence decreasing the insurance motive for redistribution, potentially through network externalities. Taking the major religion of each country, results confirm this view.

Thus, Protestantism is the major religion of Great Britain and Sweden, while Catholicism is the major religion of France. In these countries, the effect of the major religion is indeed to decrease the probability to favor redistribution[20]. The effect is not clear-cut for Germany, but this is not surprising given that the country is fairly divided between both Protestantism and Catholicism. Further, looking at church attendance reinforces the conclusion that religion could play an active role in shaping preferences for redistribution.

Fifth, it seems that a cluster of countries might be drawn from the comparison of separated country regressions. Based on the socio-political groups formed by individuals who belong to different work occupations but express similar attitudes, we find on one hand France and Sweden, and on the other hand Germany and Great Britain. Indeed, Managers, Professionals and Associate professionals form an homogeneous group in France and Sweden, whereas Managers differentiate themselves from other categories of workers in Great Britain and Germany. On the basis of personal social mobility, other clustering are possible : Great Britain and France are two countries where personal mobility history has no impact on the demand for redistribution, whereas the current social ranking is particularly important for lower classes. In a singular manner, French people are strongly impregnated by the social history of their fathers. Finally, France and Sweden are relatively close regarding the important role that takes risk aversion in the determination of preferences along with union membership, thus opposing Great Britain and Germany on this dimension. This country heterogeneity that undoubtedly translates into socio-political coalitions calls for differentiated political strategies in the implementation of national reforms.

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20. However, the coefficient for Protestantism is not significant in Sweden.

Annexe 1.A   Further Results : Robustness Checks

TAB. 1.5: Preferences for redistribution (binary) : pooled country

Binary logit	[1]	[2]	[3]	[4]	[5]	[6]
Occupation						
Reference category : Clerk						
Manager	-.650***	-.639***	-.667***	-.501***	-.664***	-.586***
	(.174)	(.179)	(.178)	(.178)	(.180)	(.177)
Professional	-.389***	-.354**	-.444***	-.238	-.419***	-.358**
	(.147)	(.150)	(.150)	(.150)	(.150)	(.149)
Ass. professional	-.161	-.160	-.236	-.126	-.179	-.172
	(.142)	(.145)	(.145)	(.143)	(.145)	(.144)
Service worker	.061	.049	.041	.081	.041	.096
	(.160)	(.165)	(.164)	(.162)	(.166)	(.163)
Craftsman	.058	.011	.069	.015	.008	.027
	(.164)	(.169)	(.169)	(.166)	(.169)	(.167)
Machine operator	.406**	.388*	.390*	.356*	.369*	.386*
	(.196)	(.202)	(.202)	(.201)	(.201)	(.200)
Elementary worker	.283	.229	.294	.172	.242	.254
	(.222)	(.229)	(.225)	(.221)	(.232)	(.221)
Income						
Reference category : Family income Q5						
Family income Q1	.917***	.957***	.872***	.682***	.918***	.889***
	(.137)	(.141)	(.140)	(.145)	(.141)	(.141)
Family income Q2	.825***	.869***	.801***	.678***	.801***	.798***
	(.136)	(.139)	(.139)	(.141)	(.139)	(.138)
Family income Q3	.873***	.897***	.843***	.753***	.879***	.845***
	(.125)	(.128)	(.130)	(.130)	(.128)	(.127)
Family income Q4	.664***	.644***	.661***	.589***	.635***	.657***
	(.123)	(.126)	(.126)	(.126)	(.125)	(.124)
Employment status						
Self-employed	-.288*	-.273*	-.369**	-.256*	-.308**	-.277*

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Tab. 1.5: Preferences for redistribution (binary) : pooled country (cont')

Binary logit	[1]	[2]	[3]	[4]	[5]	[6]
	(.153)	(.156)	(.160)	(.154)	(.156)	(.156)
Publicly employed	.352***	.373***	.345***	.349***	.369***	.368***
	(.092)	(.093)	(.093)	(.093)	(.094)	(.093)
Unions						
Union membership	.149	.159	.173*	.144	.159	.177*
	(.098)	(.101)	(.101)	(.100)	(.100)	(.100)
Demographic characteristics						
Female	.425***	.428***	.436***	.391***	.417***	.389***
	(.087)	(.089)	(.090)	(.088)	(.090)	(.089)
Age	.008	.005	.008	.004	.008	.002
	(.017)	(.018)	(.018)	(.018)	(.018)	(.018)
Age-sq/100	-.009	-.004	-.007	-.005	-.009	-.005
	(.018)	(.019)	(.019)	(.019)	(.019)	(.019)
Married	-.035	-.006	-.021	-.055	-.028	-.017
	(.094)	(.097)	(.097)	(.095)	(.097)	(.096)
Country						
Reference category : Great Britain						
Sweden	-.529***	-.540***	-.489***	-.422***	-.554***	-.533***
	(.130)	(.135)	(.134)	(.132)	(.133)	(.131)
Germany	-.274**	-.282**	-.262*	-.274**	-.302**	-.274**
	(.135)	(.139)	(.154)	(.137)	(.139)	(.137)
France	-.144	-.220	-.012	-.126	-.159	-.135
	(.128)	(.135)	(.142)	(.132)	(.132)	(.132)
Religion						
Church attendance		-.097***				
		(.030)				
Catholic			-.367***			
			(.114)			
Protestant			-.194*			

To be continued next page...

TAB. 1.5: Preferences for redistribution (binary) : pooled country
(cont')

Binary logit	**[1]**	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**
			(.109)			
Social class						
Reference category : Middle class						
Upper class				-.331***		
				(.100)		
Lower class				.428***		
				(.106)		
Social Mobility						
Job prestige					.076	
					(.084)	
Reference category : No mobility						
Upward mobility						-.178*
						(.093)
Downward mobility						.202*
						(.111)
Number of Obs	3064	2924	2921	3026	2918	2994
Pseudo R-Squared	.065	.069	.071	.074	.065	.068
Log Pseudolikelihood	-1902.6	-1812.0	-1808.7	-1859.8	-1814.7	-1852.7
Chi 2	234.07	233.91	235.38	263.73	223.78	239.47

Note : Robust standard errors in parentheses. $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

TAB. 1.6: Preferences for redistribution : Great Britain

Ordered logit	[1]	[2]	[3]	[4]	[5]	[6]
Occupation						
Reference category : Manager						
Professional	.651*	.682*	.666**	.595*	.627*	.701**
	(.342)	(.350)	(.337)	(.341)	(.342)	(.343)
Ass. professional	.681*	.811**	.721*	.604	.756*	.625
	(.380)	(.411)	(.369)	(.381)	(.402)	(.382)
Clerk	.637**	.617*	.661**	.531*	.722**	.608**
	(.310)	(.322)	(.308)	(.309)	(.319)	(.310)
Service worker	.652**	.626*	.707**	.543*	.666**	.657**
	(.308)	(.323)	(.307)	(.314)	(.322)	(.311)
Craftsman	.690**	.597*	.712**	.492	.639**	.623**
	(.297)	(.316)	(.299)	(.304)	(.308)	(.297)
Machine operator	.761*	.931**	.848*	.552	.766	.713
	(.463)	(.466)	(.467)	(.473)	(.467)	(.472)
Elementary worker	1.259***	1.121***	1.296***	1.070***	1.325***	1.221***
	(.353)	(.374)	(.356)	(.362)	(.372)	(.356)
Income						
Reference category : Family income Q5						
Family income Q1	1.048***	1.218***	1.071***	.808***	1.083***	.979***
	(.293)	(.314)	(.292)	(.301)	(.316)	(.309)
Family income Q2	.888***	1.011***	.950***	.718**	.984***	.858***
	(.321)	(.345)	(.322)	(.319)	(.340)	(.331)
Family income Q3	.842***	.817***	.904***	.674***	.925***	.780***
	(.256)	(.274)	(.254)	(.260)	(.266)	(.262)
Family income Q4	.829***	.848***	.792***	.743***	.848***	.775***
	(.237)	(.261)	(.232)	(.238)	(.250)	(.239)
Employment status						
Self-employed	-.398	-.276	-.409	-.358	-.382	-.387
	(.265)	(.284)	(.265)	(.269)	(.273)	(.273)
Publicly employed	-.042	-.058	-.052	-.057	.021	-.049

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TAB. 1.6: Preferences for redistribution : Great Britain (cont')

Ordered logit	**[1]**	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**
	(.191)	(.199)	(.191)	(.192)	(.204)	(.191)
Unions						
Union membership	.126	.121	.114	.148	.146	.144
	(.205)	(.220)	(.202)	(.204)	(.209)	(.205)
Demographic characteristics						
Female	.122	.138	.129	.085	.070	.083
	(.170)	(.181)	(.169)	(.173)	(.178)	(.170)
Age	.018	.025	.031	.014	.006	.009
	(.026)	(.027)	(.026)	(.026)	(.028)	(.025)
Age-sq/100	-.021	-.027	-.031	-.017	-.011	-.014
	(.025)	(.026)	(.026)	(.026)	(.027)	(.025)
Married	-.068	-.018	-.065	-.051	-.049	-.041
	(.175)	(.182)	(.174)	(.178)	(.185)	(.178)
Religion						
Church attendance		-.074				
		(.046)				
Catholic			.680**			
			(.314)			
Protestant			-.384**			
			(.170)			
Social class						
Reference category : Middle class						
Upper class				-.327		
				(.215)		
Lower class				.398**		
				(.177)		
Social Mobility						
Job prestige					.247	
					(.167)	
Reference category : No mobility						

To be continued next page...

TAB. 1.6: Preferences for redistribution : Great Britain (cont')

Ordered logit	**[1]**	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**
Upward mobility						-.053
						(.193)
Downward mobility						.105
						(.199)
Number of Obs	674	609	674	659	621	657
Pseudo R-Squared	.030	.033	.038	.034	.031	.028
Log Pseudolikelihood	-870.6	-780.8	-863.5	-845.4	-807.6	-846.8
Chi 2	46.66	50.11	65.06	52.93	44.73	43.67

Note : Robust standard errors in parentheses. $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

TAB. 1.7: Preferences for redistribution : Sweden

Ordered logit	[1]	[2]	[3]	[4]	[5]	[6]
Occupation						
Reference category : Manager						
Professional	.168	.082	.157	.122	.060	.083
	(.373)	(.374)	(.374)	(.378)	(.375)	(.366)
Ass. professional	.600	.516	.596	.361	.489	.471
	(.367)	(.370)	(.367)	(.374)	(.370)	(.358)
Clerk	1.045***	.997**	1.028***	.715*	.861**	.950**
	(.392)	(.395)	(.393)	(.401)	(.391)	(.386)
Service worker	1.012***	.949**	1.004***	.631	.895**	.918**
	(.380)	(.382)	(.380)	(.390)	(.384)	(.372)
Craftsman	1.114***	1.026**	1.117***	.677	.953**	.931**
	(.405)	(.406)	(.406)	(.412)	(.411)	(.399)
Machine operator	1.473***	1.375***	1.470***	1.144***	1.264***	1.414***
	(.406)	(.409)	(.405)	(.421)	(.407)	(.399)
Elementary worker	1.084**	1.063**	1.063**	.574	1.026**	.908**
	(.429)	(.433)	(.426)	(.431)	(.439)	(.421)
Income						
Reference category : Family income Q5						
Family income Q1	.857***	.804***	.859***	.683***	.870***	.849***
	(.222)	(.224)	(.223)	(.225)	(.226)	(.223)
Family income Q2	1.060***	1.054***	1.054***	.921***	1.077***	1.038***
	(.229)	(.231)	(.229)	(.230)	(.234)	(.234)
Family income Q3	.820***	.772***	.821***	.759***	.822***	.787***
	(.215)	(.219)	(.216)	(.216)	(.219)	(.221)
Family income Q4	.595***	.562***	.617***	.504**	.572***	.573***
	(.203)	(.205)	(.204)	(.208)	(.205)	(.207)
Employment status						
Self-employed	-.381	-.439	-.401	-.288	-.348	-.321
	(.279)	(.283)	(.279)	(.267)	(.283)	(.273)
Publicly employed	.528***	.509***	.501***	.540***	.549***	.528***

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TAB. 1.7: Preferences for redistribution : Sweden (cont')

Ordered logit	**[1]**	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**
	(.137)	(.139)	(.140)	(.139)	(.140)	(.139)
Unions						
Union membership	.387**	.370**	.407**	.361**	.368**	.480***
	(.182)	(.183)	(.183)	(.181)	(.184)	(.185)
Demographic characteristics						
Female	.373***	.371***	.388***	.341**	.381***	.337**
	(.142)	(.144)	(.143)	(.141)	(.143)	(.144)
Age	.041	.046	.041	.031	.046*	.031
	(.027)	(.028)	(.028)	(.028)	(.028)	(.028)
Age-sq/100	-.041	-.046	-.040	-.033	-.044	-.036
	(.028)	(.029)	(.028)	(.028)	(.029)	(.028)
Married	-.241	-.307*	-.242	-.248	-.243	-.209
	(.160)	(.163)	(.161)	(.161)	(.164)	(.163)
Religion						
Church attendance		.004				
		(.064)				
Catholic			.294			
			(.438)			
Protestant			-.223			
			(.145)			
Social class						
Reference category : Middle class						
Upper class				-.688***		
				(.161)		
Lower class				.534***		
				(.193)		
Social Mobility						
Job prestige					-.217	
					(.142)	
Reference category : No mobility						

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Tab. 1.7: Preferences for redistribution : Sweden (cont')

Ordered logit	[1]	[2]	[3]	[4]	[5]	[6]
Upward mobility						-.318**
						(.153)
Downward mobility						.319*
						(.183)
Number of Obs	878	860	878	869	851	862
Pseudo R-Squared	.064	.065	.065	.081	.065	.071
Log Pseudolikelihood	-1218.7	-1188.2	-1217.1	-1182.3	-1180.1	-1186.7
Chi 2	157.64	155.99	162.42	184.42	158.85	168.98

Note : Robust standard errors in parentheses. $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

TAB. 1.8: Preferences for redistribution : France

Ordered logit	[1]	[2]	[3]	[4]	[5]	[6]
Occupation						
Reference category : Manager						
Professional	.160	.126	.094	.167	.070	.138
	(.202)	(.207)	(.205)	(.209)	(.212)	(.212)
Ass. professional	.314	.213	.236	.252	.251	.258
	(.204)	(.210)	(.207)	(.212)	(.215)	(.215)
Clerk	.513**	.415	.476*	.405	.508*	.491*
	(.252)	(.256)	(.253)	(.259)	(.259)	(.259)
Service worker	.714**	.544	.677**	.620*	.616*	.675**
	(.324)	(.357)	(.341)	(.336)	(.337)	(.334)
Craftsman	1.070***	.853**	1.049***	.904**	.989**	.971**
	(.385)	(.418)	(.384)	(.397)	(.393)	(.398)
Machine operator	.953***	.707**	.852**	.810**	.919**	.838**
	(.343)	(.356)	(.351)	(.349)	(.357)	(.345)
Elementary worker	.621	.219	.464	.510	.300	.390
	(.608)	(.640)	(.633)	(.616)	(.800)	(.624)
Income						
Reference category : Family income Q5						
Family income Q1	1.252***	1.275***	1.262***	1.061***	1.318***	1.239***
	(.221)	(.228)	(.223)	(.248)	(.224)	(.230)
Family income Q2	.940***	.960***	.943***	.812***	.896***	.894***
	(.209)	(.212)	(.210)	(.231)	(.216)	(.219)
Family income Q3	.992***	1.032***	1.028***	.922***	.958***	.918***
	(.208)	(.215)	(.207)	(.230)	(.213)	(.216)
Family income Q4	.616***	.546**	.628***	.546**	.610***	.614***
	(.215)	(.219)	(.216)	(.229)	(.218)	(.223)
Employment status						
Self-employed	-.511*	-.546*	-.507*	-.468*	-.519*	-.500*
	(.274)	(.279)	(.277)	(.283)	(.272)	(.292)
Publicly employed	.480***	.508***	.448***	.462***	.464***	.481***

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TAB. 1.8: Preferences for redistribution : France (cont')

Ordered logit	**[1]**	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**
	(.133)	(.136)	(.134)	(.134)	(.136)	(.134)
Unions						
Union membership	.275**	.338**	.276**	.267**	.280**	.280**
	(.133)	(.137)	(.134)	(.133)	(.134)	(.134)
Demographic characteristics						
Female	.366***	.389***	.416***	.353***	.366***	.347***
	(.127)	(.132)	(.131)	(.129)	(.129)	(.129)
Age	.053	.058*	.052	.063	.040	.074
	(.033)	(.033)	(.032)	(.040)	(.036)	(.052)
Age-sq/100	-.061*	-.066*	-.056	-.073	-.045	-.087
	(.037)	(.036)	(.036)	(.046)	(.041)	(.062)
Married	.093	.174	.180	.049	.073	.105
	(.154)	(.158)	(.157)	(.159)	(.161)	(.161)
Religion						
Church attendance		-.116***				
		(.044)				
Catholic			-.376***			
			(.125)			
Protestant			.091			
			(.430)			
Social class						
Reference category : Middle class						
Upper class				-.072		
				(.173)		
Lower class				.381**		
				(.156)		
Social Mobility						
Job prestige					.342***	
					(.125)	
Reference category : No mobility						

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TAB. 1.8: Preferences for redistribution : France (cont')

Ordered logit	[1]	[2]	[3]	[4]	[5]	[6]
Upward mobility						-.081
						(.135)
Downward mobility						.252
						(.180)
Number of Obs	996	939	984	988	954	968
Pseudo R-Squared	.048	.052	.050	.050	.050	.050
Log Pseudolikelihood	-1396.8	-1319.2	-1379.2	-1383.4	-1332.6	-1354.1
Chi 2	129.79	131.97	137.73	133.46	130.75	130.68

Note : Robust standard errors in parentheses. $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

TAB. 1.9: Preferences for redistribution : Germany

Ordered logit	[1]	[2]	[3]	[4]	[5]	[6]
Occupation						
Reference category : Manager						
Professional	1.207**	1.207**	1.098*	1.222**	1.502***	1.157**
	(.473)	(.470)	(.615)	(.479)	(.499)	(.493)
Ass. professional	1.303***	1.295***	1.333**	1.190***	1.409***	1.208***
	(.445)	(.445)	(.598)	(.445)	(.459)	(.459)
Clerk	1.580***	1.545***	1.734***	1.458***	1.706***	1.407***
	(.476)	(.479)	(.603)	(.477)	(.495)	(.490)
Service worker	1.291**	1.242**	1.533**	1.235**	1.393**	1.149**
	(.532)	(.540)	(.709)	(.542)	(.565)	(.541)
Craftsman	1.524***	1.518***	1.588***	1.428***	1.649***	1.338***
	(.451)	(.455)	(.555)	(.456)	(.466)	(.464)
Machine operator	1.551***	1.510***	1.829***	1.392***	1.505***	1.382***
	(.493)	(.496)	(.619)	(.499)	(.521)	(.515)
Elementary worker	2.131***	2.141***	2.358***	1.865***	2.303***	2.030***
	(.639)	(.637)	(.711)	(.652)	(.674)	(.634)
Income						
Reference category : Family income Q5						
Family income Q1	.646*	.692**	.588	.494	.531	.558
	(.353)	(.349)	(.419)	(.360)	(.356)	(.353)
Family income Q2	.275	.307	.271	.264	.136	.235
	(.288)	(.292)	(.314)	(.299)	(.295)	(.303)
Family income Q3	.773***	.775***	.779***	.726***	.739***	.790***
	(.243)	(.244)	(.278)	(.260)	(.253)	(.258)
Family income Q4	.577**	.598**	.588**	.604**	.425*	.613**
	(.252)	(.250)	(.289)	(.253)	(.256)	(.261)
Employment status						
Self-employed	.264	.262	.156	.176	.185	.216
	(.403)	(.401)	(.518)	(.403)	(.414)	(.412)
Publicly employed	.084	.100	.153	.068	-.033	.040

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TAB. 1.9: Preferences for redistribution : Germany (cont')

Ordered logit	[1]	[2]	[3]	[4]	[5]	[6]
	(.230)	(.232)	(.278)	(.230)	(.233)	(.235)
Unions						
Union membership	.262	.270	.321	.281	.265	.309
	(.225)	(.228)	(.259)	(.228)	(.235)	(.226)
Demographic characteristics						
Female	.598***	.602***	.551**	.579***	.642***	.594***
	(.213)	(.212)	(.247)	(.216)	(.218)	(.214)
Age	.004	-.004	-.008	.011	-.005	-.003
	(.047)	(.047)	(.055)	(.048)	(.049)	(.048)
Age-sq/100	-.001	.011	.012	-.008	.009	.002
	(.055)	(.055)	(.063)	(.056)	(.057)	(.056)
Married	-.173	-.116	-.187	-.203	-.151	-.179
	(.212)	(.218)	(.240)	(.221)	(.216)	(.218)
Region						
East Germany	1.054***	.954***	.879***	.966***	1.145***	.956***
	(.191)	(.195)	(.264)	(.197)	(.203)	(.195)
Religion						
Church attendance		-.146*				
		(.078)				
Catholic			.709*			
			(.369)			
Protestant			.840**			
			(.373)			
Social class						
Reference category : Middle class						
Upper class				-.048		
				(.234)		
Lower class				.433**		
				(.220)		
Social Mobility						

To be continued next page. . .

TAB. 1.9: Preferences for redistribution : Germany (cont')

Ordered logit	**[1]**	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**
Job prestige					.009	
					(.193)	
Reference category : No mobility						
Upward mobility						-.470**
						(.195)
Downward mobility						.198
						(.221)
Number of Obs	516	516	385	510	492	507
Pseudo R-Squared	.067	.069	.064	.070	.073	.075
Log Pseudolikelihood	-697.8	-696.1	-527.2	-687.5	-661.3	-679.8
Chi 2	100.31	101.87	75.62	106.49	103.67	108.81

Note : Robust standard errors in parentheses. $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

Annexe 1.B   Descriptive Statistics

Tab. 1.10: Summary statistics

Variable	n	%	N
Government should reduce income differences?			
Strongly disagree	271	5	5037
Disagree	706	14	5037
Neither agree nor disagree	906	18	5037
Agree	1878	37	5037
Strongly agree	1276	25	5037
Occupation			
Manager	400	9	4277
Professional	780	18	4277
Associate professional	929	22	4277
Clerk	568	13	4277
Service worker	518	12	4277
Agricultural worker	113	3	4277
Craftsman	466	11	4277
Machine operator	298	7	4277
Elementary worker	205	5	4277
Income			
Family income Q1	1288	28	4586
Family income Q2	871	19	4586
Family income Q3	901	20	4586
Family income Q4	770	17	4586
Family income Q5	756	16	4586
Employment status			
Self-employed	352	9	3719
Publicly employed	1591	37	4280
Unions			
Union membership	1523	33	4613
Demographic characteristics			

To be continued next page...

TAB. 1.10: Summary statistics (cont')

Variable	n	%	N
Female	2572	49	5275
Married	3191	61	5237
Religion			
Catholic	1631	33	4940
Protestant	1792	36	4940
Other religion	169	3	4940
No religion	1348	27	4940
Church attendance			
Never	2085	42	5009
Once a year	1246	25	5009
Several times a year	898	18	5009
Once a month	240	5	5009
2-3 times a month	202	4	5009
Once a week	338	7	5009
Social class			
Upper class	1206	23	5174
Lower class	1392	27	5174
Middle class	2576	50	5174
Social mobility			
Job prestige > father	2170	46	4717
Upward mobility	1690	33	5094
Downward mobility	1143	22	5094
No mobility	2261	44	5094
Country			
Great Britain	804	15	5275
Sweden	1150	22	5275
France	1889	36	5275
Germany	1432	27	5275
incl. East Germany	511	36	1432
	Mean	**Std. Dev.**	**N**

To be continued next page...

Tab. 1.10: Summary statistics (cont')

Variable	n	%	N
Age (17 to 96 years old)	48	16.45	5257

Source : ISSP 1999 - Social Inequality III
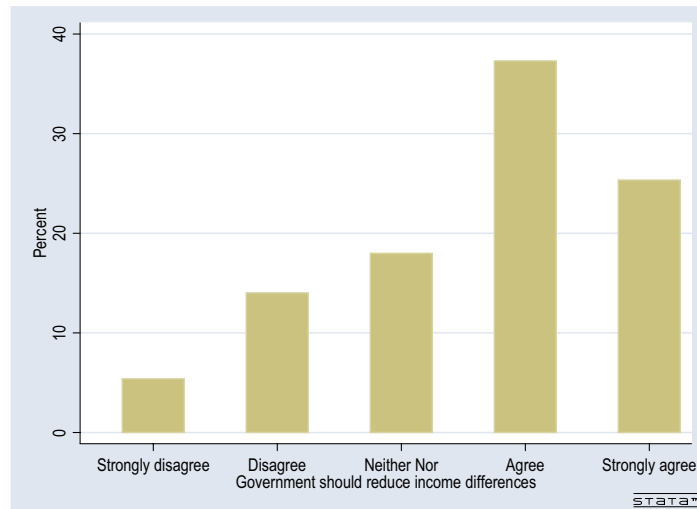
Fɪɢ. 1.1 – Attitudes towards redistribution, full sample

Fɪɢ. 1.2 – Attitudes towards redistribution, by country

Annexe 1.C   Classification of Occupations

For cross-national comparisons, only a few skill level categories have been identified by EUROSTAT[21] (Statistical Office of the European Communities). ISCO-88 (International Standard Classification of Occupations, 1988 version) uses four skill levels to define the broad structure of the classification at its most aggregate level, the *major groups*. These four skill levels are partly operationalized in terms of the International Standard Classification of Education (ISCED) and partly in terms of the job-related formal training which may be used to develop the skill level of persons who will carry out such jobs (Table 1.11). The decisive factor for determining how an occupation should be classified is the nature of the skills that are required to carry out the tasks and duties of the corresponding jobs.

TAB. 1.11: Definition of Skill Levels

ISCO skill level	ISCED categories
First skill level	ISCED category 1 : primary education
Second skill level	ISCED category 2 and 3 : first and second stages of secondary education
Third skill level	ISCED category 5 : education starting at the age of 17 or 18, which leads to an award not equivalent to a first university degree
Fourth skill level	ISCED category 6 and 7 : education starting at the age of 17 or 18, which leads to a university or postgraduate university degree (or the equivalent)

Note : Category 4 of ISCED has been deliberately left without content, since it is now included in category 5. Source : ILO (1990)

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21. This section largely relies on the EUROSTAT (1994) guideline written by Margaret Birch and Peter Elias.

Five of the eight major groups (groups 4, 5, 6, 7 and 8) are considered to be at the same skill level; they are distinguished by reference to broad skill specialization groups. The definition of major groups 1 and 0 do not refer to skill levels, because other aspects of the type of work were considered more important as similarity criteria : policy making and management functions, and military duties, respectively (Table 1.12).

TAB. 1.12: Definition of Occupation Major Groups

	Major Group of Occupations	**ISCO skill level**
1	Legislators, senior officials and managers	–
2	Professionals	Fourth level
3	Technicians and associate professionals	Third level
4	Clerks	Second level
5	Service workers and shop and market sales workers	Second level
6	Skill agricultural and fishery workers	Second level
7	Craft and related workers	Second level
8	Plant and machine operators and assemblers	Second level
9	Elementary occupations	First level
0	Armed forces	–

Note : We exclude from our regressions individuals who are attached to group 0 *Armed forces.* Source : ILO (1990)

Annexe 1.D   Econometric Specification

In our regressions, we aim to estimate what determines the individual attitudes towards redistribution. However, individual attitudes are coded as a discrete choice variable. Hence, our true dependent variable (i.e. the continuous level of utility) is not directly observed. This leads us to estimate a categorical

dependent variable model.

Latent Variable It is assumed that the true dependent variable is continuous, though unobservable. We consider that a latent variable is underlying the model :

$$y_i^* = x_i^{'}\beta + \varepsilon_i \tag{1.3}$$

for $i = 1, ..., N$ where x_i is a vector of observations on a set of explanatory variables, β is a vector of unknown parameters, ε_i is a random error term independently distributed with distribution function F (to be defined below).

Distribution Function While y_i^* is unobserved, y_i is observed. The observed dependent variable, which is discrete, is thus taking one of the values 1, 2, ..., J. y_i is related to y_i^* as follows :

$$y_i = \begin{cases} 1 \text{ if } y_i^* < \alpha_1 \\ 2 \text{ if } \alpha_1 \leq y_i^* < \alpha_2 \\ \vdots \\ J \text{ if } \alpha_{J-1} \leq y_i^* \end{cases} \tag{1.4}$$

with α_j being additional parameters such that $\alpha_1 < \alpha_2 < \ldots < \alpha_{J-1}$ acting as cut points for intervals into which a particular observation falls. Hence, the dependent variable y is ordinal and α_j are treated as parameters to be estimated.

Set of Probabilities The full set of probabilities of the possible outcomes is the following :

$$\Pr[y_i = j|x] = F(\alpha_j - x_i^{'}\beta) - F(\alpha_{j-1} - x_i^{'}\beta) \tag{1.5}$$

for all j, assuming that $\alpha_0 = -\infty$ and $\alpha_J = +\infty$, where F is the cumulative distribution function for error term.

Maximum Likelihood Estimator The usual estimator for this type of model is the Maximum Likelihood estimator. The log-likelihood for the model is :

$$\log L = \sum_{i=1}^{N} \sum_{j=1}^{J} y_{ij} \log[F(\alpha_j - x_i'\beta) - F(\alpha_{j-1} - x_i'\beta)] \tag{1.6}$$

maximized with respect to $\beta, \alpha_1, \alpha_2, \ldots, \alpha_{J-1}$.

Ordered Probit / Logit Model From this, the Ordered Probit model (Aitchison and Silvey, 1957 ; Amemiya, 1981 ; Winship and Mare, 1984) simply assumes that the cumulative distribution function is a standard Normal (with the scale normalization $\sigma = 1$) :

$$\varepsilon_i \sim N(0,1) \tag{1.7}$$

Hence, the F becomes Φ in equations (3) and (4), with :

$$\Phi(\varepsilon) = \frac{e^{-\frac{\varepsilon^2}{2}}}{\sqrt{2\pi}} \tag{1.8}$$

And the Ordered Logit model assumes that the cumulative distribution function is Logistic :

$$\varepsilon_i \sim G(0, \frac{\pi^2}{3}) \tag{1.9}$$

Hence, the F becomes Λ in equations (3) and (4), with :

$$\Lambda(\varepsilon) = \frac{1}{1 + e^{-\varepsilon}} \tag{1.10}$$

In our study, we preferably use ordered logit than ordered probit estimation techniques. Indeed, ordered logit estimates allow to compute odds ratios that ease the interpretation of coefficients.

Chapitre 2

Mapping the French Voter Space : Change in Political Demand, 1978-2002[1]

In this chapter, we conduct an empirical analysis on French post-electoral surveys over the period 1978-2002. We draw a spatial map of voter policy preferences, and measure the relative salience of policy dimensions. We empirically identify a multidimensional political space and the evolution of the political demand of heterogeneous agents. The analysis highlights the roots of the French political crisis, which occurred in 2002 while a Far Right candidate reached the second round of the Presidential elections. The economic crisis during the 80s and the European integration process of the 90s determine the political demands and multiply the break lines : The two social blocs that used to support the Right and the governmental Left progressively break up, and a tripartition of the political space eventually occurs.

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1. This chapter is based on Guillaud and Palombarini (2006) "Evolution des Attentes Sociales et Comportement Electoral : France, 1978-2002", PSE working paper 2006-37 (in French).

2.1   Introduction

When is institutional change possible ? Which support does it gather, and
from which political groups ? What are the social alliances that need to be relied
on to guarantee the success of reforms ? All these standard questions for govern-
ments that aim to conduct reforms crucially depend on the composition of the
political demand. Does this demand relates to one underlying dimension, like a
single budget constraint, or does it rely on many dimensions ? In other words,
how to define the political space where the demand and the supply meet each
other ? Does this space evolve over time ?

In this chapter, we conduct an empirical analysis on French post-electoral
surveys over the period 1978-2002. We draw a spatial map of voter policy pre-
ferences, and measure the relative salience of policy dimensions and its change
over time. Indeed, very few empirical papers assess the effective number of di-
mensions in the political space, particularly on the demand side (voters' policy
preferences). Even fewer papers do it in a dynamic perspective. Since we are inter-
ested in the support for reforms, we seek to identify the main cleavages in society,
and to define the social blocs that hold heterogeneous demands. Our analysis re-
lates to three different literatures : (i) The political science literature that deals
with spatial models of voting (Downs, 1957 ; Enelow and Hinich, 1984 ; Iversen,
1994), (ii) The political economy literature that empirically tackles the ques-
tion of multidimensionality of the political space (Laslier and Van der Straeten,
2004 ; Roemer and Van der Straeten, 2005), and (iii) The micro-economic lite-
rature that studies the determinants of voters' attitudes, the grouping of voters
and the degree of homogeneity inside groups (Goux and Maurin, 2004 ; Pagano
and Volpin, 2005). In the following, we use the spatial theory framework to study
the composition of the demand ; we allow the space to be multidimensional and
to evolve through time ; and we plot on this space the economic characteristics
of voters as it relates to their labor market positioning. Doing this, we are able

to define which economic groups support which policies, and how this translates to voting behavior, in a dynamic perspective. We further detail our contribution to each of the related literatures in the next section.

Using a data reduction technique such as factor analysis to search for latent dimensions with which voters' attitudes are correlated, we are able to reduce the spatial representation of the French political space to two main dimensions. The first one is an economic policy left-right dimension, which maintains throughout the period studied (1978-2002). The second one is primarily an insecurity dimension (1978-1988), that translates into a European dimension (1997-2002) through a period of contest where the main cleavage is about the need for reforms (1995). This second dimension progressively dissociates moderate parties' electorate from extreme parties' electorate. Departing from most studies of voters' attitudes, we also characterize the political blocs who support these policy issues. The clustering of voters according to the distribution of their ideal points highlights the economic division of the society in terms of occupation type and employment status. This confirms the underlying assumption that individual preferences are rooted in the economic risks agents (subjectively) face.

The rest of the chapter is organized as follows. Section 2.2 presents the related literature. Section 2.3 presents our data and the empirical strategy used in the analysis. Results of our factorial analysis are discussed in Section 2.4. Section 2.5 concludes and proposes a discussion on the policy implications of our findings.

2.2   Related Literature

Our analysis is related to three strands of the literature. First, there is an extensive political science literature on spatial models of voting, that builds on rational voter theory. We briefly expose below how it relates to our work. Second, there is a growing political economy literature that aims to empirically link the

preferences of voters to economic policy outcomes, explicitly taking into account the multidimensionality of the demand. We review the most recent papers of this literature in order to point out which evidence is still to be found. Third, there is an empirical debate in the economic literature about the potentially vanishing importance of the traditional social cleavages as determinants of political blocs supporting economic policies. Below, we review the empirical studies that focus on the French case, and present our contribution to this debate.

Political Science Literature Spatial theory assumes that voters have single-peaked preferences and thus prefer candidates who best represent their policy positions (voters minimize the distance between the issue position of the candidate and their own position); it further assumes that candidates seek to maximize votes (Downs, 1957; Enelow and Hinich, 1984 and 1990). The standard spatial model assumes that electoral competition takes place along a single left-right dimension. However, refinements of the model (Cox, 1987 and 1990) allow a multidimensional policy space[2]. This has been empirically tested on French data (Grunberg and Schweisguth, 1997 and 2003; Andersen and Evans, 2003 and 2005; Chiche *et al.*, 2000; Laver, Benoit and Sauger, 2006)[3] or European data (Iversen, 1994; Benoit and Laver, 2006). In the following, we rely on the spatial voting framework to provide an explicit theoretical structure within which to interpret our results. We thus think of each voter as having an ideal position in a multidimensional policy space. Furthermore, we conduct the analysis over almost three decades in a dynamic perspective, and point to the change in the dimensions that structure the space.

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2. See Laslier (2004) for an encompassing presentation of spatial models, and Benoit and Laver (2006) for a discussion on the empirical use of these models.

3. Grunberg and Schweisguth (1997, 2003) and Andersen and Evans (2003, 2005) use French post-electoral survey data for the years 1988, 1995, 2002; Chiche *et al.* (2000) analyze French post-electoral survey data for the year 1997 only, while Laver, Benoit and Sauger (2006) analyze expert survey and French post-electoral survey data for the year 2002.

Political Economy Literature Roemer and Van der Straeten (2005) construct a model in which the policy space is bi-dimensional and constant over time. The following causal link is tested in their model : Anti-immigrants feeling among voters influences the political outcome on economic issues in a significant manner. The underlying theoretical model they use leans upon the PUNE concept (Party Unanimity Nash Equilibrium) developed by Roemer (2001). The model is calibrated with the French post-electoral survey data of years 1988, 1995 and 2002 (presidential elections, only)[4]. The authors show that there exists a negative correlation between the demand for redistribution and xenophobia. On a dynamic perspective, the article concludes there is an increasing importance of immigration issues on the French political arena, and it impacts the demand for redistribution much more in 2002 than in 1988. However, on the much longer and detailed period that we study (including not only presidential elections, but also legislative elections), xenophobia does not play a key role in structuring political demand. Instead, we find other dimensions to interact with attitudes towards public intervention and to impact the policy outcomes. The difference between these two results can be related to the method used : Roemer and Van der Straeten (2005) do not allow their bi-dimensional policy space (size of the public sector and xenophobia) to change over time, while we do[5]. Indeed, we do not constrain the French voter space, and allow the nature and the number of policy dimensions to vary : 1, 2, 3 or more dimensions might structure the policy space, and these can change from one year to another.

Laslier and Van der Straeten (2002, 2004) conduct a scientific experiment at the exit of the polls during the 2002 presidential elections. They construct a map of the political proximity of candidates. This map is based on the observed associations in the ballots issued by approval voting and obtained in two

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4. Roemer and Van der Straeten (2006) run the same analysis for Denmark.

5. In fact, the result of Roemer and Van der Straeten (2005) simply highlights the changing weight of the xenophobic dimension relative to the public sector size dimension, within an unchanged voter space that is fixed by the authors.

French cities. It allows to determine the degree of homogeneity of the electorate. The underlying assumption is that individuals reveal their preferences by their electoral behavior. The conclusions of the authors are very similar to ours : multi-dimensionality of the political space, and partial independence of the electorate of the Far Right candidate, relative to the electorate of the Right. However, the admitted aim of Laslier and Van der Straeten (2002, 2004) is not to study the determinants of the demand, but to study the statistical properties of a new voting rule. Consequently, they do not define the different dimensions of the political space.

Based on OECD countries (ISSP data "Role of Government III", 1996), the contribution by Kitschelt and Rehm (2004) aims to show the link between the socio-economic position of agents and their policy preferences. Using data analysis as we do, but only for year 1996, the authors show that the space of policy preferences is multi-dimensional : the positioning of agents on a left-right axis is directly related to their preferences in social and economic policies, which in turn are determined by the socio-economic positioning of agents. We confirm these two results on the much longer period we study, though the non-economic themes included in our data analysis do not appear to be significant at all. In the following, vote is only explained by policy preferences related to economic issues (See Lewis-Beck, 1983 and 2003 for a similar claim). Furthermore, using several periods of time for the same country, we are able to consider dynamics and to explore the changes in the structuring of the political space.

Socio-Economic Literature The book by Cautrès and Mayer (2004) sheds light on the French electoral "seism" of 2002, analyzing all the available post-electoral survey data, as we do. Some results are close to ours : tripartite division of the political space[6], importance of European integration on the preference

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6. See also Grunberg and Schweisguth (1997, 2003) for a confirmation of the result, and Andersen and Evans (2003, 2005) for a critics of the former.

formation stage (Bélot and Cautrès, 2004), relative importance of the division between public and private sector employees (Cautrès and Mayer, 2004). The main difference between their analysis and ours is to be found in the underlying theoretical approach : Cautrès and Mayer (2004) assume a direct link between the socio-economic positioning of agents and political parties, without taking into account the multi-dimensionality and the dynamics of the political space ; by contrast, we carefully look at the transition from preferences that are expressed through multiple demands with relative weights changing over time, to actual vote. Thus, vote is not directly determined by the social positioning of agents in our analysis, but depends on individual preferences, which are shaped by the objective economic context as by the subjective way political debates are perceived.

Goux and Maurin (2004) run an analysis of the French regional elections of year 2004, the results of which confirmed the strength of the Far Right and of the abstention (47% of voters in total). The authors refute two well established claims to explain the electoral behavior of voters : The one that suggests the electorate becomes more volatile, and the one which underlines that lower classes disaffect the Left and are captured by the Far Right. Goux and Maurin (2004) show that occupation categories still play a role to explain individuals' electoral behavior, providing the exposure to market risks (unemployment, income threatening) are incorporated into the analysis. According to the authors, the election results of year 2004 are close to those of 2002, the only difference lying in the fact that in 2004 the discontent of the electorate applied only to the Right, while in 2002 it applied to both Right and Left parties that shared power in a divided ("cohabitation") government.

Our contribution to this literature is twofold. First, our mapping of the French voter space is done on a very long period (1978-2002). Allowing for dynamics, our analysis shows that the political space evolves over time by the number

of structuring dimensions and by the nature of these dimensions. Second, we explicitly characterize voter blocs (Bartolini and Mair, 1990), according to their occupation type and employment status. Combining both results, we are able to infer the move of voters around the issues at stake, the composition and decomposition of social blocs, and the change in salient policy dimensions for the elections considered. This approach makes the reasons of the 2002 political crisis in France clear and tractable.

2.3   Data and Empirical Strategy

Before to turn to the empirical investigation of electorate's distribution of attitudes, we discuss our data and the empirical strategy chosen. We further give hints to interpret the results.

2.3.1   Data

We use French post-electoral survey data over the period 1978-2002. The surveys have been conducted by the CEVIPOF (Centre de Recherches Politiques de Sciences Po) and issued by the CDSP (Centre de Données Socio-Politiques)[7]. Our dataset covers five national elections : 2 legislative elections (1978 and 1997) and 3 presidential elections (1988, 1995 and 2002). Interviews have been done on a face-to-face basis[8] (4000 respondents per year, on average[9]), between the

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7. Data available at http ://cdsp.sciences-po.fr
8. Except for year 2002, where interviews were conducted by telephone.
9. More precisely, our sample consists of 4507 individuals in 1978, 4032 individuals in 1988, 4078 individuals in 1995, 3010 individuals in 1997, and 4107 individuals in 2002.

two election rounds[10], following quotas methodology (age, gender, occupation categories) to guarantee the socio-demographic representativity of the sample[11].

Survey questions deal with the political attitudes of respondents (voting behavior, preferred candidate, party affiliation) and their opinions on societal (immigration, religion, crime) and economic questions (globalization, employment, taxation, purchasing power). The socio-economic positioning of individuals (occupation, employment status) is provided, along with standard socio-demographic characteristics (age, sex, location). While entering questions and preferences of agents into data analysis, we kept, as far as possible, the set of questions unchanged. However, if a new question appeared at a certain time, we assessed whether it was valuable to add it. Indeed, some specific demands barged into the political debate following an economic shock or potential parties' strategies, and it would have biased the analysis (selection bias) if we had completely ignored them.

Political Demands The political demands deal with the following themes, which are used to build the factorial axes : Inequalities, Taxes, Social Protection, Social Exclusion, Nationalizations, Privatizations, Employment Protection Legislation, Product Market Competition, Economic Growth, Profits, Stock Exchange, Unions, Purchasing power, Wages, Unemployment, Public Employment, Working Time, European Integration, Euro, Globalization. Answer modalities generally follow a Likert scale (otherwise indicated) : from "Strongly Agree" to

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10. The 2002 data consists of three waves (before the first round, between the two rounds, and after the second round of the elections). A total of $4,107$ individuals formed the first wave sample ; $4,017$ the second ; $2,013$ the third. Some $1,417$ persons have been interviewed three times. We solely used the first wave in this study.

11. Following the advise of the CDSP, we did not apply any weighting on votes, since we are primarily interested in the economic representativity of our sample. This implies that the proportion of extreme voters is underrepresented, in favor of more moderate voters (indeed, only 7% of respondents answer that they intend to vote for the Far Right in 2002, while 17% of voters did vote for the Far Right in reality). Notice however that the main results are unchanged if votes are weighted.

"Agree", "Disagree" and "Strongly Disagree", or from "Very Positive" to "Positive", "Negative" and "Strongly Negative". The precise wordings of questions is provided in the appendix.

Vote Individuals were asked to indicate for which party or candidate they voted in the first round of elections. Tables 2.1 to 2.5 in the appendix present a full description of the results of the French elections (1st round) for years 1978, 1988, 1995, 1997 and 2002.

Occupation Individuals are classified according to their occupation type and employment status. The following categories apply : Farmers, Craftsmen, Storekeepers, Industrials[12], Free-lance, Managers (private and public sector), Associate professionals (private and public sector), Foremen (private and public sector), Clerks (private and public sector), Service employees (private and public sector), Skilled blue-collars (private and public sector), Unskilled workers (private and public sector), Agricultural workers.

2.3.2   Multiple Factorial Analysis

We run data analysis to identify the composition of the political demand : We seek to know which political claims structure the political space, for each election year. The choice of the method is motivated by our problem setting, as by the qualitative character of our data[13].

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12. This category is very small (about 20 individuals), so we do not infer any conclusion regarding its electoral behavior, event though it appears in our graphs.

13. Data analysis is more often used in the political science literature (Benoit and Laver, 2006) where data are often qualitative, than in economics. Notice, however, the contribution by Amable (2003) that uses such a tool to infer correlations between different institutional features in order to define models of capitalism. Nicoletti and Scarpetta (2003) also use factor analysis to determine the weight structure of their data while computing indicators of product market regulation.

The advantage of data analysis relative to econometrics is that no stringent assumption needs, *a priori*, to be done : We do not need to decide whether there is one or several dimensions structuring the political space, and which they are. To compare with econometrics, our dependent variable is a latent variable (the unobserved dimension) which is determined by a mix of independent variables (the observed variables). Variables that highly participate to the inertia of axes (far from the origin and along the reference axis) are simply those that best structure the political space in terms of demand. Each variable has several possible answer categories, which are called "modalities". They give an important indication on the main factors that explain the variability of answer profiles[14]. Once structuring variables have been selected, a series of graphs allow to quickly understand the relationships between variables (see Section 2.3.4 below).

Data analysis encompasses several analysis methods[15]. In our case, we run a Multiple Factorial Analysis (MFA). Indeed, MFA has two important advantages relative to Principal Components Analysis (PCA) : First, it allows to treat qualitative survey data with multiple choice categories and a unique answer ; Second, it allows for non-linear link between variables. For instance, while analyzing the voting behavior of individuals, an MFA is able to test the assumption according to which extreme votes, be it on the Far Left or on the Far Right of the political spectrum, are low differentiated, as they have the essential role to express a dissent. Consequently, we can assess that the political claims, which lie at the roots of these votes are the same.

The analysis is done in two stages. We first run an exploratory data analysis, entering all explanatory variables that could convey indivuals' preferences, namely (but not only) economic questions. We then give more focus to the analysis

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14. For our analysis, two types of modalities have been excluded : "Don't know" and "Not concerned", in order to preserve factorial axes from an instability due to extreme values. Indeed, factorial analysis is highly sensitive to missing points (Escofier and Pagès, 1998).

15. See Escofier and Pagès (1998) for a detailed review of the possibilities offered by data analysis.

by keeping only those variables that participate the most to the inertia of axes. From this second analysis, we define our factorial axes. The results we present below are those issued by the second stage analysis.

2.3.3   How to Interpret Results?

The *quality of the representation* is measured by the cosinus-squared of variables that are projected on the factorial space. Cosinus-squared depend on the coordinates of points on the axis, and on the number of observations within the modality. Thus, the cosinus-squared informs us on the degree of distortion of the representation from reality : If $cos^2 = 1$, then the point is *on the axis* (no distortion of reality); If $cos^2 = 0$, then the point is *orthogonal to the axis* (reality is highly deformed). Hence, the higher the cosinus-squared, the better depicted the modality.

2.3.3.1   Location of Explanatory Variables

The *proximity of modalities of nominal active variables* (answer categories of explanatory variables) allows to establish a typology of individuals based on their answer profile. For instance, if the individuals scared by the raise of globalization are close to those who favor public intervention in the economy, then we gather them on a single category.

We observe the *distance of variables' modalities from the origin*, given that the origin represents the mean individual. This determines the size of groups of individuals : A *heavy modality* (close to the origin) means that there is a high number of individuals in the group, while a *light modality* (off-center) means that this modality has been chosen by few individuals.

At the more general level of *explanatory variables*, we observe *exclusion phenomenon*, or to the contrary *link phenomenon*. Thus, some active variables are mutually exclusive, while others are systematically on the same space. From these

observations, we are able to cluster theme (e.g. globalization and fiscality, public property and immigration).

2.3.3.2 Information Based on Illustrative Variables

The interpretation of *illustrative variables* (variables which do not participate in the construction of axes) like occupation or vote is done in two ways. First, we observe the *distribution of the modalities* of the illustrative variable on the space : How dispersed is it ? This helps to determine the degree of differentiation of individuals. Second, we analyze the *link between each illustrative variable and factorial axes*. Thus, to determine the link between political demand and voting behavior, we plot the votes of individuals on our factorial axes. This informs us on the way candidates' or parties' answers are perceived, regarding the questions that structure the political demand. For instance, we observe that individuals who favor nationalizations are close to those who vote for the Left parties in 1978. We produce the same analysis to link occupation categories with the political demand encompassed in factorial axes. Notice that a direct interpretation of the proximity of two illustrative variables (occupation and vote) on the same factorial space is not possible. In order to infer such connections between the occupation category of individuals and their votes, we systematically conduct complementary computations (analysis of cosinus-squared).

2.3.4 How to Read a Graph ?

Factorial Axis Axes are *factorial axes* issued by the analysis. They are made up of a mix of questions' modalities. For instance, a question about "income re-distribution" has four modalities, which are "strongly agree", "agree", "disagree" and "strongly disagree". Another question about "the abandon of European in-tegration" has three modalities, which are "big regrets", "indifference" and "high relief". These two variables might be clustered together on the same axis if they

covariate. In particular, "high relief if EU is abandoned" might be combined with "strongly agree with income redistribution" on one side of the axis, while "big regrets" is gathered with "strongly disagree" on the other side. By contrast, the factorial analysis might produce two different axes, one encompassing the question about "income redistribution", while the other renders apparent the cleavage about "the abandon of EU". The figure (%) beside an axis is the proportion of the cloud's inertia explained by the axis. Indeed, axes go through the gravity center of clouds and maximize inertia (importance of correlations). Data analysis offers several ways to describe clouds. Several factorial axes are produced by the analysis. We generally select the first two axes that explain together the major part of variance. Once factorial axes are defined, an obvious difficulty is to interpret the underlying dimension that links all the variables of the same axis (see Section 2.3.3 above).

Explanatory Variables Black squares are exogenous variables (questions' modalities) that structure the factorial space (political demand). The bigger a square and the closer it is to an axis, the more it participates to the inertia of factors. For a single electoral year, axes do not change from graph to graph. However, while moving from one year to another, the composition of axes do change. To ease the reading of graphs, all the explanatory variables found to structure the space in an election year are not included in a single graph, but are spread over several graphs.

Illustrative Variables Triangles (or circles) are illustrative variables that do not participate in axis' inertia but do help to characterize individuals. Triangles are job occupations and circles are votes. The closer a triangle (circle) to a square, the better it fits the modality represented by the square. For instance, we could infer that Managers strongly disagree with Nationalizations, or Far Left voters

strongly agree with the reduction of Inequalities. A clustering of individuals is then possible, according to their proximity to common modalities.

2.4 Results

Mapping the French voter space means that we (i) decompose the political demand over several dimensions, but also (ii) characterize the voter groups that hold attitudes shown to structure the political space. We thus focus on the political demand side defined to be rooted in individual preferences on (mainly) economic questions. Using data spanned over almost three decades, we let this demand change over time, the change being conditioned by the macroeconomic context. The French political situation of year 2002, while a Far Right candidate reached the second round of the Presidential elections, was qualified by numerous observers to be a "political crisis". Our analysis sheds light on this issue and emphasizes its roots.

In France, throughout the period studied (1978-2002), the fundamental political divide that contributes to differentiate the political demand is linked to the State intervention in the economy. Indeed, variables that load highly on the first factor are traditional left-right issues about equality and the role of the state in the economy. Thus, even if we did not study the political supply, it appears that it is highly conditioned by this main divide : individuals who support public intervention generally vote for the parties at the Left side of the political spectrum, while others vote for parties on the Right. Thus, to simplify the argument, we call Left voters the electorate that supports State intervention, and Right voters the others. Such a definition has obviously no ambition to be general : it only applies to France, for the period studied. Furthermore, the data analysis highlights a second axis that structures the French political space. The nature of this second axis evolves over time, enhancing the division of the electorate and

the changing composition of political blocs. It goes from a demand relative to income protection (1978-1988) to a demand regarding the process of European integration (1997-2002), through a period of contest and recomposition of the political blocs (1995). In the following, we present our results for the 3 periods just defined.

2.4.1   1978-1988 : Economic Policy and Income Protection

At the beginning of the period, during the 1978 Legislative Elections, the demand for more or less State intervention in the economy divides the electorate. This demand is so important, that it translates into our two main axes. The first axis relates to labor and product market regulation, while the second axis relates to income redistribution.

As explained above (Section 2.3.3), the analysis of the contribution of each variable (and each modality) to the inertia of factors helps to characterize factorial axes. In order to interpret axes, we keep the variables whose contribution to the inertia of factors is above the mean[16].

The questions that best structure the political space in 1978 (and those which are best represented by our factorial space, having a relatively high cos^2) are thus the following :

1. Axis 1 (horizontal) (PMR, EPL) encompasses questions about *developing the nationalized sector, even if this implies a limitation of private firms* and *redundancy forbidden, providing no new job has been guaranteed* ;

2. Axis 2 (vertical) (Redistribution, Public Goods) encompasses *raise in taxes, in order to obtain completely free public services* and *suppress advantages,*

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16. For each axis, the sum of contributions equals 100. In 1978, 6 variables are included into the analysis (24 modalities) ; the mean contribution of variables is then equals to $100/6 = 16.66\%$ ($100/24 = 4.16\%$ for modalities). The same computation applies to the following analyses, adjusting the number of variables and modalities.

in order to reduce social inequalities (see appendix 2.B for the exact wording of questions).

We thus define the first axis to be related to Product Market Regulation (PMR) and Employment Protection Legislation (EPL), while the second axis is said to refer to Redistribution and the provision of Public Goods (Figures 2.1 and 2.2 in the appendix).

The Left electorate supports State intervention on both axes : We observe that the electorates of the Socialist Party (PS), Unified Socialist Party (PSU), French Communist Party (PCF) and Extreme Left (Extr G) locate at the upper right of our graph (Figure 2.1). These voters are pros PMR and EPL, and pros Redistribution and Public Goods. By contrast, at the lower left of our graph we find the electorate of the Ally for the Republic (RPR), Center of the Social Democrats (CDS), Presidential Majority (Div maj) and Extreme Right (Extr D). These voters ask for more deregulated product and labor market and less taxation and redistribution. We thus define the political space of year 1978 as being unidimensional : We read it as a traditional left-right dimension over economic policy. Indeed, there is no orthogonal differentiation between the electorate of Extreme parties and the one of moderate parties : parties are along a continuum. Results of the first round of these 1978 Legislative Elections (Table 1 in the appendix) show that the Left-wing and Right-wing parties have similar weights. Eventually, the Right-wing parties win the elections.

How are these two electorates characterized ? First, we notice that the two social blocs are relatively homogeneous (Figure 2.2). The agents who express support for State intervention are blue-collars and public employees in general. The ones who express negative attitudes towards PMR, EPL, redistribution and public goods are farmers, craftsmen, storekeepers, free-lance workers and managers of the private sector.

Ten years after, during the 1988 Presidential Elections, a second dimension further divides the electorate. This new cleavage is linked to the economic crisis of the economy : Between 1978 and 1988, the unemployment rate more than doubles, from 4.9% to 10.1%. However, the first dimension still refers to State intervention, maintaining the two social blocs of the 70s.

Mapping voters' attitudes during this election, we thus observe the following two main axes :

1. Axis 1 (horizontal) (PMR, Redistribution) encompasses *positive feeling about nationalizations*, *positive feeling about privatizations* and *wealth tax should be restored* ;

2. Axis 2 (vertical) (Economic risk and Insecurity) encompasses *positive feeling about profit*, *positive feeling about stock exchange* and *government should guarantee a minimum income for each household*. To help us interpret this second axis, we also plot the following illustrative variables on the space : *assessment of unemployment risk* and *expectations about evolution of purchasing power*.

We thus define the first axis to be related to PMR and Redistribution, while the second axis refers to the perception of Economic Risk and Insecurity (Figure 2.3).

Looking at the plot of individuals according to their vote, we notice that the left-right dimension is still present in the first axis (Figure 2.4). Indeed, the electorate of the Right (Chirac, Barre) is at the lower left of our graph, showing negative attitudes towards PMR and Redistribution, while the voters of the Left candidates (Mitterand, Waetcher, Boussel) lie at the lower right, supporting State intervention in the economy. However, the second dimension emphasizes the presence of insecure individuals (at the upper side of our graph) who vote for the candidates of the Far Right (Le Pen), or of the Communist Party (Lajoinie,

Juquin)[17]. Hence, in 1988, the two dimensions that structure the political space cannot be reduced to a single dimension, even though the main electorates are still represented by a single axis.

We now seek to characterize the individuals who express these attitudes (Figure 2.5). Individuals who support market regulation and redistribution are public employees and managers of the public sector (lower right side). By opposition, farmers, craftsmen, free-lance workers and managers of the private sector constitute the core individuals who reject market regulation and redistribution (lower right side). Finally, voters who perceive income insecurity are divided into two groups : on one side, storekeepers and foremen of the private sector demand a deregulation of the product market (upper left of our graph), and on the other side, workers of the public sector ask for more redistribution (upper right of our graph).

2.4.2   1995 : Breaking Point : The Raise of European Issues

Like in most European countries, the political demand remains highly structured by the debate on the nature of economic policies during the 1990s, as it relates to State intervention (Iversen, 1994). However, the 1995 Presidential Elections in France has two important novelties. First, the cleavage linked to the consequences of the economic crisis (stagnation of GDP in 1993, along with a 12% unemployment rate) translates to a debate about the functioning of the French democracy. Second, the European integration process becomes an important factor on the voters space (Grunberg and Schweisguth, 1997). Consequently, the first three main axes of our factor analysis best describe the voter political space (Figures 2.6 to 2.8) :

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17. During the 1988 elections, the FN candidate won more than 14% of the votes at the first round. See Table 2.2 in the appendix.

1. Axis 1 (horizontal) (Welfare state) encompasses *importance of social pro-
   tection in vote* and *importance of unemployment in vote* ;

2. Axis 2 (vertical) (Reforms, Protest) : *positive feeling about reform, posi-
   tive feeling about solidarity* and *positive feeling about equality.* Illustrative
   variable : *functioning of democracy in France* ;

3. Axis 3 (horizontal) (Europe) : *importance of European construction in vote*
   and *positive feeling about Europe.*

We thus define the first axis to refer to the Welfare State, while the second
axis clearly emphasizes the debate on the necessity of Reforms. Finally, the third
axis relates to European Integration issues. This third dimension, the emergence
of which can probably be related to the 1992 Maastricht referendum, will become
central in the design of the voter space during the following elections (1997 and
2002). For now, we notice the high correlation between Axis 2 and Axis 3 (Figure
2.6).

If the first axis continues to differentiate the electorate of the Left from the
electorate of the Right (Figure 2.7), we notice that the position of the electorate
of the Far Right candidate (Le Pen) looks centrist on this axis. Actually, these
voters do not rely their vote on the traditional left-right dimension concerning
the role of the welfare state. Indeed, voters of the Far Right candidate are better
represented if we look at the two other dimensions (Figure 2.6). Importantly,
they have negative attitudes towards Europe, and find that democracy in France
does not function well. Since these two axes are highly correlated, we can infer
that the two debates are linked, at least in the perception of the electorate.

Which profile do the voters have, in terms of occupation and employment
status ? As in 1988, craftsmen and storekeepers have negative attitudes towards
Europe (Figure 2.8). Moreover, blue-collars and elementary workers, from the
private but also from the public sector, differentiate themselves from the other
occupation categories that used to support the vision of governmental Left-wing

parties. Indeed, their opposition to Europe cannot be satisfied by the candidate of the Socialist Party (Jospin). Eventually, the core social group that supports the welfare state and the European integration is constituted by associate professionals and managers of the public sector, as by clerks. By opposition, the social group that asks for less welfare state and favors the European integration is limited to associate professionals and managers of the private sector, farmers and free-lance workers. We thus find a result already highlighted in other European countries (Thomassen, 2005) : mobile voters are to be found in low-income categories.

2.4.3   1997-2002 : Economic Policy and European Integration

In the 1997 Legislative Elections, the dimension linked to Europe plays a central role in the definition of the political space. It is the only year, where the first axis does not refer to the traditional left-right dimension about State intervention, but to the European Integration process that includes the issue of implementing a unique currency. The factorial space is very clearly divided by two axes :

1. Axis 1 (horizontal) (Europe) encompasses issues on *effect of the continuation of EU on the French economic growth*, *France benefited from its belonging to the EU*, *unique currency for the EU* and *feeling if France abandoned the EU* ;

2. Axis 2 (vertical) (PMR, EPL, Government size) relates to the *reduction of working time to 35 hours without any decrease in monthly wages*, *creation of* 350.000 *public jobs*, *raise by* 1000 *Francs per month of the minimum wage* and *positive feeling about privatizations*.

Thus, the first and main axis is defined by European issues, while the second axis is linked to the economic debate on Product Market Regulation, Employment Protection Legislation and Government Size (Figure 2.9).

The mapping of voters' attitudes on this factorial space reveals that the Right supporters are those who ask for a liberal policy on the national as on the international issues (Figure 2.9). Indeed, these are (however moderately) against the proposed increase in the minimum wage, the creation of public jobs and the 35 hours working time without any wage decrease ; they have positive attitudes towards privatizations. At the same time, they strongly agree with the implementation of a unique currency and consider that the EU reduces the negative impact of globalization. They would indeed feel great regrets whether France should abandon the EU. Notice however, that those voters who ask for a highly liberal policy at the national level (extreme modalities) lie further from the Right (RPR and UDF) and closer to the Far Right (FN) on this axis. Left-wing voters oppose any liberal policy at the national and at the international level. They hold extreme values for the national issues and moderate values regarding European issues. Symmetrically to what we observed for the Right, but this time at the international level, the electorate which expresses a strong demand for protectionist policies lie further from the Left parties (Verts, PS, Extr G, PCF) and closer to the Far Right (FN). Hence, the political space appears clearly divided into three political blocs : the Right, the Left and the Far Right, which are divided by two orthogonal dimensions.

Turning to the labor market position of the French voters, we notice that the electorate which supports PMR and EPL and has moderate attitudes towards Europe is mainly composed by employees and managers from the public sector (Figure 2.10). By opposition, the electorate which favors liberal policies on both axes encompasses managers and associate professionals from the private sector, as well as foremen and free-lance workers. Finally, the highly negative attitudes

towards Europe are to be found in blue-collar and elementary workers, while the high demand for liberal policies at the national level come from farmers, craftsmen and storekeepers.

Five years later, during the 2002 Presidential elections, the factorial space is the same, except that the two main dimensions have inverted their weights : the main dimension that structures the political demand is related to traditional left-right economic issues about equality and the role of the state in the economy (PMR, EPL, government size), while the second dimension refers to Europe :

1. Axis 1 (horizontal) (PMR, EPL, Government size) encompasses *positive feeling about privatizations*, *firms should be free to hire and fire* and *the number of public employees should be reduced* ;

2. Axis 2 (vertical) (Europe) encompasses *positive feeling about the replacement of Franc by Euro* and *feeling if France abandoned the EU.*

Mapping voters' attitudes on this factorial space, we observe that a high demand for liberal economic policies is coming from an electorate, which departs from the Right voters (Figure 2.11, lower left side). Moreover, there is a high protectionist demand among an electorate that is far from the Left or Extreme Left core voters (lower right side of the graph). Importantly, these two types of protests can be reconciled on the European dimension : they both oppose European integration. These are the voters of the Far Right candidates (Le Pen, Mégret) that lie at the lower side of our space. By contrast, the supporters of Left and Right candidates do support the European integration. They can be divided according to the first axis, which relates to attitudes towards PMR, EPL and the size of government. Indeed, the electorate of the Right candidates (Bayrou, Chirac) support Europe and have (moderate) positive attitudes towards privatizations and the reduction of the number of public employees. While the electorate

of the Left candidates (Jospin, Taubira, Chevenement) have positive attitudes towards Europe and negative ones towards privatizations and the reduction of public employees.

Looking at the occupational profile of individuals (Figure 2.12), we notice that the private sector, with the only exception of blue-collars and service employees, is closer to the positive positions towards privatizations and the reduction of the number of public employees (left hand side of the graph). By opposition, the public sector is on the other side of the axis (right-hand side of the graph). Concerning the opposition to Europe, we further notice that low-income workers are part of this electorate (blue-collars, service employees of the public sector, craftsmen, storekeepers).

Thus, in 2002, the move to the policy centre of the main Left candidate (Jospin) often told to be the cause of its first-round loss (Kuhn, 2002 ; Laver, Benoit and Sauger, 2006) indeed proves to be a strategic error here, since it does not allow to answer to the specific demand against Europe coming from the bunch of low-income workers.

2.5   Conclusion

Findings The analysis we conducted on French post-electoral surveys over three decades (1978-2002) implies two sets of results. The first one refers to the multidimensionality of the political demand. Indeed, our analysis shows that the political space is structured by several dimensions, mostly related to economic issues that cannot be reduced to a single dimension[18]. Not surprisingly, the main di-

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18. As Benoit and Laver (2006 :73) highlight : "A general problem that confronts any analyst who uses a spatial model of political competition has to do with determining the number and identity of the policy dimensions needed to generate a useful and valid representation of politics in any given setting. This is critical, because different models of political competition have different implications depending on whether decision making is seen as taking place within a policy space of one, two, three, four, or many dimensions. Most strikingly, many models make completely different predictions for policy spaces with one, as opposed to more than one,

mension, which holds throughout the period, refers to "Public intervention in the economic field". This can be assimilated to a left-right axis with an homogeneous electorate along a continuum. However, contrary to what is usually assumed by political economy models, the political space is also largely divided by a second dimension. From 1988 to 1995, the "Degree of satisfaction vis-à-vis the functioning of the democracy" divides the voters of moderate parties from the voters of extreme parties. 1995 is a breaking point : A third dimension barges into the political arena and deals with "European integration". Finally, the structuring power of this third dimension becomes major from 1997 onwards, although not weakening the debate on public intervention. We believe the change in political demands can be directly related to the economic context : The economic crisis of the 80s and the European integration process of the 90s are conveyed into the political space.

Our second set of results is related to the specification of socio-economic groups, who are holding these demands. In 1978, the division that exists in the political demand makes a strong differentiation between two homogeneous social blocs. Surrounding the Right, there is an alliance between the private sector (middle and high-level income), the agricultural sector and self-employed workers. All of them demand less taxation and less public intervention (privatization, labor market deregulation). But the bloc begins to split in 1988, as the economic crisis leads self-employed workers to hold-off the alliance. Indeed, self-employed workers demand an even more liberal policy to sustain their activity, which leads them later to oppose the involvement of France in the European construction in 2002[19]. As for the governmental Left, the alliance lies between the public sector and the blue-collars. Both demand more public intervention and reduced inequalities (more taxation). This alliance breaks up in 1995, the triggering fact being

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dimension.". Hence, there is a need to empirically look for the number of structural dimensions in any particular political space over time.

19. This is also the case during the 2005 Referendum on the European Constitution. See in the appendix.

the eruption of the European dimension into the political debate. Blue-collars are directly concerned with the market orientation of the European Union, an issue that leads them to turn themselves to the Far Left or the Far Right in 2002.

Policy Implications The evolving multidimensional configuration of the policy space we investigated has significant analytical implications. Indeed, our findings indicate significant changes in the social bases of voting and party proximity from 1978 to 2002, especially after the breaking point of 1995. We clearly showed that the outburst of the social blocs that traditionally supported the governmental parties in France implied a political crisis in 2002. We thus identified the roots of the crisis, but also determined which social blocs are today crystallized around the main dimensions of the French political space. Below, we further propose three ways to get out the crisis, which imply institutional change.

First, there should be a way to recompose the Right-wing social alliance. The main difficulty is to answer the demand for labor market deregulation issued by self-employed workers, given that this demand is opposed by private sector employees who wish to be protected against unemployment. To overcome this opposition, one could reform the labor market to induce a greater flexibility, while insuring private sector employees (e.g. through unemployment system reform, including lifelong learning strategies). This would be close to a "flexicurity" solution (Gautié, 2003 ; OECD, 2004 ; Barbier, 2007).

Second, institutional reforms on European integration modalities might help recompose the Left-wing social bloc. Indeed, low-revenue workers (i.e. blue-collars) are distant vis-à-vis the European integration, while it is well supported by middle and high-revenue categories of the public sector. The answer to this contradiction could be to break the apparent link between liberal policies and European integration process, e.g. by promoting European trade unions (Gabel, 1998 ; Ebbinghaus, 2002).

Finally, one could imagine the formation of a new social bloc. This bloc should no more be endorsed on the traditional pros-cons Public intervention, but might rely on the new divide pros-cons European integration. A dominant social bloc would then ally middle and high-revenue workers of the private and public sector (thus excluding self-employed workers and blue-collars). The political representation system would though probably need a change to integrate this new cleavage, by allowing a centrist party to strongly enter the political game (Myerson, 1999).

Hence, the three options we propose are strongly related to institutional reforms, to take place in the economic or political fields. Notice that these do not respond to economic efficiency need, nor to value judgment as an hypothetical social justice (Amable and Palombarini, 2005). The need is for a viable system, whose choice is contingent upon the selected political project. For the analysis to be complete then, there would be a need to study the dynamics of the supply, partly independent from the dynamics of the demand. Yet this task is left to another research[20] (See the contribution of Laver, Benoit and Sauger, 2006).

Extensions Despite offering a detailed empirical look at the spatial mapping of French voters ideal points in a dynamic perspective, our account remains preliminary. Indeed, there are numerous methodological issues to be tackled and substantive questions remain to be answered. Most importantly, our study does not allow to compute the political equilibrium, since our data does not inform us on the effective position of candidates or parties on the political space (policy platforms). It would thus be interesting to analyze the policy platforms of parties and candidates at stake during these elections. Attempting a matching of policy positions of parties or candidates to voter positions would indicate whether the

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20. As Benoit and Laver (2006 :99) wisely notice, "mass survey research is useful for telling us how citizens perceive parties, but inherently problematic when used in estimating where these parties are actually positioned in relation to different dimensions of policy".

dynamics of the supply is partly independent from the dynamics of the demand. However, this would certainly raise new methodological issues.

Annexe 2.A   Results of Elections

TAB. 2.1: 1978 French Legislative Elections : Results of the 1st Round

Party	%	Total (%)
RPR - Rassemblement Pour la République	22.62	
CDS - Centre des Démocrates Sociaux	21.45	
Majorité présidentielle	2.39	
Right		*46.46*
FN - Front National	1.60	
Far Right		*1.60*
PS - Parti Socialiste	22.58	
PCF - Parti Communiste Français	20.55	
Ecologistes	2.14	
MRG - Mouvement des Radicaux de Gauche	2.11	
Left		*47.38*
Extrême gauche	3.33	
Far Left		*3.33*
Others	1.17	

TAB. 2.2: 1988 French Presidential Elections : Results of the 1st Round

Candidate	Party	%	Total (%)
Chirac	RPR - Rassemblement Pour la République	19.95	
Barre	UDF - Union pour la Démocratie Française	16.54	
	Right		*36.49*
Le Pen	FN - Front National	14.37	
	Far Right		*14.37*
Mitterrand	PS - Parti Socialiste	34.10	
Lajoinie	PCF - Parti Communiste Français	6.75	
Juquin	outsider PCF	2.09	
Waechter	Verts	3.77	
	Left		*46.71*
Boussel	PT - Parti des Travailleurs	0.38	
Laguiller	LO - Lutte Ouvrière	1.99	
	Far Left		*2.37*

TAB. 2.3: 1995 French Presidential Elections : Results of the 1st Round

Candidate	Party	%	Total (%)
Chirac	RPR - Rassemblement Pour la République	20.84	
Balladur	RPR - Rassemblement Pour la République	18.58	
de Villiers	MPF - Mouvement Pour la France	4.74	
	Right		*44.16*
Le Pen	FN - Front National	15.00	
	Far Right		*15.00*
Jospin	PS - Parti Socialiste	23.30	
Hue	PCF - Parti Communiste Français	8.64	
Voynet	Verts	3.32	
	Left		*35.26*
Laguiller	LO - Lutte Ouvrière	5.30	
	Far Left		*5.30*
Cheminade	S&P - Solidarité et Progrès	0.28	

TAB. 2.4: 1997 French Legislative Elections : Results of the 1st Round

Party	%	Total (%)
RPR - Rassemblement Pour la République	15.70	
UDF - Union Pour la Démocratie Française	14.22	
Divers droite	6.60	
Right		*36.52*
FN - Front National	14.94	
Far Right		*14.94*
PS - Parti Socialiste	23.53	
PCF - Parti Communiste Français	9.94	
Verts	6.81	
RDS - Réformateurs Démocrates Sociaux	1.45	
Divers gauche	2.80	
Left		*44.53*
LO (Lutte Ouvrière) + LCR (Ligue Communiste Révolutionnaire)	2.52	
Far Left		*2.52*
Others	1.49	

TAB. 2.5: 2002 French Presidential Elections : Results of the 1st Round

Candidate	Party	%	Total (%)
Chirac	RPR - Rassemblement pour la République	19.88	
Bayrou	UDF - Union pour la Démocratie Française	6.81	
Boutin	Boutin2002	1.19	
Lepage	Ecolos	1.88	
Saint-Josse	CPNT - Chasse, Pêche, Nature et Tradition	4.23	
Madelin	DL - Démocratie Libérale	3.91	
	Right		*37.90*
Le Pen	FN - Front National	16.86	
Mégret	MNR - Mouvement National Républicain	2.34	
	Far Right		*19.20*
Jospin	PS - Parti Socialiste	16.18	
Hue	PCF - Parti Communiste Français	3.37	
Mamère	Verts	5.25	
Chevènement	MDC - Mouvement Des Citoyens	5.33	
Taubira	RG - Radicaux de Gauche	2.32	
	Left		*32.45*
Laguiller	LO - Lutte Ouvrière	5.72	
Glückstein	PT - Parti des Travailleurs	0.47	
Besancenot	LCR - Ligue Communiste Révolutionnaire	4.25	
	Far Left		*10.44*

Annexe 2.B   Selected Questions

Variables from the 1978 survey For each of the following actions a society like ours could promote, are you "strongly in favor", "in favor" or "not in favor" of it ?

- To suppress the advantages of a number of people, in order to reduce social inequalities
- To enlarge and develop the nationalized sector, even if this implies a limitation of private firms
- To raise taxes, in order to obtain completely free public services like Health, Transportation, Schools, etc.
- To forbid any redundancy, providing no new job has been guaranteed

For the defense of your interests, do you "strongly trust", "trust", "distrust" or "strongly distrust" unions ?

If strikes were forbidden, would you say that it is "a very serious problem", "a serious problem", "not a serious problem" or "not a problem at all" ?

Variables from the 1988 survey Do you "strongly agree", "agree", "disagree" or "strongly disagree" with the following sentences :
"If everyone earned the same wage, it would not elicit effort."
"It is dangerous to have the will to deeply transform society."

To face economic difficulties, do you think :
- The government should be confident in firms and give them more freedom
- Or to the contrary, the government should control firms and strengthen market regulation ?

What do the following words evoke to you? A "very positive", "positive", "negative" or "very negative" feeling?

- Profit
- Stock Exchange
- Nationalizations
- Privatizations

Do you "agree" or do you "disagree" with the following action people sometimes engage in, to claim their opinions :

- Strike

The abolition of the following items would seem to you "a very serious problem", "a serious problem", "not a serious problem" or "not a problem at all"?

- Strike Right
- Unions

Do you "trust" or do you "distrust" unions?

Do you "strongly agree", "agree", "disagree" or "strongly disagree" with the following sentence :
"The government should guarantee a minimum income for each household."
"Wealth tax should be restored."

Variables from the 1995 survey Here are a number of problems which occur in France nowadays. Give a mark from 0 to 10 to indicate the importance of each in your voting behavior for the first round of the 1995 presidential election :

- Social Protection

- Purchasing Power and Wages

- Unemployment

- Working Time

- European Construction

- Social Exclusion

What do the following words evoke to you ? A "very positive", "positive", "negative" or "very negative" feeling ?

- Equality

- Reform

- Solidarity

- Europe

Variables from the 1997 survey Are you "Pros" or "Cons" implementing a unique currency for the European Union, given that it means "Franc" will be replaced by "Euro" ?

Do you consider France benefited from its belonging to the European Union ?

If, tomorrow, an announcement were done to say that European Union is abandoned, would you feel "big regrets", "indifference" or "high relief" ?

Do you think the continuation of the European unification will have "positive effects", "negative effects" or "no particular effect" on the French economic growth ?

Do you "strongly agree", "agree", "disagree" or "strongly disagree" with the following sentence :

"With the European Union, France will be better protected against the risks linked to globalization."

What do the following words evoke to you? A "very positive", "positive", "negative" or "very negative" feeling?

- Privatization

During the electoral campaign, we heard the following propositions. For each of them, are you "highly supportive", "supportive", "not supportive" or "not supportive at all"?

- The raise by 1000 Francs per month of the minimum wage
- The creation of 350.000 public jobs
- The reduction of working time to 35 hours without any decrease in monthly wages

Variables from the 2002 survey Do you "strongly agree", "agree", "disagree" or "strongly disagree" with the following sentence :
"SNCF (French railways) would better work if it were managed by the private sector."

Which one of the two following opinions do you most agree with?

- Firms should be free to hire and fire according to their needs
- Firms should be inspected by the state before to be allowed to fire

If, tomorrow, an announcement were done to say that European Union is abandoned, would you feel "big regrets", "indifference" or "high relief"?

What do the following words evoke to you? A "very positive", "positive", "negative" or "very negative" feeling?

- United States of America

- Globalization

- Profit

- Privatization

Do you "strongly agree", "agree", "disagree" or "strongly disagree" with the following sentence :

"The number of public employees should be reduced."

Do you think the following actions had "very positive", "positive", "negative" or "very negative" effects?

- The 35 hours working time

- The replacement of "Franc" by "Euro"

Annexe 2.C   Graphic Analysis
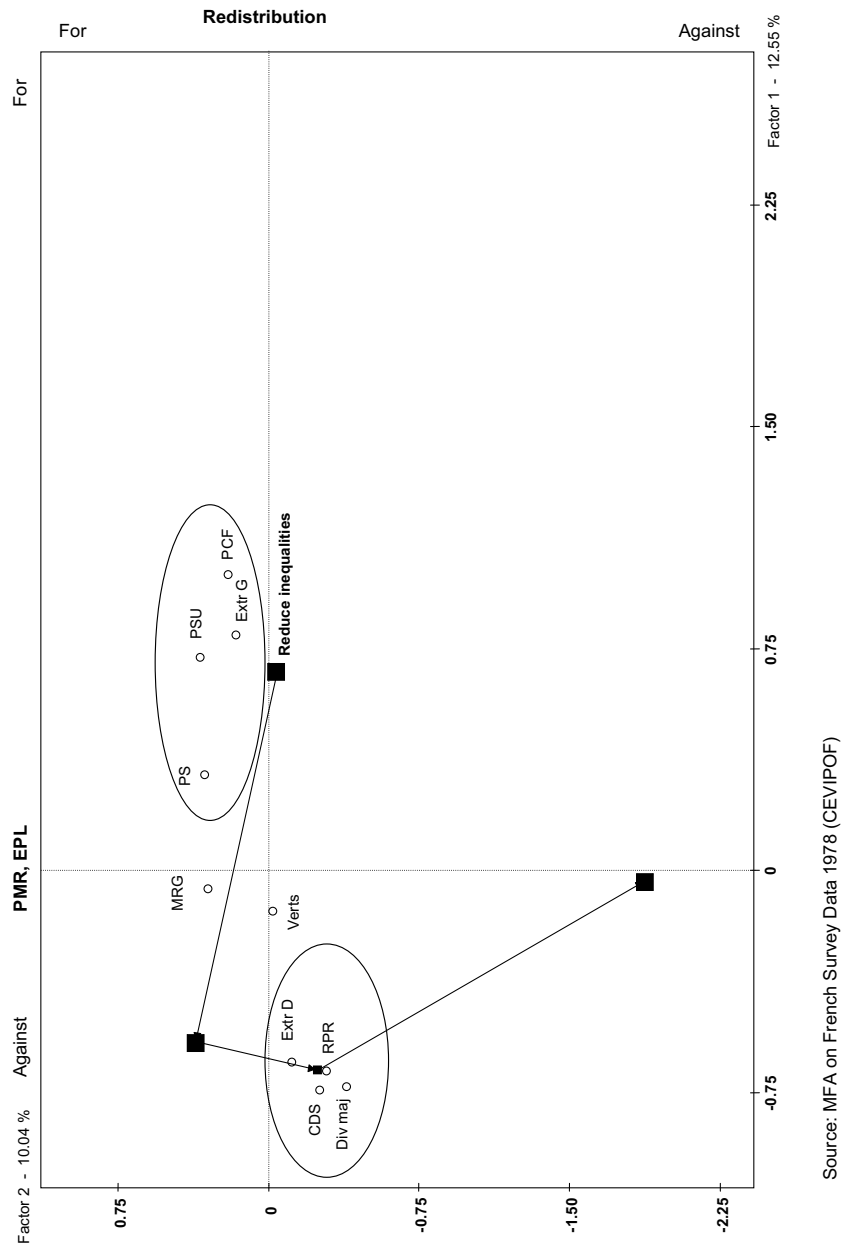
FIG. 2.1 – 1978 : Policy preferences and vote
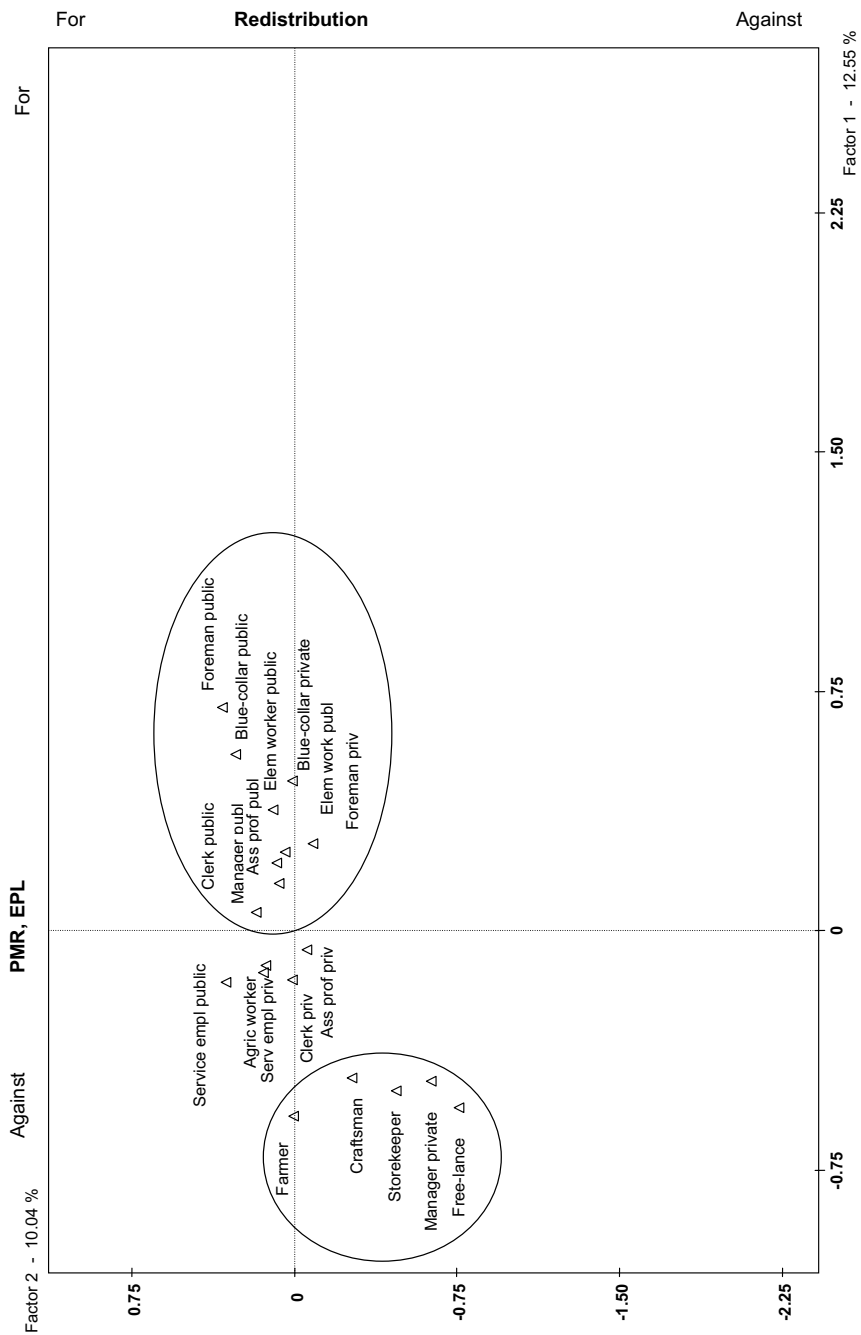
FIG. 2.2 – 1978 : Socio-economic positioning and preferences
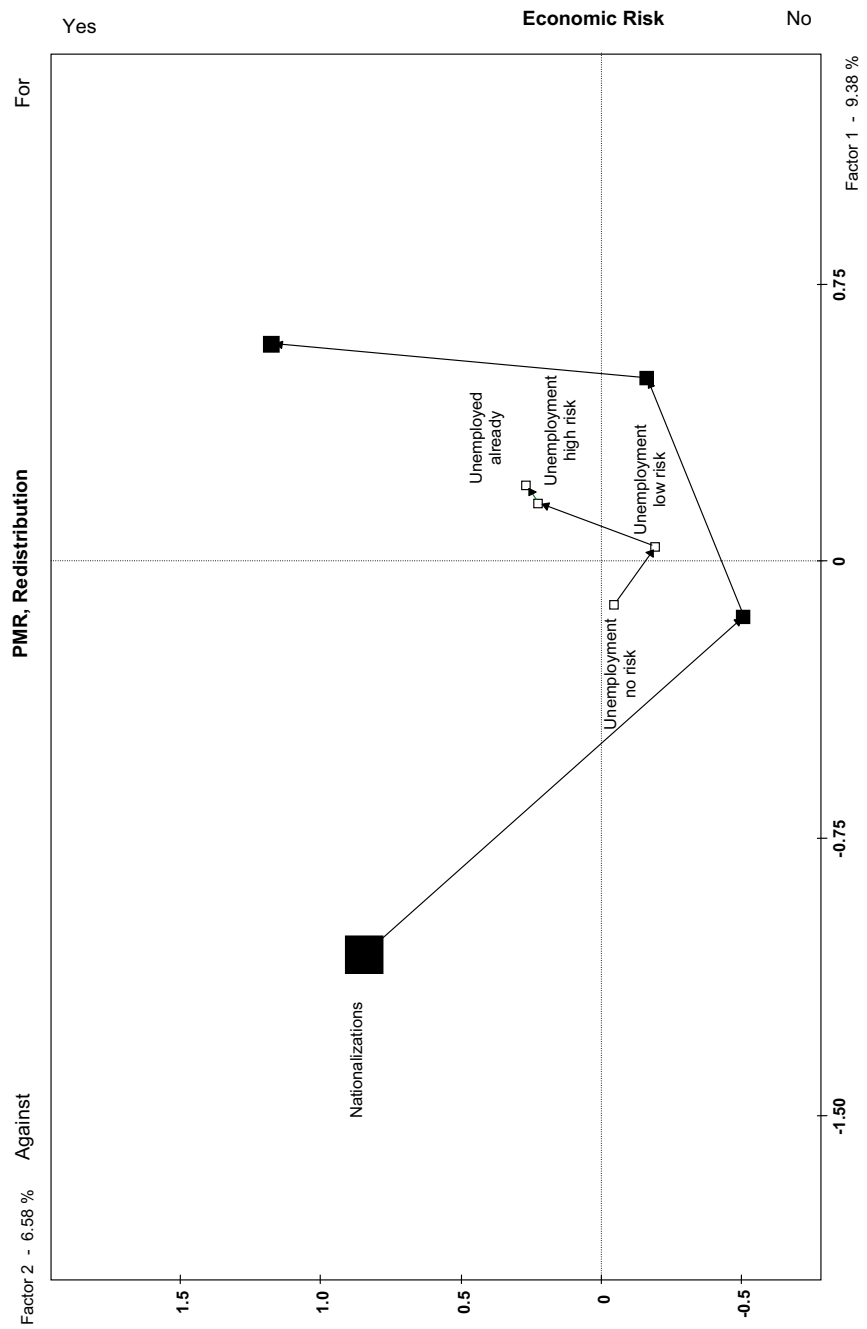
Fig. 2.3 – 1988 : Policy preferences in 2-dimensions
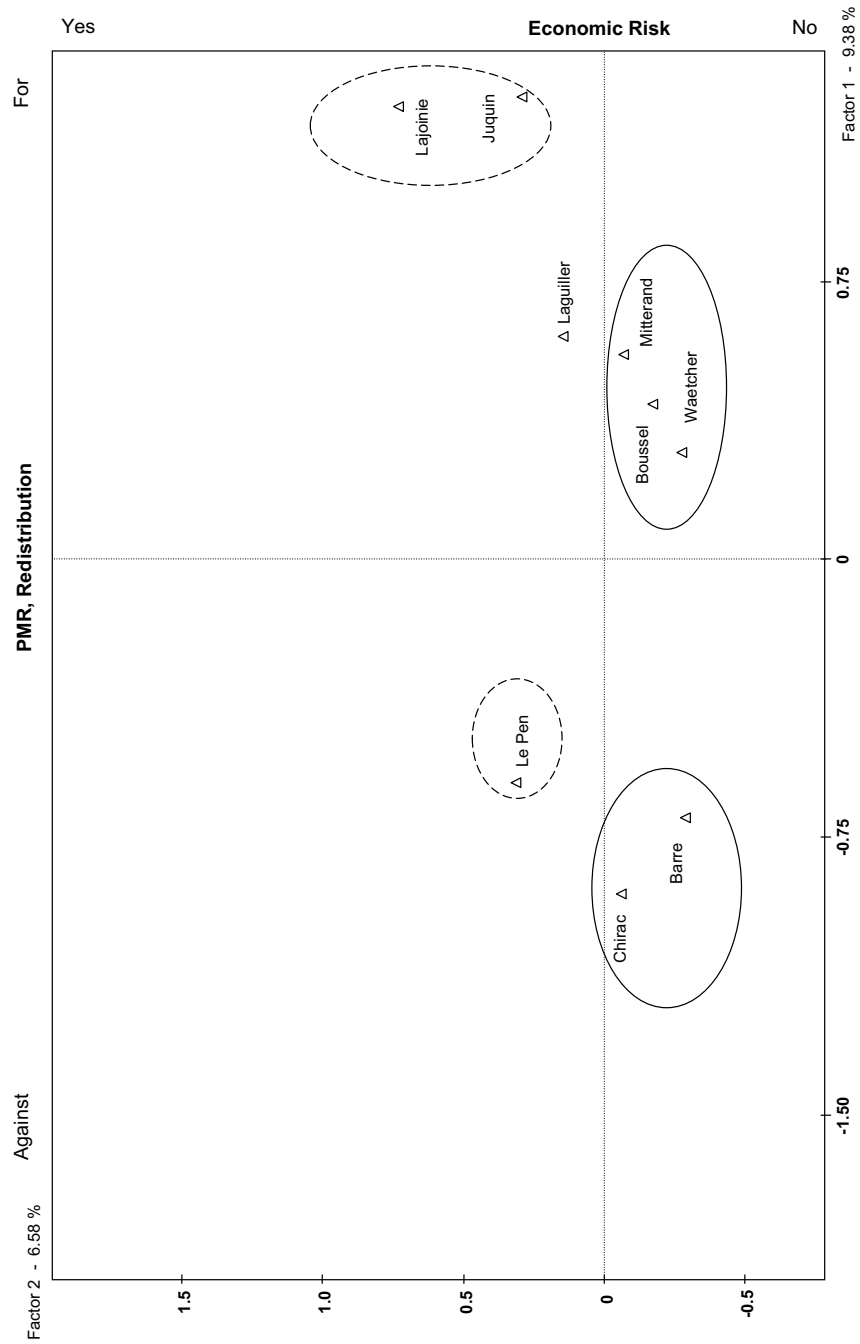
FIG. 2.4 – 1988 : Policy preferences and vote
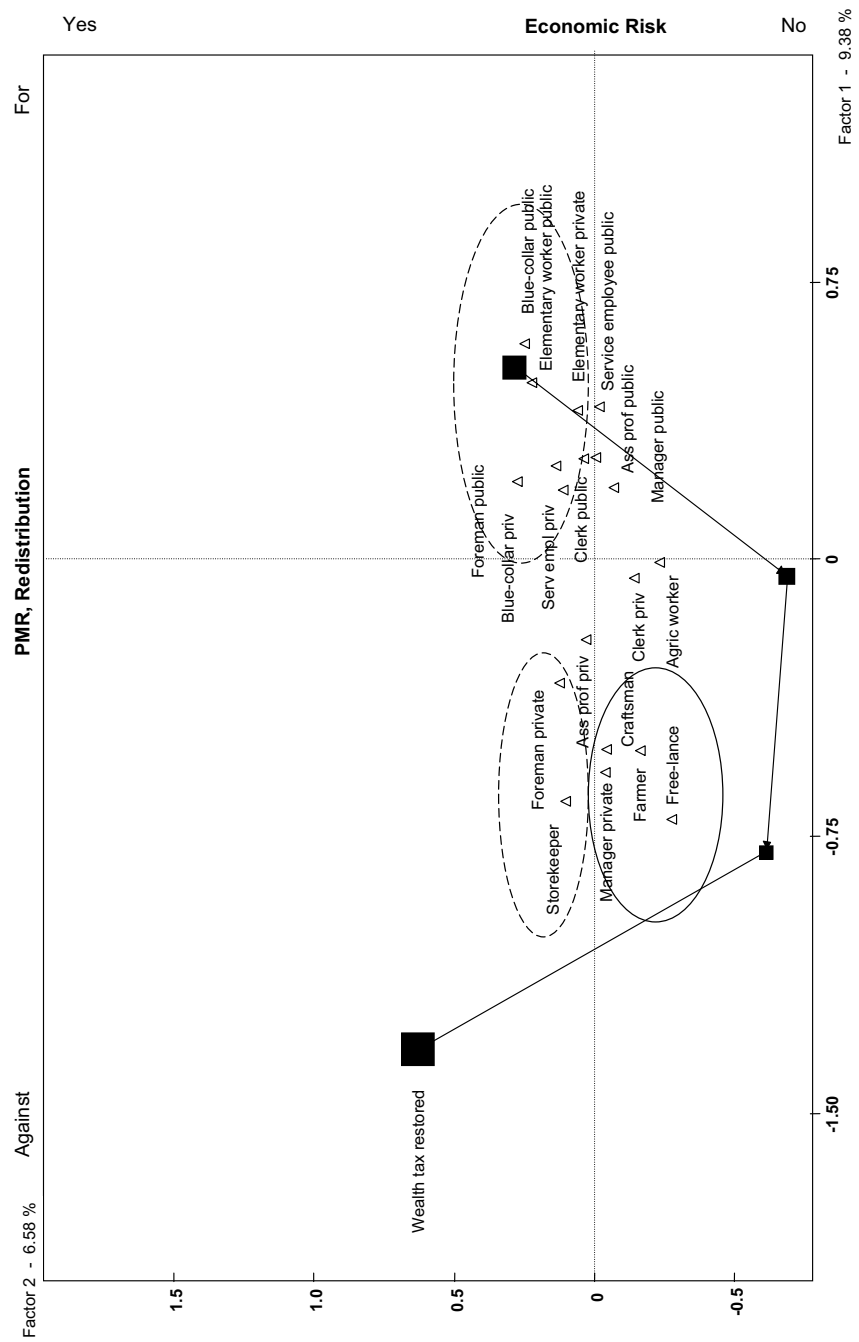
FIG. 2.5 – 1988 : Socio-economic positioning and preferences
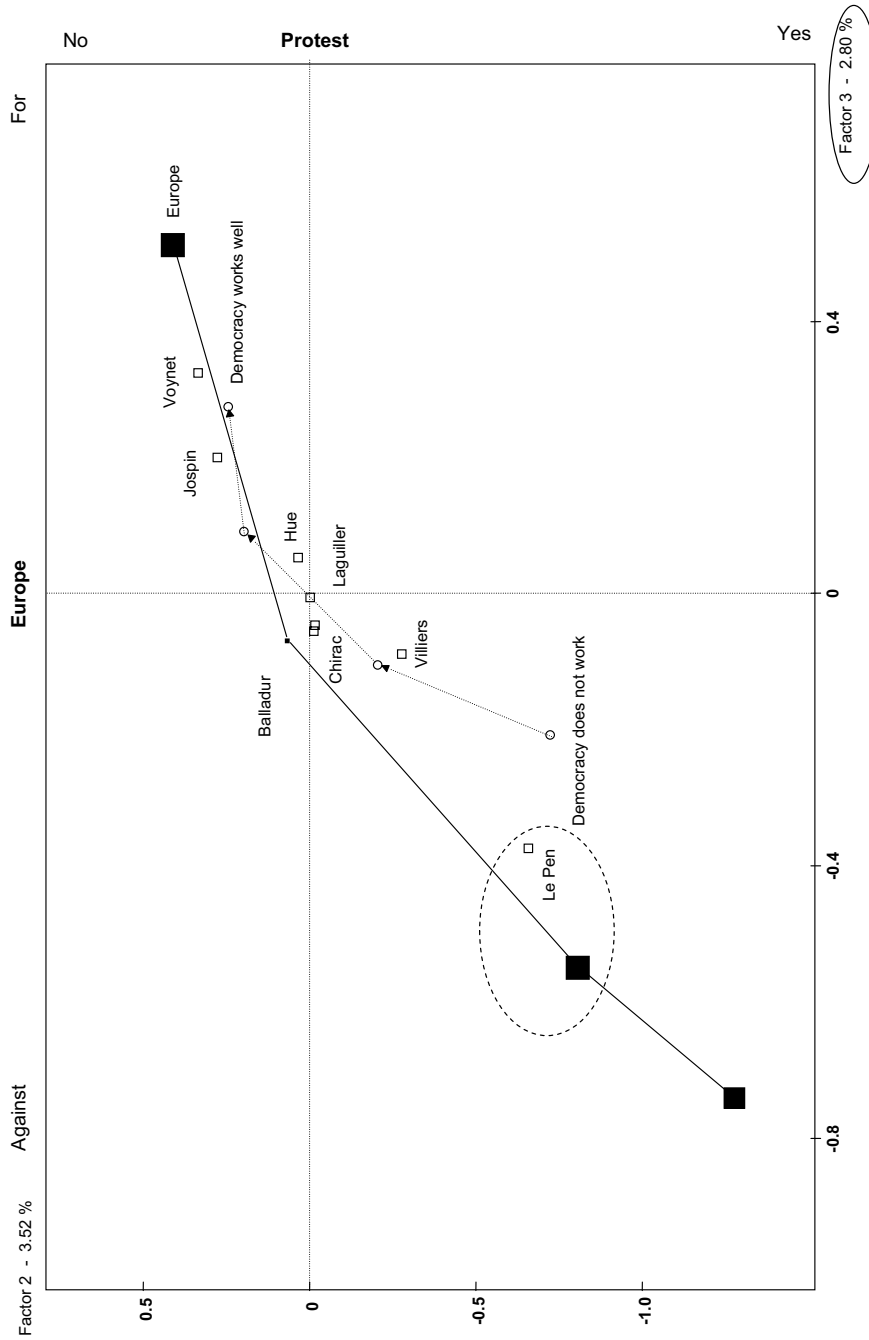
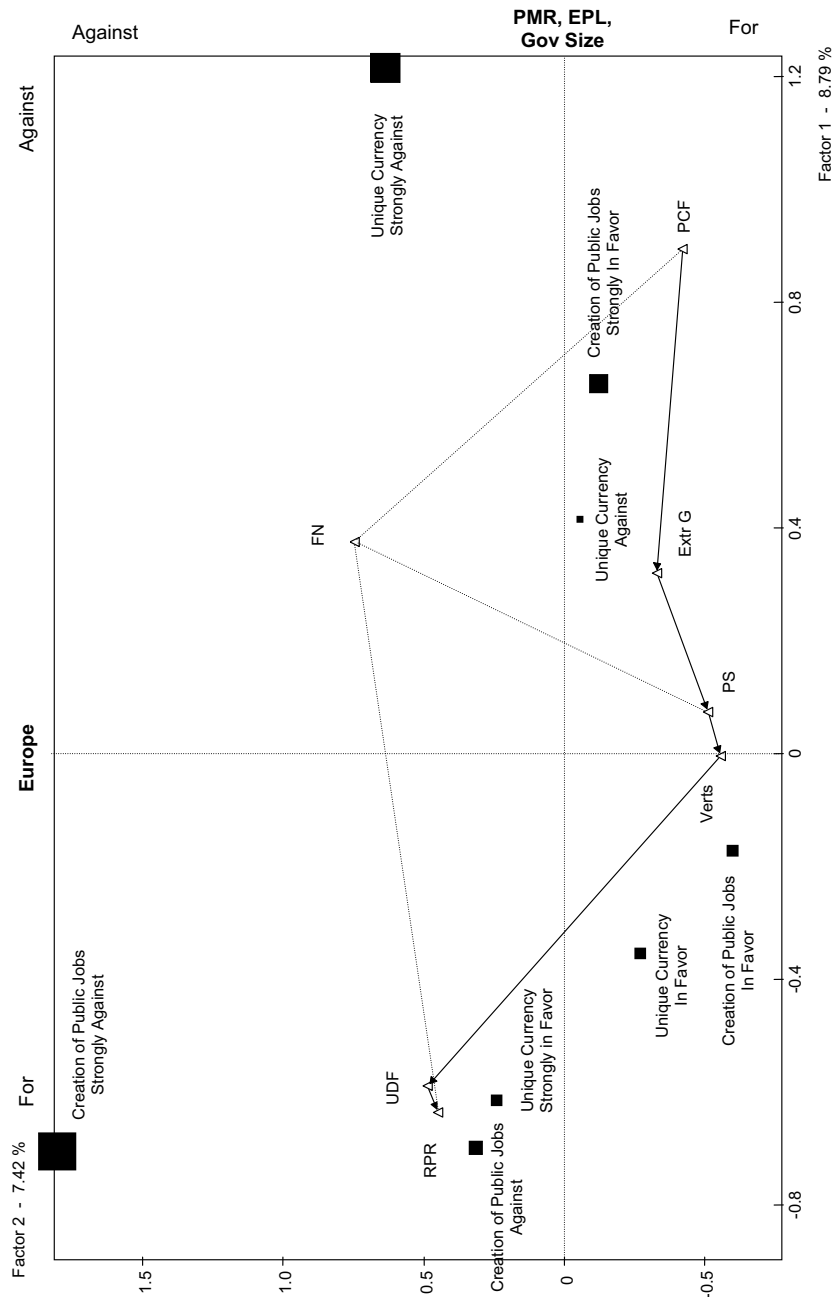FIG. 2.6 – 1995 : A third dimension barges into the space
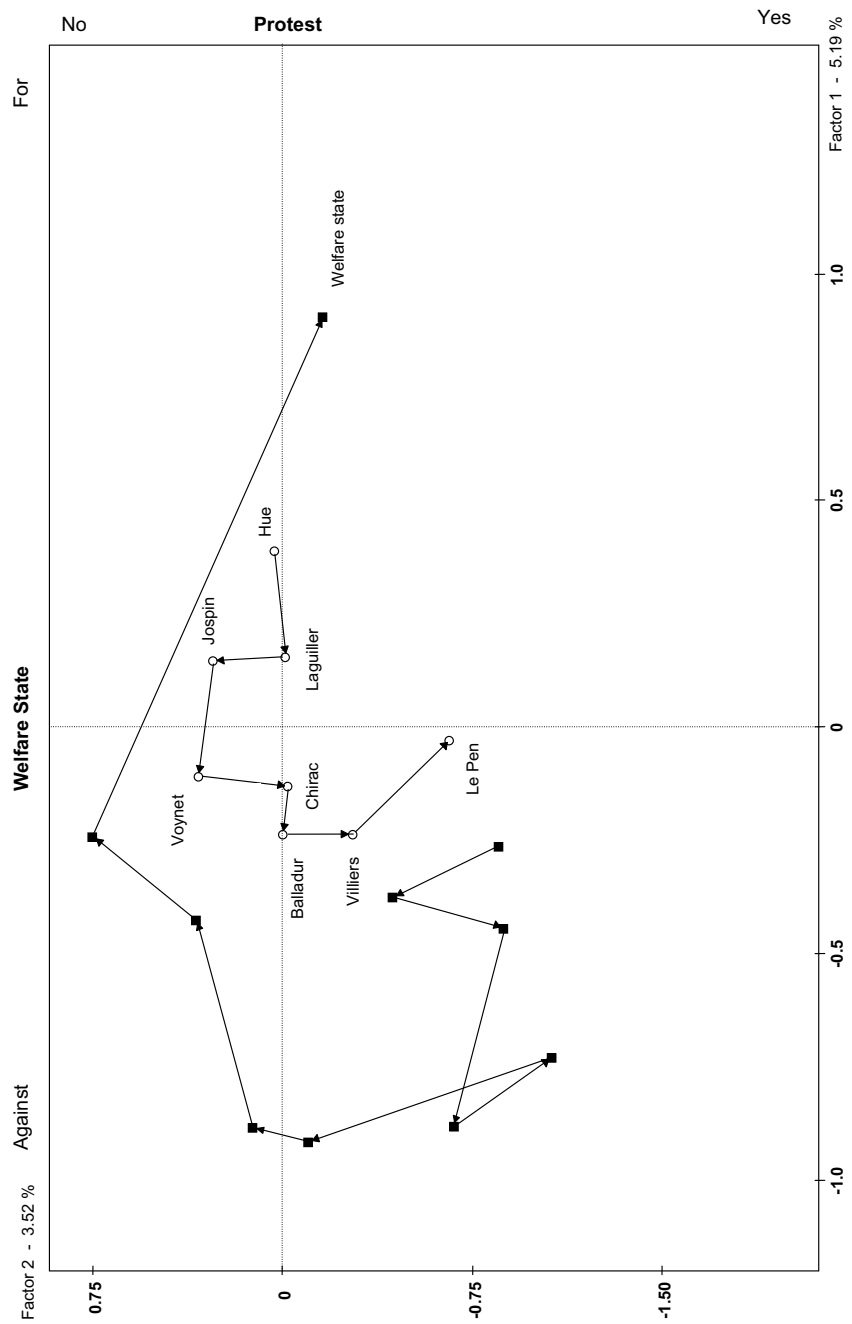
Fig. 2.7 – 1995 : Policy preferences and vote
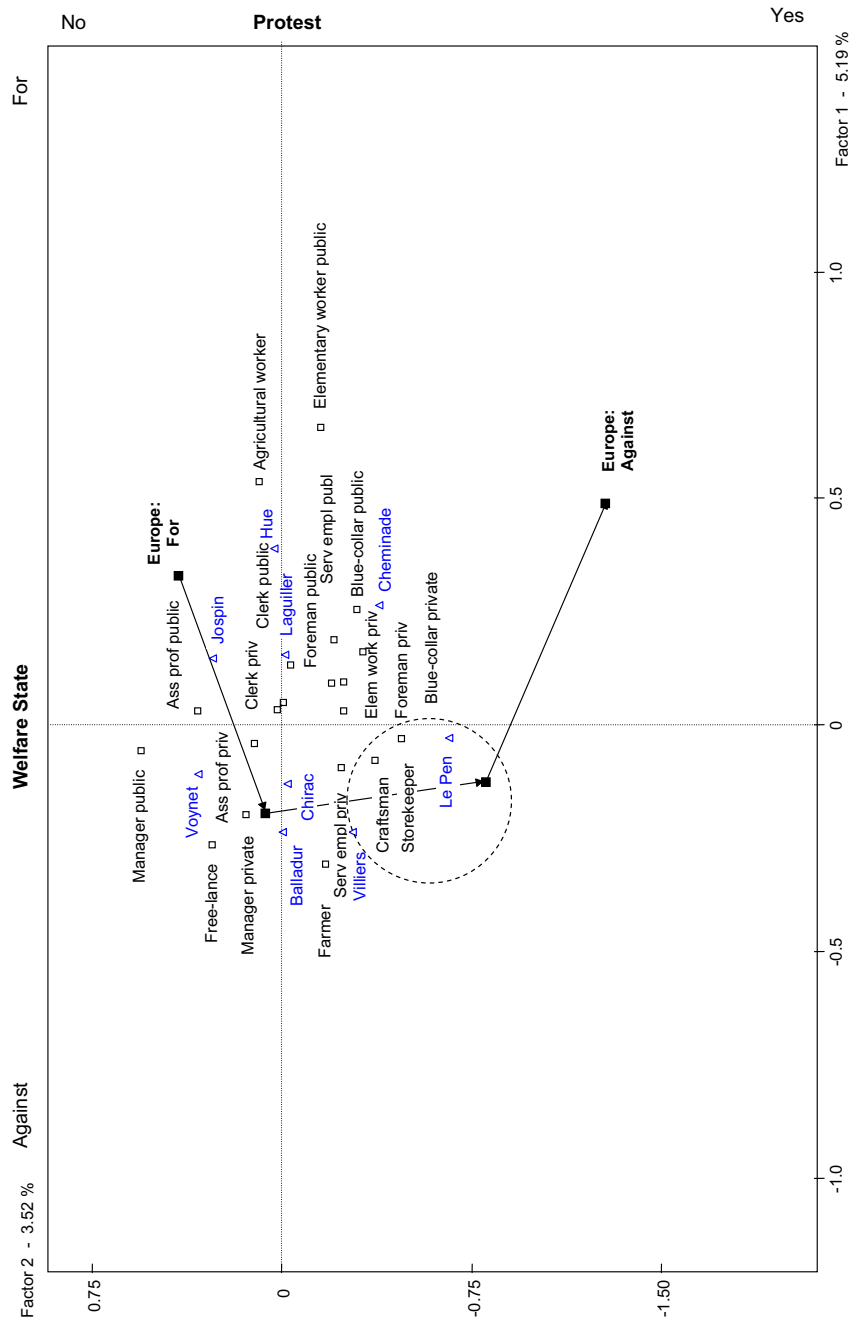
FIG. 2.8 – 1995 : Socio-economic positioning and preferences

FIG. 2.9 – 1997 : Policy preferences and vote in 2-dim
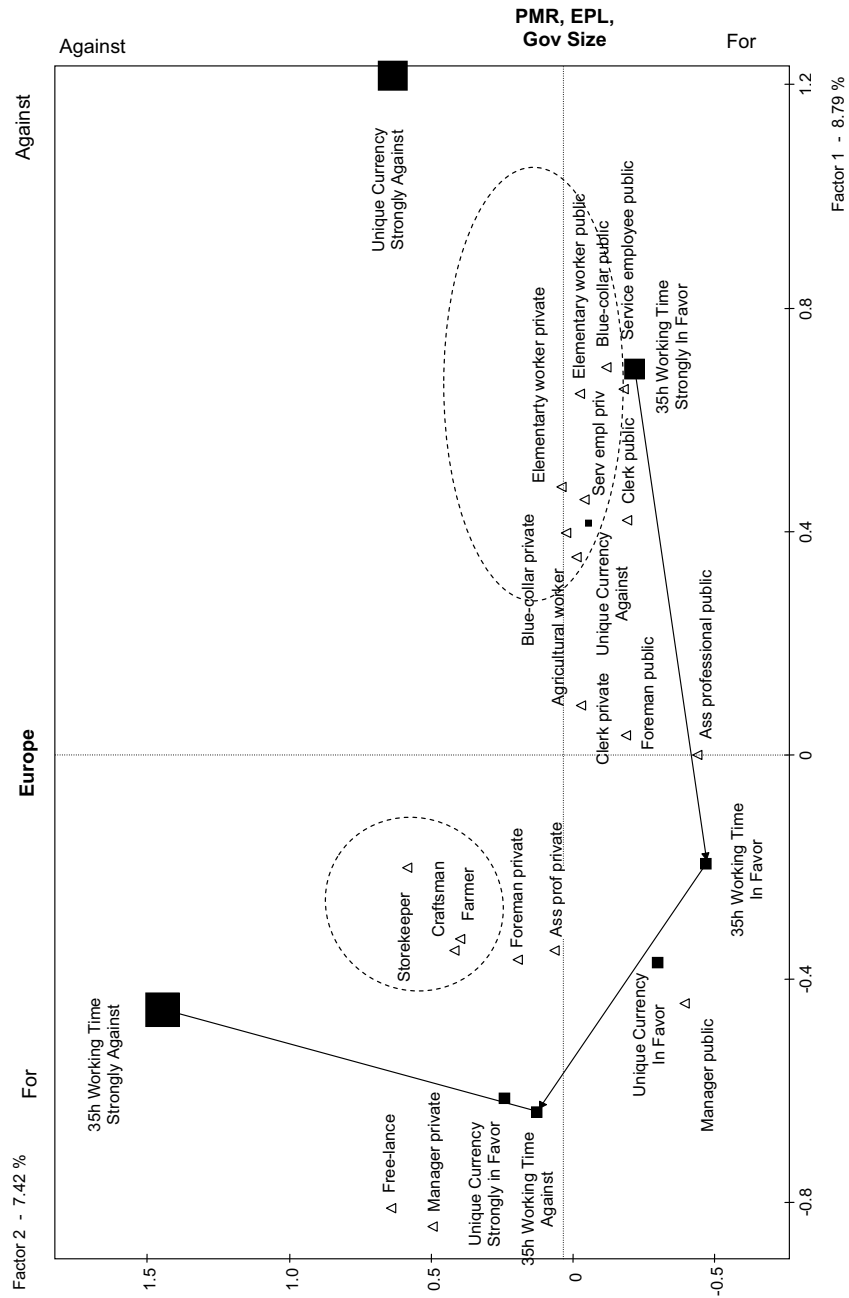
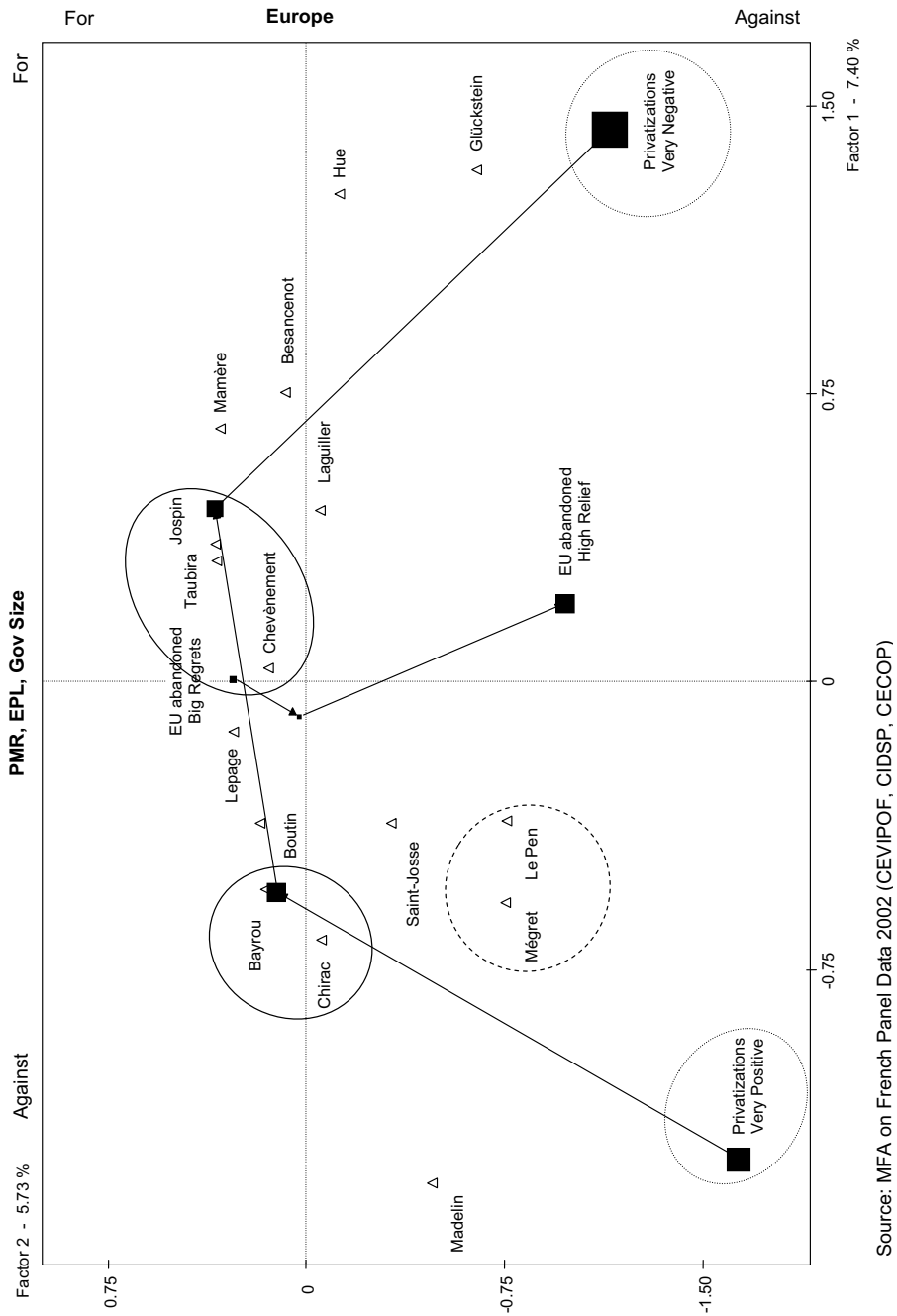FIG. 2.10 – 1997 : Socio-economic positioning and preferences

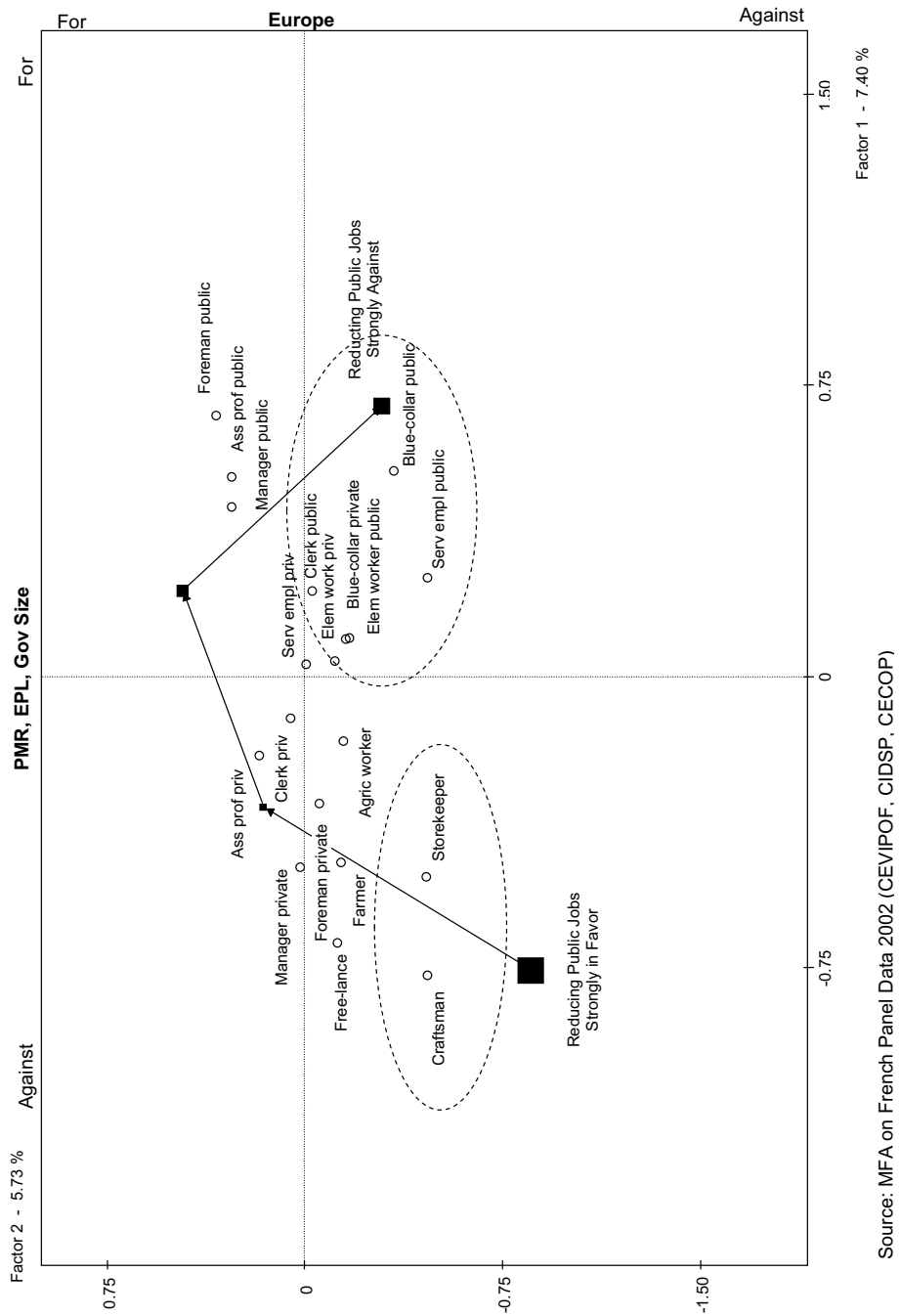Fig. 2.11 – 2002 : Policy preferences and vote

FIG. 2.12 – 2002 : Socio-economic positioning and preferences

Annexe 2.D Referendum on the European Constitution

Tab. 2.6: Referendum on the European Constitution, 2005

(in %)	Yes	No
Total	45	**55**
Maastricht referendum	*51*	*49*
Occupation		
Farmers	30	**70**
Maastricht referendum	*38*	*62*
Crafstmen, Storekeepers	49	**51**
Maastricht referendum	*51*	*49*
Managers	**65**	35
Maastricht referendum	*67*	*33*
Associate Professionals	47	**53**
Maastricht referendum	*62*	*38*
Clerks	33	**67**
Maastricht referendum	*47*	*53*
Blue-collars	21	**79**
Maastricht referendum	*39*	*61*
Employment status		
Private sector employees	44	**56**
Maastricht referendum	*50*	*50*
Publicly employed	36	**64**
Maastricht referendum	*51*	*49*
Self-employed	42	**58**
Maastricht referendum	*44*	*56*
Unemployed	29	**71**
Maastricht referendum	*41*	*59*
Students	**54**	46

To be continued next page...

Tab. 2.6: Referendum on the European Constitution (cont')

(in %)	**Yes**	**No**
Maastricht referendum	*59*	*41*
Retired	**56**	44
Maastricht referendum	*54*	*46*
Net family income		
Less than 1000 euros	40	**60**
1000 to 2000 euros	35	**65**
2000 to 3000 euros	42	**58**
More than 3000 euros	**63**	37
Partisanship		
Far Left	6	**94**
Maastricht referendum	*30*	*70*
Communist Party (PCF)	2	**98**
Maastricht referendum	*19*	*81*
Left (PS)	44	**56**
Maastricht referendum	*78*	*22*
Left (Green)	40	**60**
Maastricht referendum	*57*	*43*
Center-Right (UDF)	**76**	24
Maastricht referendum	*61*	*39*
Right (UMP)	**80**	20
Maastricht referendum (RPR)	*41*	*59*
Far Right (MPF)	25	**75**
Maastricht referendum	*-*	*-*
Far Right (FN)	7	**93**
Maastricht referendum	*8*	*92*
No party	31	**69**
Maastricht referendum	*45*	*55*

Source : IPSOS

Chapitre 3

How Does Party Fractionalization Convey Preferences for Redistribution in Parliamentary Democracies ?[1]

In this chapter, we highlight the link between the political demand and social policy outcome while taking into account the design of the party system. The political demand is measured by individual preferences and the design of the party system is defined as the extent of party fractionalization. This is, to our knowledge, the first attempt in the literature to empirically link the political demand and the policy outcome with the help of a direct measure of preferences. Moreover, we account for an additional channel, so far neglected in the literature : The composition effect of the demand. Indeed, the heterogeneity of the demand within countries, more than the level of the demand itself, is shown to have a positive impact on welfare state generosity. This impact increases with the degree

of fractionalization of the party system. We run regressions on a sample of 18 OECD countries over 23 years, carefully dealing with the issues raised by the use of time-series cross-section data.

3.1   Introduction

The way agents' conflicting policy demands are brought together and conveyed into the set of choices of government is a major determinant of public policy outcome. In democracies, coalitions between social groups are generally formed inside the Parliament, which is a central body of national representation where elected parties meet each other and bargain together. The type of competition that governs political parties' negotiation is thus decisive, since it affects both their representativity and the number of parties that will finally accede to power (Cox, 1990 ; Lijphart, 1994).

In this chapter, we focus on the determinants of the welfare state. We develop an empirical analysis of the link between the political demand for redistribution and the redistributive policies actually implemented. Furthermore, we highlight the role played by the degree of fractionalization of the political supply in the transmission of the demand. Our contribution to the existing literature in comparative political economy is threefold.

First, we use a direct measure of preferences, thus avoiding the use of a proxy for the demand. Indeed, most scholars in empirical political economy use income to proxy preferences for redistribution, as suggested by the work of Meltzer and Richard (1981).

Second, we take into account the composition effect of the demand, through a measure of the dispersion of preferences. We thus render apparent the link existing between the degree of heterogeneity of voter preferences at the micro

level and the policy outcome at the macro level. By doing this, we take most advantage of our individual data on preferences.

Third, considering interactions, we do not only look at the demand, but also consider the political supply. Indeed, our setting allows the impact of the demand to be conditioned by the structure of the political supply. The structure of the political supply is here characterized by the degree of fractionalization of the party system.

Our empirical analysis uses micro- and macroeconomic data that cover 18 OECD countries and span over 23 years (1980-2002). We study the determinants of the welfare state, as measured by a global indicator of generosity elaborated by Scruggs (2004). The political demand is derived from microeconomic data, gathered in ISSP surveys along several years. More specifically, we use information concerning the proportion of individuals who agree with government redistribution, i.e. those who answered positively to the following question : "It is the responsibility of the government to reduce the differences in income between those with high income and those with low income".

Taking further advantage of our micro data on preferences, we account for an additional channel, so far neglected in the literature : The composition effect of the demand. Doing this, we aim to highlight the importance of the heterogeneity of the demand in determining the policy outcome. Using the 5-points answers to the question on redistributive policy (from 1 "Strongly Agree" to 5 "Strongly Disagree"), we measure the dispersion to the mean in the distribution of preferences each year, for each country. Finally, we consider the degree of fractionalization of the party system, measured by the fractionalization index of Rae (1967), taken from the database of Armingeon *et al.* (2004).

Our results are the following. First, we show that a naive demand effect is indeed at work : The level of preferences for redistribution do have an impact on the generosity of the welfare state. Second, the heterogeneity of the demand,

more than the level of the demand itself, is shown to have a strong positive impact on welfare state generosity. Finally, we show that the impact of the demand is conditioned by the party structure. Indeed, the positive impact of the demand (be it in level or in dispersion) is reinforced by the degree of fractionalization of the party system. However, controlling for country fixed effects, we do not find a strong evidence of a direct impact of party fractionalization by itself on the generosity of governments.

All these results are robust to a large variety of econometric specifications. Indeed, carefully dealing with the issues raised by the use of time-series cross-section data, we start our analysis with a simple benchmark model and add further complexity step by step, including fixed effects, slowly changing variables and dynamics.

The chapter is organized as follows. In Section 3.2, we review the related literature and further detail our argument. In Section 3.3, we describe the data used in the empirical analysis. Section 3.4 presents our estimation strategy and the results of the basic regressions, while criticisms are addressed in Section 3.5. Section 3.6 summarizes the findings and Section 3.7 concludes.

3.2   Conceptual Framework

In this section, we first review the literature related to the political determinants of the welfare state and the role of political institutions. We then present our argument and the mechanisms we want to make apparent in the regressions.

3.2.1   Related Literature

There is a long research tradition in political science that deals with the influence of electoral rules on party structures (Cox, 1990 ; Lijphart, 1994 and 1999). The Duverger's law predicts that the majority rule will lead to a two-

party system (Grofman, 2006). The outcome of the elections will be a single-party government much more often that when elections are held under the proportional rule. Indeed, the latter has a positive impact on the fractionalization of political parties and leads to coalition governments (Laver and Schofield, 1990).

Furthermore, some recent empirical research in political economics aims at studying the effect of electoral rules on social policy. Results show that majoritarian rule induces lower government spending, smaller budget deficits and more generally less protective welfare states than proportional rule (Iversen, 2005). However, the mechanism that is behind this result is not clear cut. On one hand, Milesi-Feretti, Perotti and Rostagno (2002) who study the size of government and Persson and Tabellini (1999) who consider the composition of government spending, all claim that the electoral rule has an effect on the public expenditure through the incentives of politicians to target marginal districts. According to the electoral rule, the distribution of preferences across social groups and across geographical districts will induce different equilibrium public policy. On the other hand, recent articles by Bawn and Rosenbluth (2006) and Persson, Roland and Tabellini (2007) points out that the electoral rule affects the level of public expenditures through the party structure and the type of government. They conclude that compared to single-party governments, coalition governments lead to higher government expenditures. Our analysis partly uses this latter approach, since we aim to show how party structure can impact policy outcome. To explain this result, several arguments are evoked.

An electoral accountability argument is proposed by Bawn and Rosenbluth (2006) : Single-party governments, even if they represent heterogeneous social groups, are supposed to internalize more efficiently the cost of their policy, as compared to several small parties that vie together within coalition governments and represent each a single social group. This argument is close to the common-pool problem that arises in centralized decision making, when the costs of a policy

are shared while the benefits are concentrated (Weingast, Shepsle and Johnsen, 1981).

Persson, Roland and Tabellini (2007) highlight the fact that economic policy formation is built on electoral conflicts between the government and the opposition, but also between parties within coalition governments. Given that the electorate can discriminate between different parties in a coalition government, the authors conclude (and empirically test) that social spending is higher under coalition governments, due to increased intra-government electoral competition. Finally, they claim that the mechanism that yields to inflate public expenditures under the proportional electoral regime has no direct link with the electoral rule, but instead owes to the fractionalization of political parties : "PR induces higher spending than majoritarian elections, but only through more party fragmentation and higher incidence of coalition government. In other words, if we hold the type of government constant, the electoral rule has no direct effect on public spending." (p.158) In the following, we analyze the direct impact of party fractionalization on the generosity of the welfare state. But going beyond the existing literature, we also introduce an interaction effect of party fractionalization with the political demand of voters.

Indeed, in democracies by definition political demand has a central role in policy formation. Hence, a proper analysis of economic policy should take into account the role played by the demand. This demand does, however, interact with the structure of the political supply. In fact, the way heterogeneous demands, when it comes to redistribution or social protection, are conveyed into the policy arena determines the size of public spending or the generosity of the welfare state. This depends on the structure of the political supply, in terms of party system and electoral rules. Consequently, it is the interaction between the conflictual demands and the way to satisfy them in accordance with the proper objectives of the political parties that determines the final policy equilibrium.

In this perspective, Amable and Gatti (2007) propose a model of determination of the level of employment protection legislation and of the level of redistribution. The model, that builds on Pagano and Volpin (2001, 2005), studies the political equilibria of an economy where three groups of agents live together : employed workers, unemployed and entrepreneurs. As a standard simplification, the model assumes that each party represents a distinct social group. None of the party can win a majority by itself. As a consequence, representative parties of each group form coalitions. The model shows that the redistributive effort of governments is positively correlated to the bargaining power of the "employed workers" group. In the present work, we are very close to this conception of the political game that explicitly takes into account the heterogeneity of voter preferences and sees the issue of the conflict as a bargaining game.

The notion of bargaining power can be interpreted with the help of comparative political economy, namely the contributions of Korpi and Palme (2003) and Crepaz (1998). These authors underline that the bargaining power of social groups depends on their capacity to access State decision-making bodies. This access is notably eased by the representation in elected organs (like the Parliament). Crepaz (1998) in particular highlights that an increase in the number of "veto points" within the political system raises the representativity of elected bodies and the number of parties present in Parliament. This allows to enlarge the sphere of influence of lower and middle classes. The bargaining power of those is therefore directly linked to the nature of the political supply. This implies that the link between the political demand and the social policy outcome is shaped by the structure of the political system. In the following, we empirically test this argument of an interaction between the political demand and the structure of the political supply.

3.2.2   Our Argument

Let us now briefly define the conceptual framework underlying our work and the main mechanisms we infer to evaluate the determinants of the welfare state.

First and as a start[2], we use the typical assumptions of the literature and suppose that (i) the political demand is rooted in the individual preferences of voters for economic policies[3] (rational voters); preferences are single-peaked; there is only a single dimension upon which voters rely their vote, which is in our case the redistributive policy. Under such conditions, the problem of how to aggregate heterogeneous individual preferences issued by Arrow (1951) find a solution in the Median Voter Theorem (Black, 1948; Downs, 1957). Hence, we simply count the number of individuals who have the same attitudes and do not take into account the composition of the demand.

Second, turning to the political supply, we suppose that (ii) it is organized in parties, who intend to win elections (Downs, 1957); parties know the distribution of preferences of voters. If follows that the strategy of parties to win elections is to go to the political space where the maximum demand stands.

Third, we suppose that (iii) there are binding elections, in the sense that parties first propose a policy platform (at the election stage) and then have a commitment to implement it once elected (at the policy formation stage)[4]. At the equilibrium, the policy outcome is the policy proposed by the party (or coalition of parties) who wins the elections and forms a government.

Political demand The consequence of (i) and (ii) is that the more numerous people who agree with redistribution (the higher the preferences for redistribution in the population), the more parties do propose redistribution. The consequence

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2. Some of the hypotheses below will be relaxed later on the study.

3. In an empirical viewpoint, we suppose that people do express their preferences in a sincere manner when asked to do so.

4. This binding effect can come from the fact that once elected, parties immediately think of their re-election.

of (iii) is that the higher the redistribution proposed by parties during the election stage, the bigger the welfare state implemented by the government. We thus conclude that the more numerous people who agree with redistribution, the bigger the welfare state.

Since it has been shown that there is an issue in aggregating individual preferences when they are heterogeneous (Arrow, 1951), we also look at the composition of the demand, in order to stay as close as possible to individual preferences. The distribution of preferences ranges from a strong positive feeling towards the policy at play to a strong negative attitude.

Theoretically, it is well known that redistribution is higher, the bigger the gap between the mean and the median income (Meltzer and Richard, 1981), the income being used as a proxy of preferences for redistribution. However, dispersion is a broader concept that may go beyond the mean to median gap and capture the intensity of the demand. One may think that the political outcome can change as preferences become more extreme, even for a given mean and median (and even if the mean equals the median). For instance, one could think that a more polarized demand induces parties to focus on the part of the electorate which is relatively more concentrated. Indeed, parties have no interest in trying to catch the electorate at the opposite location of the policy space. Such an effect would even be reinforced if one considered partisan preferences of voters and the presence of swing voters. We test this possibility of an impact of preferences dispersion on the policy outcome by measuring the coefficient of variation of preferences for redistribution (standard deviation relative to the mean).

Dispersion of preferences As the distribution of preferences for redistribution is systematically skewed to the right in our sample (the mean is higher than the median), a higher dispersion relative to the mean increases the relative concen-

tration *of individuals who agree with redistribution.* Hence, the effect of more demand dispersion has the same expected sign as the one induced by an increase in the demand. We argue that the demand effect is more prominent when the distribution of preferences in the population is dispersed, keeping the mean unchanged.

In parliamentary democracies, when parties are highly fractionalized, they have to form coalitions in order to gather the sufficient number of votes to govern. Hence, the more numerous political parties, the higher the occurrence of government coalitions. Following the literature on legislative bargaining, when it comes to policy formation we suppose that government coalitions do not behave the same as single-party governments (Baron and Ferejohn, 1989). This can come from several mechanisms : (iv) Single-party governments do internalize the cost of their policy, while coalition governments only see the interest of the social group who supports them. (v) Voters can still discriminate between different parties in a coalition government, whereas they cannot discriminate between different factions in a single-party government.

From (iv), it follows that coalition governments under-estimate the total cost of their policy, which is borne by the entire population (Bawn and Rosenbluth, 2006). This should especially be true for redistributive policies (common-pool problem). From (v), it follows an increased competition within coalition governments (Persson, Roland and Tabellini, 2007). Each party within the coalition has then an incentive to raise its effort to satisfy its electorate[5]. Consequently, the degree of fractionalization of political parties has a positive impact on the level of public expenditures.

Moreover, according to Crepaz (1998), a higher number of parties raises the representativity of elected bodies in multiparty legislatures, by raising the num-

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5. This mechanism actually reinforces the common-pool problem.

ber of collective veto points[6]. It follows that a higher fractionalization of the party system should better reflect the political demand of lower and middle classes, hence the generosity of the welfare state.

Design of the party system We expect the impact of the political demand to be conditioned by the party structure : The higher the party fractionalization, the stronger the impact of the demand on policy outcome. Furthermore, an increased competition implies different strategies according to the distribution of voter preferences, namely its dispersion. We therefore expect the dispersion of the demand to be conveyed into policy outcome.

3.3 Data

The study uses time-series cross-section data for 18 OECD countries[7] over the period 1980-2002 (Table 3.13). Data come from different sources, some microeconomic ones when we deal with the demand for redistribution (ISSP surveys over several years[8]) and other macroeconomic ones when it comes to the size of government (Scruggs, 2004). Political variables come from the widely-used databases of Armingeon *et al.* (2004) and Cusack and Engelhardt (2002).

In order to measure the economic policy that deals with income protection, we use a global index of generosity of the welfare state (Figure 3.1) calculated by Scruggs (2004)[9]. This index is a computation of net replacement rates of unemployment benefits, sickness benefits and pension insurance, the extent of program

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6. A similar argument is developed by Lijphart (1994) when describing parliamentary systems as consensus democracies.

7. Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, Norway, Portugal, Spain, Sweden, United Kingdom and USA.

8. We use data from the following ISSP modules "Social Inequality I, II and III" and "Role of Government I, II and III" that took place in years 1985, 1987, 1990, 1992, 1996 and 1999 (data available at www.gesis.org).

9. Scruggs' Overall Generosity Score is available on his website. See also Allan and Scruggs (2004).

coverage and duration -it is actually an extension of the decommodification index of Esping-Andersen (1990). The advantage of this index is that it gives a better idea of the willingness of the States to protect income than the ratio of social expenditures to GDP, since it encompasses not only generosity scores, but also measures of access conditions.

The political demand is here defined as being the share of people who agree with government redistribution (Figure 3.2). More precisely, it is the share of individuals, by year and by country, who agree or strongly agree while answering to the following ISSP survey question (Table 3.14) :

> "What is your opinion of the following statement : It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes"

Possible answers rank from 1 (strongly agree) to 5 (strongly disagree). The higher the measure of the demand, the higher the number of people who agree with redistribution[10].

The heterogeneity of the political demand is defined as being the coefficient of variation of preferences for redistribution (Figure 3.3) : It is a measure of dispersion of the within-country distribution of answers, based on the disaggregated data of micro surveys (Figures 3.4 to 3.9). We first calculate the standard deviation, for each survey year and each country, of answers to the question on redistribution ; we then divide the standard deviation by the country mean

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10. In order to have a demand variable that is continuous, and given that mean preferences by country are slowly changing over time, we interpolate the missing points between two surveys and suppose that the demand is invariant over the beginning period 1980-1985. Several robustness check have been done (using the mean answer of individuals with and without weights, using the median answer, dropping some time span), which do not affect the results.

answer, in order to have a scale-free measure of dispersion[11] :

$$CV = \frac{\sigma_{p_{i,t}}}{\mu_{p_{i,t}}}$$

with σ the standard deviation of the distribution of preferences $p_{i,t}$ and μ the mean preferences, by country i and year t. We are thus able to compare the dispersion of answers in countries with very different mean preferences[12]. The higher the CV, the more heterogeneous within-country preferences for redistribution.

Finally, the fractionalization of the party system is taken from Armingeon *et al.* (2004) and measured according to the formula of Rae (1967) :

$$F = 1 - \sum_{i=1}^{m} t_i^2$$

with t_i the share of votes for party i and m the number of parties (Figure 3.10). The higher the Rae's index, the more fractionalized the party system (the higher the number of parties).

As for controls, we include in our regressions the government's ideological position in the left-right spectrum (continuous variable) weighted by votes, calculated by Amable, Gatti and Schumacher (2006) using information from Cusack and Engelhardt (2002) database. This database builds itself on the *Comparative Manifesto Project* (Budge *et al.*, 2001). The standardized unemployment rate

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11. We could also take advantage of a measure of the asymmetry of the distribution of preferences by country, either proxied by the difference between the mean and the median divided by the standard deviation of the distribution (Pearson's skewness), or calculated with respect to the third moment about the mean (Fisher's skewness). However, since the distribution of preferences is systematically skewed to the right in our sample (mean > median), results are similar to those obtained using the mean level of preferences.

12. As a robustness check, we also computed the index of ordinal variation (I.O.V.) instead of the standard deviation of demand for redistribution. The I.O.V. is 0 when all values fall into one category, and 1 when extreme polarization is present. In our sample, it varies from 0.47 to 0.79. The correlation between the index of ordinal variation and the standard deviation of our demand variable is 98%. This comforts our assumption of continuous preferences. Hence, considering that the standard deviation is a more popular concept, and since results are not affected at all by the choice of the measure of dispersion, we only report regressions using the coefficient of variation based on standard deviation.

(OECD) is used as an additional macroeconomic control, along with a measure of productivity (GDP per employed worker based on US dollars 2002, OECD). Productivity enters the regression in natural logarithm and with a 1 period lag, in order to limit collinearity with the unemployment rate[13].

Our time-series cross-section data set contains 18 OECD countries over 23 years. However, only 15 countries participated to the ISSP modules we are interested in to construct our demand variable. Indeed, Belgium and Finland did not participate, and data for Denmark are available only for the last wave (year 1999), on a non standardized separate data set. We did not include it in the analysis. Nor did we include Netherlands and Portugal, since the ISSP data were available only for the year 1999, implying a time-invariant demand for redistribution over the entire period[14]. Finally, when dealing with the generosity score of the welfare state constructed by Scruggs (2004), data for Portugal and Spain are not available. We eventually run the regressions for 12 countries over the time span 1980-2002 (Table 3.13).

3.4   Estimation Strategy and Basic Results

As a baseline model, we first estimate a naive pooled OLS model, which does not take into account the panel structure of our data. OLS assumes spherical errors (homoskedasticity and independence of the errors), a strong assumption which, if not hold, keeps OLS estimates unbiased but renders them inefficient. Hence, we systematically compute *panel corrected standard errors* (PCSE) that takes into account panel-level heteroskedasticity and contemporaneous spatial correlation, following Beck and Katz (1995)[15].

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13. We also checked for the inclusion of a measure of inflation and budget deficit, but these never turned out to be significant, so we do not include them in the final regressions.

14. As a robustness check, we included Netherlands in the sample. Results are left unchanged.

15. Importantly, the authors show the superiority of PCSE estimates over GLS estimates when T is not significantly higher than N. Indeed, when T does not tend to infinity, as is the case in our dataset, the Park method (GLS estimate) yields standard errors that are too

3.4.1 Model Specification

Our baseline model is the following :

$$y_{it} = \alpha + \beta_1 f_{it} + \beta_2 p_{it} + \beta_{12} f_{it} p_{it} + \epsilon_{it} \qquad (3.1)$$

where ϵ_{it} is the i.i.d. error term

y_{it} being the overall generosity score of the welfare state, which is defined by country i and by year t, f_{it} being the level of party fractionalization measured by the Rae formula, p_{it} being either the level or the coefficient of variation of preferences for redistribution, and $f_{it}p_{it}$ being the interaction between party fractionalization and preferences (level or dispersion). In other words, we test a reduced form of a relationship with a complementarity effect. Since we run an OLS estimate, α is a single intercept that reflects the expected value of the dependent variable when all of the independent variables are zero.

In a second specification of our model, we add some of the controls usually found in the literature :

$$y_{it} = \alpha + \beta_1 f_{it} + \beta_2 p_{it} + \beta_{12} f_{it} p_{it} + \gamma_1 u_{it} + \gamma_2 w_{it-1} + \gamma_3 g_{it} + \delta_t + \epsilon_{it} \qquad (3.2)$$

u_{it} being the unemployment rate, w_{it-1} being the log of labor productivity lagged once (in order to limit collinearity with the unemployment rate) and g_{it} being a measure of the partisanship of the government (continuous left-right

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small -up to 600 percent- and therefore overconfident results. By contrast, so long as $T > 15$ (which is our case, since $T = 23$), Monte Carlo experiments show that PCSEs are considerably better than OLS standard errors when there is panel heteroskedasticity and contemporaneous correlation of the errors.

index)[16]. Moreover, while adding time dummies δ_t, we control for additional (macroeconomic) shocks that are common to all countries[17].

3.4.2   Interaction Term and Marginal Effect

Since we consider an interaction term between fractionalization and preferences ($f_{it}p_{it}$) in equations (3.1) and (3.2), the assessment concerning the expected *overall* effect of p_{it} needs the computation of its marginal effect *conditional* on specific values of f_{it} :

$$\frac{\partial E(y_{it}/\mathbf{x})}{\partial p_{it}} = \widehat{\beta}_2 + \widehat{\beta}_{12}f_{it} \tag{3.3}$$

given that $\mathbf{x}$ is the vector of explanatory variables.

Hence, it is worth to notice that a positive and significant β_2 in equations (3.1) and (3.2) means nothing but that preferences for redistribution increase the generosity of the State, only for those countries where the degree of party fractionalization is zero ($f_{it} = 0$) (Mullahy, 1999 ; Braumeoller, 2004). That is for the unrealistic case of a single-party legislature[18]. Similarly, in order to assess the significance of the effect of p_{it} on y_{it} conditional on f_{it} values, the standard error of the sum ($\beta_2 + \beta_{12}f_{it}$) will be computed in the following way :

$$se = \sqrt{var(\widehat{\beta}_2) + f_{it}^2 var(\widehat{\beta}_{12}) + 2f_{it}cov(\widehat{\beta}_2\widehat{\beta}_{12})} \tag{3.4}$$

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16. It is worth to notice that we do not include a measure of age dependency (e.g. share of the population below 15 or over 65), since this would be strongly correlated with our demand variable, which is precisely the reason why it is usually included in the literature given that scholars try to *proxy* the demand (Tabellini, 2000).

17. We also checked for the existence of non linear relationships between variables, as it would make sense according to our descriptive statistics (Figures 3.11, 3.12 and 3.13). To do this, we applied a logarithmic transformation to our dependent and continuous independent variables in equation (3.1). Results are globally the same as those obtained with a linear approximation, so we do not report them here.

18. This case, actually, could be achieved through a dictatorship, but since we only include democratic countries in our dataset zero party fractionalization never occurs.

Keeping in mind that the coefficient and standard errors that appear in the output of the regressions are partial ones -and not general ones like in an additive model-, it is not surprising that statistically insignificant (and negative) coefficients might combine to produce statistically significant (and positive) overall effects (Friedrich, 1982). Hence in the following, we systematically report marginal effects of preferences for redistribution at different sample values of party fractionalization (minimum, mean minus one standard deviation, mean, mean plus one standard deviation, maximum). We also compute the marginal effects of party fractionalization at different sample values of preferences.

3.4.3   Basic Results

Tables 3.1 to 3.3 show the result of the baseline regressions, using the level of the demand for redistribution as our independent variable of interest. In this naive OLS estimates, we add variables step by step (Table 3.1) : first, we test a linear model without the complementarity effect (column [1]), then we add the interaction term (column [2]), macroeconomic and political controls (column [3]) and finally time dummies (column [4]).

We are especially interested in the marginal effect of the demand for redistribution on the welfare state generosity (Table 3.2). When significant, this marginal effect is always positive (column [1] Table 3.1, columns [2], [3] and [4] Table 3.2) and increases with the level of party fractionalization when controls are included (columns [3] and [4] Table 3.2). As for the overall impact of party fractionalization, we also notice a positive impact on welfare state generosity (column [1] Table 3.1, columns [2], [3] and [4] Table 3.3) : The more fractionalized the party system, the higher the welfare state generosity. This effect is enhanced by the level of the demand, as soon as standard controls are included in the regression (columns [3] and [4] Table 3.3).

We conclude from this first set of basic results that there is a positive relationship between the level of the demand for redistribution and the generosity of governments, and between the degree of party fractionalization and the generosity of governments. Importantly, demand for redistribution and party fractionalization are complementary : An increase in the former enhances the positive impact of the latter on welfare state generosity, and vice versa.

Turning to our second set of regressions, we aim to measure the impact of the dispersion of preferences for redistribution on the welfare state generosity (Tables 3.7 to 3.9). It comes out that -contrary to our expectations- the heterogeneity of the demand has a negative impact on welfare state generosity (Table 3.8). Moreover, the higher the fractionalization of the party system, the larger the negative impact of preferences dispersion. However, looking at party fractionalization, the variable appears to maintain its strong positive impact on welfare state generosity (Table 3.9). It is worth to notice here that the above results are produced by pooled OLS, which do not take into account the particular structure of our cross-section time-series dataset, hence lead to potentially biased estimates.

3.5   Criticisms and Further Results

There are a number of problems coming with the use of cross-section time-series data. Below, we discuss some of them and the solutions we adopted to deal with them. Specifically, we explain our choice of including fixed effects into the model, hence consciously restricting our insight to intra-country variation (Section 3.5.1). Then, we deal with the issue of correctly estimating the impact of time-invariant variables while keeping fixed effects into the model (Section 3.5.2). We further deal with dynamic issues and measure the speed of adjustment of the welfare state (Section 3.5.3).

3.5.1 Introducing Fixed Effects

Country fixed effects control for characteristics that are specific to one country and do not vary across time. Such a specification takes advantage of the time-series cross-section nature of our dataset.

3.5.1.1 Model Specification with Fixed Effects

The inclusion of fixed effects allows for unobserved heterogeneity. Instead of a single intercept α, each cross-sectional unit is assigned its own intercept η_i. Since our estimated fixed effects are always large and clearly significant, not including them in the model would result in a presumably serious omitted variable bias (Green, Kim and Yoon, 2001). However, it is worth to notice that while including fixed effects we limit our interest to the causes of *intra-country* variation of welfare state generosity.

Hence, equations (3.1) and (3.2) become :

$$y_{it} = \beta_1 f_{it} + \beta_2 p_{it} + \beta_{12} f_{it} p_{it} + \delta_t + \eta_i + \mu_{it} \tag{3.5}$$

$$y_{it} = \beta_1 f_{it} + \beta_2 p_{it} + \beta_{12} f_{it} p_{it} + \gamma_1 u_{it} + \gamma_2 w_{it-1} + \gamma_3 g_{it} + \delta_t + \eta_i + \mu_{it} \tag{3.6}$$

where η_i represents the country unit effect and μ_{it} is the i.i.d. error term.

3.5.1.2 Heteroskedasticity and Spatial Correlation

There are a number of statistical properties to verify while using the fixed effects model.

First, cross-section correlation (spatial correlation) is a problem for fixed effect estimation. Then, after running a standard fixed effect model, we look at

the Breusch-Pagan statistic that tests for cross-section independence in the residuals[19]. Indeed, a fixed effect model assumes the independence of the errors. A likely deviation from independent errors in the context of pooled cross-section time-series data is the presence of contemporaneous correlations across cross-sectional units (here across countries). The null hypothesis of the Breusch-Pagan test is that of cross-sectional independence[20]. The test rejects the null hypothesis[21], hence there is spatial correlation in our data.

Second, a fixed effect model assumes homoskedasticity. The most likely deviation from homoskedastic errors in the context of pooled cross-section time-series data like ours is the presence of error variances specific to the cross-sectional unit. Therefore, we calculate a modified Wald statistic for groupwise heteroskedasticity in the residuals of a fixed effect regression model[22]. The null hypothesis of homoskedasticity is strongly rejected[23].

Thus, the above tests suggest that we might not use the standard fixed effect procedure without taking into account spatial correlation and panel heteroskedasticity. As a consequence, we run least squares dummy variables (LSDV) regressions (i.e. the unobserved effect is brought explicitly into the model) that allow us to compute panel corrected standard errors (PCSE).

3.5.1.3   Results of Fixed Effects Regressions

Results concerning the impact of the demand for redistribution in level on the welfare state generosity are shown in Tables 3.4 to 3.6, columns [5], [6] and [7]. As

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19. We use the *xttest2* Stata command, following Greene (2000).

20. In the context of a slightly unbalanced panel like ours, the observations used to calculate the test statistic are those available for all cross-sectional units. Here, the number of available observations reported is 16.

21. Breusch-Pagan LM test of independence : $\chi^2(66) = 158.526$, $p < 0.01$ for the model with the level of demand, and $\chi^2(66) = 145.016$, $p < 0.01$ for the model with the dispersion of preferences.

22. We use the *xttest3* Stata command, following Greene (2000).

23. Modified Wald test for groupwise heteroskedasticity : $\chi^2(12) = 457.44$, $p < 0.01$ for the model with the level of demand, and $\chi^2(12) = 1092.01$, $p < 0.01$ for the model with dispersion of preferences.

a start, we notice that the R-squared are highly raised by the inclusion of fixed effects : Our fixed effects model is able to explain more than 95% of the sample variation. Moreover, fixed effects are strongly significant[24], which means that not including them into the regression leads to an important omitted variable bias (Green, Kim and Yoon, 2001).

Although it is not possible to theoretically assess the direction of the bias, we clearly see the empirical difference between the coefficients of Table 3.1 and those of Table 3.4 (the comparison is especially meaningful between columns [4] Table 3.1 and [7] Table 3.4 that include the full set of controls). The same comments apply to our regressions measuring the impact of the dispersion of preferences on the welfare state generosity (Tables 3.10 to 3.12, columns [14] to [16]).

Looking at control variables first, the impact of unemployment on welfare state generosity remains negative and highly significant, but is half-size. The coefficient of productivity becomes negative and significant, and increases in size. Surprisingly, the coefficient of government partisanship turns positive and is no more significant : This means that the position of the government on the political (left-right) spectrum has no impact on the within-country variation of welfare state generosity. Taking the result seriously, it means that once we control for the preferences (of voters) for redistribution and the degree of party fractionalization (hence, the occurrence of coalitions), government partisanship does not play any role in the size of government. This runs counter to other studies on partisanship that show a strong impact of the ideological position of governments on public expenditures (Huber, Ragin and Stephens, 1993).

Looking at our key variables, two important results show up :

(i) The impact of the demand for redistribution, which is a slowly changing variable, is entirely captured by country fixed effects : The coefficients of columns [6] and [7] Table 3.5 cannot be distinguished from 0 -although

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24. Fixed effects coefficients are not shown here for space reason.

we still capture the complementarity effect between the demand and party fractionalization[25].

(ii) The impact of the dispersion of preferences for redistribution, which is also a slowly changing variable, resists the introduction of country fixed effects : The coefficients of columns [15] and [16] Table 3.11 are positive and significant[26]. Moreover, once controls are included in the regression, we capture the complementarity effect between dispersion of preferences and party fractionalization.

(iii) The effect of party fractionalization on welfare state generosity is strongly decreased by the inclusion of fixed effects (columns [6] and [7] Table 3.6 and columns [15] and [16] Table 3.12) : Except when the demand for redistribution (in level or in dispersion) is at its maximum value, we merely find an impact of party fractionalization (the effect vanishes when controls are included).

3.5.2   Coping with Time-invariant Variables and Fixed Effects

Our measure of preferences (p_{it}), be it in level or in dispersion, is considered as a rarely changing variable. This means that the demand for redistribution is almost time-invariant or at least cross-sectionally dominated (Figure 3.2). Indeed, as shown in the Appendix (Table 3.13), the *between* variance is more than 3 times higher than the *within* variance. Hence, we are confronted to the well-known problem of estimating a fixed effects model with (almost) time-invariant

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25. Interestingly though, the impact of the demand for redistribution on welfare state generosity is negative and significant when party fractionalization is at very low levels. However, we have no explanation for this, except that running a fixed effects regression with slowly changing variable leads to inefficient estimates (Beck and Katz, 1995 ; Plümper and Troeger, 2007).

26. Importantly, here we measure the *within-country* impact of dispersion, whereas previous OLS regressions measured the *pooled* impact of dispersion on welfare state generosity. However, the omitted variable bias appears to be strong in OLS regressions.

variables. The problem comes from the fact that all the effect of the time-invariant variables is likely to be captured by the unit fixed effects[27]. To deal with this issue, we make use of the estimator proposed by Plümper and Troeger (2007) : A three-stage panel fixed effects vector decomposition model (FEVD procedure).

3.5.2.1 Fixed Effects Vector Decomposition Procedure

The FEVD process allows for the inclusion of time-invariant variables and efficiently estimates almost time-invariant explanatory variables within a panel fixed effects framework (Plümper and Troeger, 2007). More precisely :

(i) The first stage estimates a pure fixed effects model in order to obtain an estimate of the unit effects (here our country effects η_i).

(ii) The second stage decomposes the fixed effects vector into a part explained by the time-invariant or almost time-invariant variables (here our demand for redistribution p_{it}) and an unexplainable part -the error term of the second stage.

(iii) Finally, the third stage re-estimates the original model by pooled OLS, including the error term of the second stage. This third step assures to control for collinearity between time-varying and invariant right-hand side variables, and adjusts the degrees of freedom.

To complement the estimation process, we apply panel corrected standard errors (PCSE) to the third stage pooled OLS.

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27. Actually, the problem of almost time-invariant variables with fixed effects is slightly different from the issue raised by time-invariant variables with fixed effects. As explained by Plümper and Troeger (p.16, 2007), "When the within variance is small, the FE model does not only compute large standard errors, but in addition the sampling variance gets large and therefore the reliability of point predictions is low and the probability that the estimated coefficient deviates largely from the true coefficient increases."

3.5.2.2   Results of FEVD Estimates

Results for the level of the demand are shown in Tables 3.4 to 3.6, column [8]. We notice that the main impact of applying the FEVD procedure is to change the coefficient of the almost time-invariant variable, while letting the other coefficients unchanged[28]. The marginal effects of the demand for redistribution calculated in Table 3.5 for different values of party fractionalization are positive and highly significant. They increase with the fractionalization of the party system. Hence, the demand for redistribution is shown to have a strong impact on welfare state generosity.

Results for the dispersion of preferences are shown in Tables 3.10 to 3.12, column [17]. The marginal effects of the dispersion of preferences for redistribution calculated in Table 3.11 for different values of party fractionalization are positive and highly significant. They increase with the fractionalization of the party system. We notice that the results obtained by FEVD estimates (column [17]) are very close to the one obtained by FE estimates (column [16]).

However, due to the fact that almost time-invariant variables are estimated by quasi-pooled OLS in the second stage, their coefficients are possibly biased, depending on their correlation with the unobserved unit effects (Plümper and Troeger, 2004). The bias is positive (negative) if the rarely changing variables covary positively (negatively) with the unit fixed effects. The importance of the bias depends on the size of the correlation and on the size of the between-to-within ratio of the rarely changing variable : The smaller the actual correlation and the larger this ratio, the smaller the actual bias. Plümper and Troeger (2007) run Monte-Carlo estimates to identify the conditions under which the FEVD procedure is preferable to the FE estimates. They show that if there is no correlation

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28. Indeed, the coefficients of the time-varying variables are still estimated by a standard fixed effects model, as in column [7].

between the rarely changing variable and the unit country effect, the between-to-within ratio can be as small as 0.2; it the correlation is 0.3, the ratio should be larger than 1.7; at a correlation of 0.5, the threshold increases to about 2.8.

Running the correlation matrix between our variables of interest and the estimated unit effects (after the fixed effects model of the first stage), we find correlations of 0.32 (demand for redistribution) and 0.04 (dispersion of preferences). We know from Table 3.13 that the between-to-within ratio of our slowly changing variables is 3.46 if we consider the demand for redistribution (i.e. two times the recommended threshold of 1.7), and as big as 2.90 if we consider the dispersion of preferences for redistribution. Hence, our FEVD estimates are undoubtedly consistent and we can be confident in our results.

3.5.3 Dynamic Issues

Following our descriptive statistics, we suspect some path dependency regarding the overall level of generosity of the welfare state (Figure 3.1). Moreover, the panel corrected standard errors that we calculate in our regressions assume that the disturbances are heteroskedastic and contemporaneously correlated across panels, but that there is no serial autocorrelation. Therefore, for our estimates to be precise, we must take care of a potential serial autocorrelation.

3.5.3.1 Dynamic Model Specification

We test for serial autocorrelation using the Wooldridge test for autocorrelation in panel data[29]. The test strongly rejects the null hypothesis of no first-order autocorrelation[30]. Hence, we have two options : (i) Treating the model as static and purging any temporal correlation or (ii) Explicitly using the dynamics.

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29. We use the *xtserial* Stata command, following Wooldridge (2002) and Drukker (2003).

30. Wooldridge test for autocorrelation in panel data : $F(1, 11) = 28.257$, $p < 0.01$ for the model with the level of demand, and $F(1, 11) = 25.025$, $p < 0.01$ for the model with dispersion of preferences.

(i) If we treat the model as static and the temporal correlation as a problem, we assume that the latter has no substantive interest. Then, the point is to estimate ρ and to use it to correct the errors. This is the AR(1) error model :

$$y_{it} = \beta_1 f_{it} + \beta_2 p_{it} + \beta_{12} f_{it} p_{it} + \delta_t + \eta_i + \mu_{it} \tag{3.7}$$

where $\mu_{it} = \rho \mu_{it-1} + \nu_{it}$,

or equivalently $\mu_{it} = \rho y_{it-1} - \Sigma \beta_k \rho x_{kit-1} + \nu_{it}$

(ii) If we are interested in a dynamic specification of the model, we can explicitly include the lagged dependent variable (LDV) into the model :

$$y_{it} = \rho y_{it-1} + \beta_1 f_{it} + \beta_2 p_{it} + \beta_{12} f_{it} p_{it} + \delta_t + \eta_i + \mu_{it} \tag{3.8}$$

With such a specification, we should get rid of the error autocorrelation, since the lagged dependent variable includes lagged error term (Beck and Katz, 2004). Contrary to the AR(1) specification that allows a quick adjustment of the dependent variable, here we explicitly measure long-term effects or slow adjustment of the dependent variable to a change in the independent variables.

We have no *a priori* expectations on the speed of adjustment of our dependent variable. However, the *fixed effect vector decomposition* estimator can only take into account the AR(1) error process[31]. Not knowing the resulting bias in the LDV specification, we therefore choose to run an AR(1) model.

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31. Indeed, no correction is applied to the error of the second stage while running an LDV model, though this second-stage error is to be used in the third stage OLS estimate. By opposition, the FEVD procedure has been designed to apply the AR(1) Prais-Winsten transformation in the first and third stages.

3.5.3.2 Dynamics with Fixed Effects : the Nickell Bias

The inclusion of a lagged dependent variable with fixed effects, be it implicit or explicit, raises new issues. Indeed, it induces a correlation between $\hat{y}$, the lagged dependent variable in terms of deviation from its mean ($\hat{y}_{it-1} = y_{it-1} - \frac{1}{T}\sum y_{it-1}$) and $\hat{\mu}$, the error term in terms of deviation from its mean ($\hat{\mu}_{it-1} = \mu_{it-1} - \frac{1}{T}\sum \mu_{it-1}$). Hence it leads to biased estimates (Nickell, 1981) : There is a downward bias while estimating ρ, and an upward bias in the estimations of β.

To deal with this issue, many alternative estimators have been proposed in the econometric literature. However, all of them are specifically designed for panel data ($T < 10$ and N very large), not for TSCS data ($T > 20$ and $N < 30$)[32].

Beck and Katz (2004) produce Monte Carlo experiments for TSCS alike data. Adding a correlation between the unit effects and the exogenous variables, they aim to compare the performance of the LSDV estimator including a lagged dependent variable, with the Anderson-Hsiao estimator and the Kiviet correction, as both T and ρ vary (the other parameters are fixed at a single value, with $N = 20$). Results are the following. The authors show clear evidence that there is a downward bias using the LSDV estimator, which dramatically decreases with T and slightly increases with ρ. Moreover, the authors give strong advice not to use the Anderson-Hsiao estimator for TSCS data, the cost of using it being very high in terms of root-mean square error (namely, the estimation variability is very high). Finally, they advise to use the LSDV estimator preferably to the Kiviet correction as long as $T > 20$, which is our case (Table 3.13).

Consequently, when testing the dynamic specification of the model, we stay with our FEVD estimator, which has the advantage of being able to estimate the coefficient of the slowly-changing variable of interest, namely the political

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32. For instance, the instrumental variables procedure suggested by Anderson and Hsiao (1982) might be at the cost of raising dramatically the mean squared error (Beck and Katz, 2004) ; GMM (Arellano and Bond, 1991) only works if N is very large ; Kiviet (1995) approach assumes the data are balanced, among other important issues that do not fit our data.

demand. We apply the AR(1) error model defined in equation (3.7) and assess the speed of adjustment of the generosity of the welfare state.

3.5.3.3 Unit Roots

Before to turn to the results, a last check should be done concerning the presence of unit roots in the data (non-stationarity). Indeed, if our dependent variable is not stationary, the introduction of a lagged dependent variable to model dynamics will lead to spurious regressions. We thus run a battery of unit roots tests.

Following Maddala and Wu (1999), we run a Fisher test, which assumes that all series are non-stationary under the null hypothesis against the alternative that at least one series in the panel is stationary. Alternative tests are those proposed by Levin, Lin and Chu (2002) (hereafter LL) and Im, Pesaran and Shin (2003) (hereafter IPS). Under the null hypothesis that all series are non-stationary, the test proposed by Levin, Lin and Chu (2002) supposes that the autoregressive coefficient (ρ) is the same for all units. Hence, the LL test is based on pooled regression and only fits balanced panel. Under the same null hypothesis, the test proposed by Im, Pesaran and Shin (2003) improves the LL test by relaxing the assumption of a common ρ : the IPS test runs a separate unit test for each of the units and computes the mean of the t-statistic of each independent Augmented Dickey-Fuller test. IPS fits only balanced data with the same number of observations per unit. Finally, we can see the Fisher test developed by Maddala and Wu (1999) as an improvement of the IPS test : it also runs individual tests but then combines their significance with a Fisher test. Hence, it does not require a balanced data. The Fisher test of Maddala and Wu (1999) and the IPS test of Im, Pesaran and Shin (2003) are directly comparable.

Since our data is only slightly unbalanced, we compute both statistics[33]. Results are in Table 3.15.

Moreover, after estimating the dynamic version of the model, we systematically check whether the residuals appear stationary. To do that, we run an autoregression of the residuals on their lags and check if the coefficient of the lagged residuals is close to one. Finally, we also run a series of autoregression for all our variables, thus examining the size of the coefficient of the lagged variables (Beck, 2006). We conclude that there is no unit root in our panel.

3.5.3.4 Results of Dynamic Regressions

Tables 3.4 to 3.6 column [9] give the results of the estimates. We notice the non trivial value of ρ ($\rho = 0.82$), which confirms the existence of a convergence mechanism of the welfare state of each country towards its long term value $\left(\frac{\eta_i}{1-\rho}\right)$ (Bond, 2002; Beck and Katz, 2004). In other words, the initial deviation of the welfare state from its stationary value is very low (Blundell and Bond, 1998). Indeed, the past level of the welfare state helps to explain the current level : Radical reforms of the welfare state -like going, within a country, from the level of the US to the level of Sweden- are not common.

However, the short term effect of the demand is still sizable. Moreover, we continue to capture the complementarity between the political demand and the fractionalization of parties (Table 3.5) : The higher the fractionalization of the party system, the better the demand for redistribution is conveyed to the policy implemented by the government. Importantly, the marginal effects of the demand are very comparable to the ones obtained in the static specifications of the model discussed above. Hence, this reinforces our results.

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33. We use the *xtfisher* Stata command to compute the Fisher test, and the *ipshin* Stata command to compute the IPS test.

3.6   What Have We Learned ?

Since we are interested in the joint effect of (the fragmentation of) the demand with the fractionalization of the party system, we systematically introduced an interaction term into our regressions. Conducting the analysis, we seek to know to what extent the level of generosity of the welfare state depends on the level (or the dispersion) of the expressed demand for redistribution and on the degree of atomicity of the political supply. We argue that the impact of the demand should be positive and increase with the number of parties.

3.6.1   What Drives the Generosity of the Welfare State ?

In Tables 3.1 to 3.6 that test the argument according to which the level of the demand for redistribution determines the generosity of the welfare state, we find indeed that the marginal effect of the demand, always very significant, is positive and increases with the degree of fractionalization of political parties (Table 3.5). If taken in isolation, the impact of the fractionalization of the supply on the generosity of the State is positive, but becomes significant only when the demand for redistribution is above the mean (Table 3.6). These results have two important implications :

(i) The political demand is indeed conveyed to the political arena, since it has a direct impact on the level of generosity of the State, even when the fractionalization of the political supply is weak (in other words, democracy works well). In addition, the political demand and the fractionalization of parties are complementary.

(ii) The fractionalization of political parties has a positive impact on the welfare state only to the extent that it exists a relatively high demand for redistribution. Hence, contrary to what has been found in the literature (Milesi-Ferretti, Perotti and Rostagno, 2002 ; Bawn and Rosenbluth, 2006),

we do not find strong evidence of a direct impact of the fractionalization of parties on the size of government[34].

3.6.2 How is the Heterogeneity of Preferences Conveyed by Party Fractionalization ?

We now turn to our second set of regressions, which assess the impact of the dispersion of preferences. Here, we test the idea that the fragmentation of the political demand, measured by its coefficient of variation, has a positive impact on the generosity of the welfare state. This impact is assumed to increase with the fractionalization of the party system. Tables 3.7 to 3.12 give the results of regressions. The marginal effect of the dispersion of preferences is indeed positive, increasing with Rae's index (party fractionalization), and highly significant (Table 3.11) : The generosity of the government is higher when the demand is spread out, and the fractionalization of parties helps to convey the dispersion of this demand[35]. We add two important comments on the results :

(i) Results are robust to the choice of the estimation process (fixed effect vector decomposition or OLS with country dummies and panel corrected standard errors). Even if the unit fixed effect partly captures the impact of the demand when running an OLS with country dummies, the coefficient of preferences dispersion remains positive and significant.

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34. Milesi-Ferretti, Perotti and Rostagno (2002) use data for 20 OECD countries over the period 1960-1995. They look at the impact of a macro shock at different level of proportionality of the political system on the spending/GDP ratio and on the transfer/GDP ratio (OECD data). They conclude that the higher the proportionality of the system, the higher the impact of a macro shock on the public spending. Bawn and Rosenbluth (2006) use data for 17 Western European countries over the period 1970-1998. They look at the impact of the number of parties in government (extracted from the database of Warwick, 1994) on the overall government expenditure as a fraction of GDP in a given year (OECD data). They find a positive impact of the number of parties in government on the overall government expenditure.

35. We notice in addition that the size of the overall effect of party fractionalization is very close to the one of the previous set of regressions.

(ii) The impact of the dispersion of preferences on the generosity of the welfare state increases very rapidly with the degree of the fractionalization of parties : It more than doubles in the dynamic specification, when the fractionalization varies from its minimum value to its maximum value.

Hence, the parallelism between heterogeneity of preferences and abundance of the political supply seems relevant.

Some comments on the control variables. First, we notice that the coefficient of the ideological position of governments never turns out to be significant, once country fixed effects are included. This would suggest that governments directly encompass the demand within their policy decision, and have themselves no preferred policy. But we could also assume that the partisan position of governments, due to a feedback effect, is already captured by the term which expresses individual preferences (Gerber and Jackson, 1993). Concerning the macroeconomic controls, we notice that the unemployment rate acts negatively on the index of generosity of the welfare state. We interpret this as a downward adjustment of the replacement rates to an increase in the number of beneficiaries (see Amable, Gatti and Schumacher, 2006 for evidence on this point).

3.6.3 How Large is the Effect ?

In order to interpret these results, it is important to get some sense of the magnitude of the effect.

How Large is the Impact of the Demand ? Other things being equal, raising by 10% the number of people who agree with redistribution implies : An increase of 3.2% of the welfare state generosity score, when the number of political parties (Rae's index) is at its minimum (2 parties) ; An increase of 5.3% when the number of political parties reaches its maximum value (10 parties). Taking dynamics

into account, these figures become 4% and 5%, respectively. Hence, the political demand has a non trivial impact on public policy outcome.

How Large is the Effect of the Dispersion of Preferences ? Other things being equal, raising by 10% the coefficient of variation of preferences for redistribution implies : An increase of 3.7% of the welfare state generosity score, when the number of political parties (Rae's index) is at its minimum (2 parties) ; An increase of 5.4% when the number of political parties reaches its maximum value (10 parties). Taking dynamics into account, these figures become 2.9% and 6.7%, respectively. We conclude that within-country heterogeneity of the demand is highly conveyed by party fractionalization.

Finally, an increased competition between parties benefits the electorate : The demand of the electorate is better reflected in the policy formation when parties are numerous.

3.7   Conclusion

This chapter proposes an empirical analysis of the interaction between the demand for redistribution expressed by individuals and the structure of the political supply. Hence, conflictual demands of heterogeneous agents can find a way to be expressed in public policies, according to the design of the political mediation. The latter partly depends on political institutions, namely election rules and the structure of the political supply. This implies that the matching of the supply to the political demand determines the nature of the welfare state, specifically the level of redistribution. We thus expect the structure of the party system to impact the generosity of the State, while allowing or not heterogeneous demands for redistribution to be taken into account. In particular, a more fractionalized

party system will raise the representativity of elected bodies and enhance the reflection of political demand that comes from lower and middle class. Consequently, the higher the fractionalization of the party system, the better reflected the demand for redistribution into social policy outcomes. As far as we know, the empirical literature on the subject only tests the influence of the supply on the nature of public expenditures (Persson and Tabellini, 1999). No test of an interaction between a feature of the political supply and the political demand has been done before.

The originality of the present work is then (i) to use a direct measure of individual voter preferences, (ii) to analyze the composition effect of the demand on policy outcome, and (iii) to take into account the interaction between the demand for redistribution and the structure of the political supply. This is done to explain the level of generosity of the welfare state and its variation within countries. Econometric regressions use time-series cross-section data on a sample of 18 OECD countries spanned over the period 1980-2002. The data originates from both microeconomic databases (preferences for redistribution) and macroeconomic databases (policy outcome, party fractionalization).

Results clearly show that the demand for redistribution, measured in level and in dispersion, leads to a more generous welfare state, the more the party system is fractionalized (the higher the number of parties in Parliament). This is robust to a large variety of econometric specifications.

Yet, as Shepsle and Weingast (p.50, 1984) put it : "Each of the above conclusions depends upon a rather special sort of preference revelation. Individual agents are assumed to be *sincere* revealers of their preferences so that the majority preference relation (built up from sincerely revealed individual preferences) may be taken as descriptive of the voting behavior of majorities". This is a strong, though necessary, assumption that we have done in this study.

Importantly, concerning the aggregation of preferences, we made a simplifying assumption by giving the same weight to each individual preference (each person has one vote). This was necessary to generate conclusions at the macro level. However, assuming an alternative microfoundations for our model, we could extend our work. For instance, we could take into account the partisan positions at the individual level. Indeed, less ideological voters attract more attention from the parties, since they are considered as "swing voters" (Lindbeck and Weibull, 1987). We could then find a way to count the number of swing voters in a group[36]. An extension would thus be (i) to gather preferences according to the social status or the occupation of individuals, thus trying to form socio-political groups and (ii) to deduce the political weight of each group *ex post*, according to the dispersion of within-group preferences.

Finally, as in most empirical works with time-series cross-section data investigating the *within* country variation of variables, it would certainly be interesting to open the *black box* of country fixed effect. A way to do it would be to enter more information on the institutional features of countries within the regression.

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36. Another way of infering different weights to people would be to identify lobbying groups. Yet, this seems more difficult to do, according to our micro data.

Annexe 3.A   Demand for Redistribution

3.A.1   Basic Model of Welfare State Generosity

Tab. 3.1: Welfare state generosity (OLS)

	[1]	[2]	[3]	[4]
demand for redist.	0.067***	0.434***	-0.277*	-0.106
	(0.020)	(0.081)	(0.157)	(0.201)
party fract.	0.320***	0.615***	-0.058	0.099
	(0.032)	(0.081)	(0.128)	(0.181)
dem. redist. x fract.		-0.006***	0.005**	0.003
		(0.001)	(0.002)	(0.003)
unempl. rate			-0.664***	-0.719***
			(0.083)	(0.082)
productivity (-1)			-3.223*	1.372
			(1.938)	(3.082)
gov. partisanship			-0.172***	-0.172***
			(0.031)	(0.034)
Estimator	ols	ols	ols	ols
Year dummies	no	no	no	yes
Country dummies	no	no	no	no
Number of Obs	276	276	245	245
R-Squared	0.174	0.181	0.391	0.418

Note : Panel corrected standard errors in parentheses.

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

TAB. 3.2: Marginal effect of the demand for redistribution (OLS)

party fract.	[**2**]	[**3**]	[**4**]
min	0.158***	-0.005	0.034
	(0.022)	(0.043)	(0.053)
mean_less_1sd	0.088***	0.062***	0.068***
	(0.018)	(0.023)	(0.025)
mean	0.042*	0.107***	0.092***
	(0.023)	(0.024)	(0.027)
mean_plus_1sd	-0.004	0.152***	0.115**
	(0.031)	(0.037)	(0.046)
max	-0.045	0.194***	0.137**
	(0.039)	(0.053)	(0.068)

Note : Standard errors in parentheses.

$^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

TAB. 3.3: Marginal effect of party fractionalization (OLS)

demand redist.	[**2**]	[**3**]	[**4**]
min	0.452***	0.101	0.181*
	(0.048)	(0.067)	(0.098)
mean_less_1sd	0.366***	0.183***	0.223***
	(0.035)	(0.045)	(0.063)
mean	0.302***	0.247***	0.257***
	(0.031)	(0.044)	(0.050)
mean_plus_1sd	0.237***	0.311***	0.290***
	(0.034)	(0.057)	(0.060)
max	0.164***	0.385***	0.328***
	(0.044)	(0.082)	(0.090)

Note : Standard errors in parentheses.

$^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

3.A.2   Fixed Effects Model of Welfare State Generosity

TAB. 3.4: Welfare state generosity (FE)

	[5]	**[6]**	**[7]**	**[8]**	**[9]**
demand for redist.	-0.043	-0.231*	-0.178	0.028***	0.122***
	(0.032)	(0.118)	(0.126)	(0.007)	(0.006)
party fract.	0.091**	-0.077	-0.105	-0.105**	-0.063
	(0.043)	(0.116)	(0.109)	(0.045)	(0.040)
dem. redist. x fract.		0.003	0.002	0.002***	0.001***
		(0.002)	(0.002)	(0.000)	(0.000)
unempl. rate			-0.304***	-0.304***	-0.111*
			(0.065)	(0.066)	(0.062)
productivity (-1)			-5.024**	-5.024**	-1.047
			(2.348)	(2.388)	(1.960)
gov. partisanship			0.003	0.003	0.001
			(0.007)	(0.007)	(0.007)
ρ					0.818
Estimator	lsdv	lsdv	lsdv	fevd	fevd/ar1
Year dummies	yes	yes	yes	yes	yes
Country dummies	yes	yes	yes	yes	yes
Number of Obs	276	276	245	245	232
R-Squared	0.955	0.955	0.971	0.971	0.961

Note : Panel corrected standard errors in parentheses. Estimator fevd, stage 1 and stage 3 : AR1 Prais-Winsten transformation (serial correlation of the error term). $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

TAB. 3.5: Marginal effect of the demand for redistribution (FE)

party fract.	[6]	[7]	[8]	[9]
min	-0.100**	-0.053	0.153***	0.186***
	(0.040)	(0.042)	(0.018)	(0.017)
mean_less_1sd	-0.067**	-0.022	0.184***	0.202***
	(0.030)	(0.027)	(0.022)	(0.021)
mean	-0.045	-0.001	0.204***	0.212***
	(0.030)	(0.023)	(0.025)	(0.024)
mean_plus_1sd	-0.023	0.019	0.225***	0.223***
	(0.038)	(0.028)	(0.029)	(0.027)
max	-0.004	0.038	0.244***	0.233***
	(0.047)	(0.037)	(0.031)	(0.029)

Note : Standard errors in parentheses.

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

TAB. 3.6: Marginal effect of party fractionalization (FE)

demand redist.	[6]	[7]	[8]	[9]
min	-0.001	-0.032	-0.032	-0.026
	(0.070)	(0.063)	(0.041)	(0.037)
mean_less_1sd	0.040	0.006	0.006	-0.007
	(0.051)	(0.044)	(0.040)	(0.036)
mean	0.071*	0.035	0.035	0.009
	(0.043)	(0.037)	(0.039)	(0.037)
mean_plus_1sd	0.101**	0.065	0.065	0.024
	(0.044)	(0.040)	(0.039)	(0.037)
max	0.136**	0.098*	0.098**	0.041
	(0.055)	(0.055)	(0.040)	(0.039)

Note : Standard errors in parentheses.

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

Annexe 3.B   Dispersion of Preferences for Redistribution

3.B.1   Basic Model of Welfare State Generosity

TAB. 3.7: Welfare state generosity (OLS)

	[10]	[11]	[12]	[13]
disp. pref. redist.	-0.095**	1.624***	0.248	0.641
	(0.046)	(0.205)	(0.484)	(0.508)
party fract.	0.411***	1.460***	0.612**	1.056***
	(0.040)	(0.111)	(0.276)	(0.302)
disp. pref. x fract.		-0.023***	-0.006	-0.013*
		(0.003)	(0.006)	(0.007)
unempl. rate			-0.550***	-0.605***
			(0.084)	(0.082)
productivity (-1)			-0.408	10.981***
			(2.670)	(3.427)
gov. partisanship			-0.174***	-0.168***
			(0.033)	(0.033)
Estimator	ols	ols	ols	ols
Year dummies	no	no	no	yes
Country dummies	no	no	no	no
Number of Obs	276	276	245	245
R-Squared	0.170	0.201	0.386	0.441

Note : Panel corrected standard errors in parentheses.

$^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

TAB. 3.8: Marginal effect of the dispersion of preferences (OLS)

party fract.	[11]	[12]	[13]
min	0.468***	-0.034	0.000
	(0.080)	(0.174)	(0.177)
mean_less_1sd	0.177***	-0.104	-0.158
	(0.053)	(0.104)	(0.101)
mean	-0.017	-0.151**	-0.265***
	(0.039)	(0.067)	(0.061)
mean_plus_1sd	-0.211***	-0.198***	-0.372***
	(0.035)	(0.061)	(0.060)
max	-0.380***	-0.242***	-0.470***
	(0.041)	(0.089)	(0.095)

Note : Standard errors in parentheses.

$^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

TAB. 3.9: Marginal effect of party fractionalization (OLS)

disp. pref.	[11]	[12]	[13]
min	0.637***	0.410***	0.600***
	(0.033)	(0.059)	(0.072)
mean_less_1sd	0.484***	0.373***	0.515***
	(0.030)	(0.035)	(0.043)
mean	0.347***	0.340***	0.439***
	(0.035)	(0.046)	(0.047)
mean_plus_1sd	0.211***	0.306***	0.363***
	(0.044)	(0.076)	(0.076)
max	-0.005	0.254*	0.244*
	(0.064)	(0.132)	(0.134)

Note : Standard errors in parentheses.

$^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

3.B.2 Fixed Effects Model of Welfare State Generosity

Tab. 3.10: Welfare state generosity (FE)

	[14]	[15]	[16]	[17]	[18]
disp. pref. redist.	0.086**	0.107	-0.006	0.052***	-0.161***
	(0.043)	(0.239)	(0.230)	(0.010)	(0.010)
party fract.	0.100**	0.115	-0.090	-0.090*	-0.307***
	(0.045)	(0.194)	(0.181)	(0.051)	(0.049)
disp. pref. x fract.		-0.000	0.003	0.003***	0.006***
		(0.003)	(0.003)	(0.001)	(0.001)
unempl. rate			-0.354***	-0.354***	-0.129**
			(0.068)	(0.070)	(0.065)
productivity (-1)			-6.194**	-6.194**	-0.923
			(2.578)	(2.591)	(2.267)
gov. partisanship			0.004	0.004	0.000
			(0.007)	(0.007)	(0.007)
ρ					0.802
Estimator	lsdv	lsdv	lsdv	fevd	fevd/ar1
Year dummies	yes	yes	yes	yes	yes
Country dummies	yes	yes	yes	yes	yes
Number of Obs	276	276	245	245	232
R-Squared	0.955	0.955	0.972	0.972	0.964

Note : Panel corrected standard errors in parentheses. Estimator fevd, stage 1 and stage 3 : AR1 Prais-Winsten transformation (serial correlation of the error term). $^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

TAB. 3.11: Marginal effect of the dispersion of preferences (FE)

party fract.	[15]	[16]	[17]	[18]
min	0.093	0.135**	0.193***	0.150***
	(0.081)	(0.066)	(0.032)	(0.031)
mean_less_1sd	0.089*	0.170***	0.228***	0.227***
	(0.050)	(0.039)	(0.040)	(0.039)
mean	0.087**	0.194***	0.251***	0.279***
	(0.041)	(0.039)	(0.045)	(0.044)
mean_plus_1sd	0.084*	0.217***	0.275***	0.331***
	(0.051)	(0.057)	(0.051)	(0.050)
max	0.082	0.239***	0.297***	0.378***
	(0.068)	(0.079)	(0.056)	(0.055)

Note : Standard errors in parentheses.

$^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

TAB. 3.12: Marginal effect of party fractionalization (FE)

disp. pref.	[15]	[16]	[17]	[18]
min	0.104	0.011	0.011	-0.086**
	(0.082)	(0.067)	(0.041)	(0.039)
mean_less_1sd	0.102	0.029	0.029	-0.045
	(0.064)	(0.050)	(0.041)	(0.038)
mean	0.101**	0.046	0.046	-0.008
	(0.051)	(0.040)	(0.041)	(0.038)
mean_plus_1sd	0.099**	0.063	0.063	0.028
	(0.043)	(0.039)	(0.041)	(0.038)
max	0.096**	0.089	0.089**	0.087**
	(0.047)	(0.055)	(0.043)	(0.039)

Note : Standard errors in parentheses.

$^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

Annexe 3.C   Descriptive Statistics

TAB. 3.13: Summary statistics of the sample

Variable	Mean	SDbw	SDwth	b/w	Min	Max	N	n	T
WS generosity	26.61	7.80	1.70	4.60	17.42	45.38	276	12	23
demand for redist.	56.82	11.73	3.40	3.46	29.47	81.76	276	12	23
disp. pref. redist.	48.22	5.82	2.00	2.90	35.66	63.48	276	12	23
party fract.	71.12	7.78	3.87	2.01	50.10	86.85	276	12	23
unempl. rate	7.04	2.73	2.01	1.35	1.60	16.80	276	12	23
gov. partisanship	55.34	11.84	12.66	0.93	18.20	93.29	257	12	>21
productivity (log)	10.89	0.10	0.13	0.77	10.46	11.24	276	12	23
productivity	54079	5254	6786	0.77	34903	76325	276	12	23

Note : Our sample only includes 12 countries over 18. Belgium, Denmark, Finland, Netherlands, Portugal and Spain are excluded from the sample, due to the lack of data availability. The first 5 countries lack data on preferences for redistribution (see Table 3.14 below) ; Spain lacks data on welfare state generosity.

TAB. 3.14: ISSP surveys - sample size

Waves	1985	1987	1990	1992	1996	1999
Australia	1453	1563	2358	2091	2099	1602
Austria	966	934		988		972
Canada				964	1136	942
France					1276	1848
Germany	1032	1282	3770	3181	3224	1321
Ireland				1764	977	789
Italy	1580	1014	972	991	1065	

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TAB. 3.14: ISSP surveys - sample size (cont')

Waves	1985	1987	1990	1992	1996	1999
Japan					1159	1195
Netherlands		1559				
Norway			1475	1472	1302	1226
Portugal						1129
Spain					2387	1177
Sweden				714	1182	1110
United Kingdom	1513	1171	1186	1025	945	758
USA	665	1484	1201	1216	1264	1177
N	7209	9007	12726	12642	18016	15246

Note : Belgium and Finland did not participate to any of the above waves. Data for Denmark are available only for the last wave on a non standardized separate data set. We did not use it for this study. Nor did we use data for Netherlands and Portugal, since they were only available for the last wave (1999) and are by construction time-invariant.

TAB. 3.15: Unit Root Tests

		Fisher Test		IPS Test	
	Model	χ^2	p-value	W[t-bar]	p-value
y_it	AR(1)	33.262	0.405	-0.118	0.453
	AR(1) + trend	45.969	0.052	-2.813	0.002
	AR(1) + drift	88.104	0.000		
f_it	AR(1)	25.269	0.909	-1.554	0.060
	AR(1) + trend	41.363	0.248	-0.338	0.368
	AR(1) + drift	91.802	0.000		
u_it	AR(1)	100.009	0.000	-3.230	0.001
	AR(1) + trend	110.680	0.000	-3.203	0.001
	AR(1) + drift	169.700	0.000		
w_it	AR(1)	17.076	0.996	1.070	0.858
	AR(1) + trend	36.636	0.439	0.238	0.594

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TAB. 3.15: Unit Root Tests (cont')

	Model	Fisher Test		IPS Test	
		χ^2	p-value	W[t-bar]	p-value
	AR(1) + drift	63.290	0.003		
$g_i t$	AR(1)	67.495	0.001	-2.225	0.013
	AR(1) + trend	62.414	0.004	-1.651	0.049
	AR(1) + drift	132.420	0.000		

Note : H0 : Non-stationary series. Fisher test from Maddala and Wu (1999) ; IPS test from Im, Pesaran and Shin (2003).
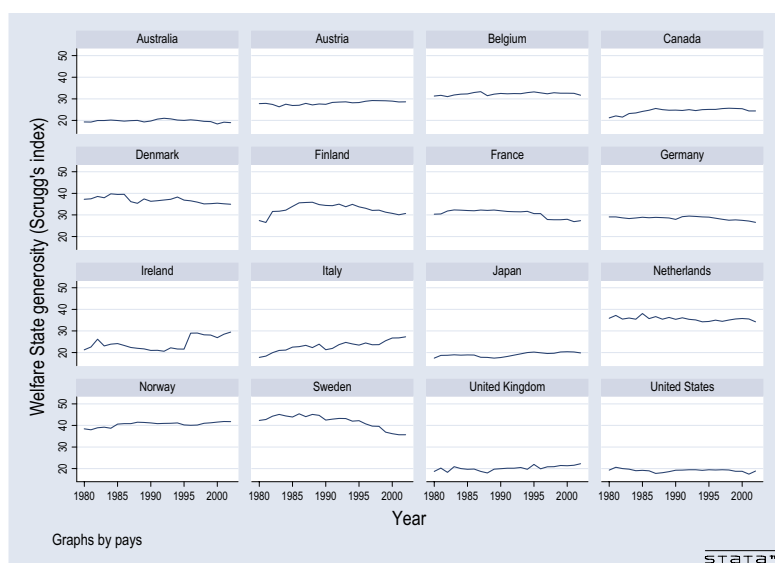
FIG. 3.1 – Welfare state generosity by country
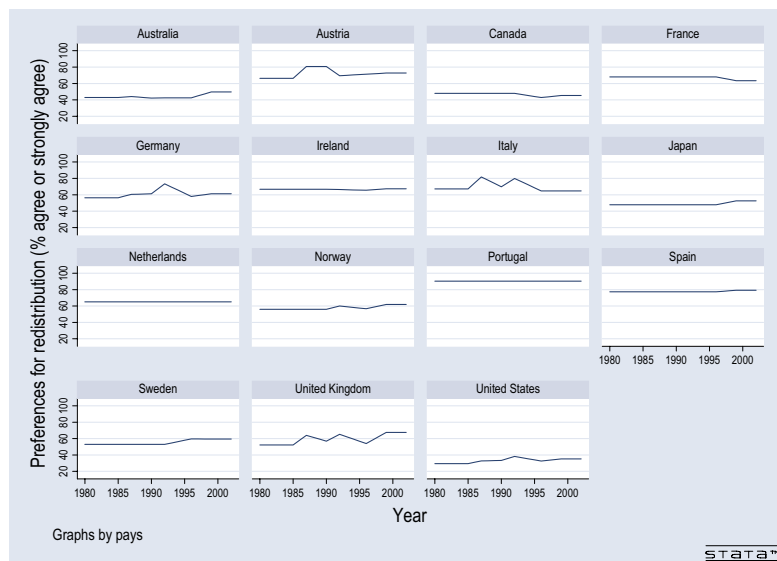
FIG. 3.2 – Demand for redistribution by country
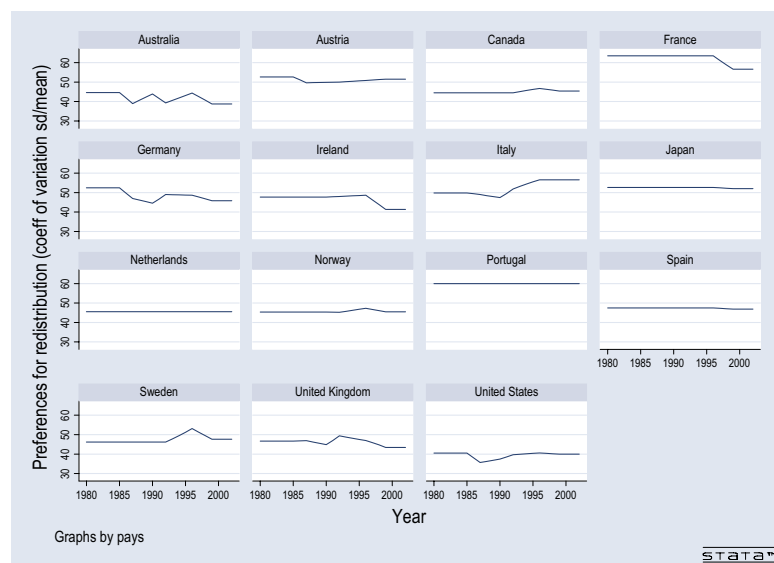
FIG. 3.3 – Dispersion of preferences for redistribution by country
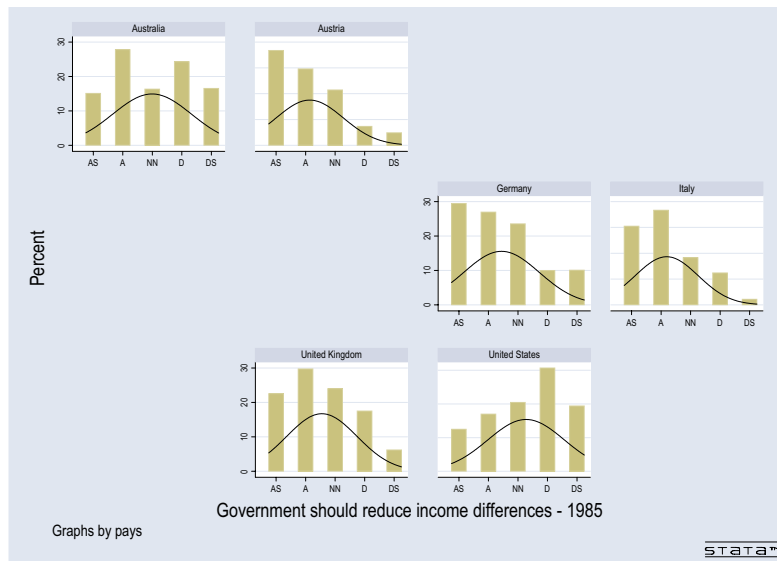
FIG. 3.4 – Distribution of preferences for redistribution - 1985
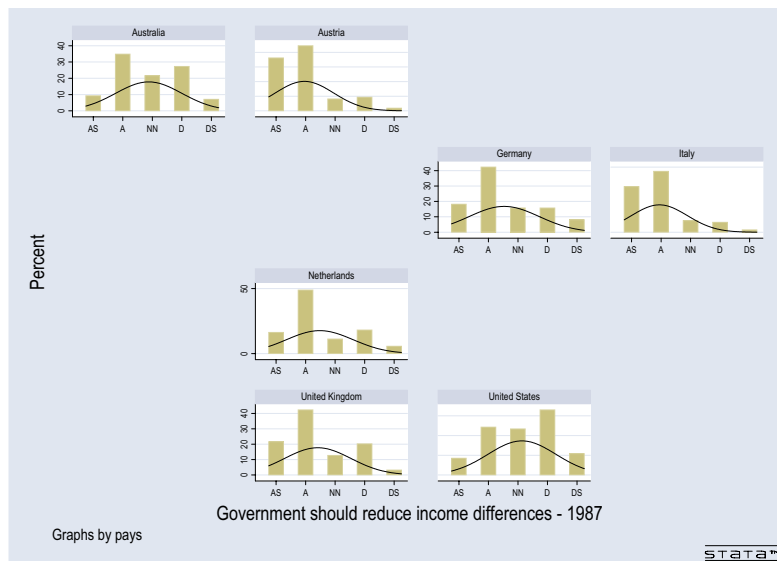
FIG. 3.5 – Distribution of preferences for redistribution - 1987
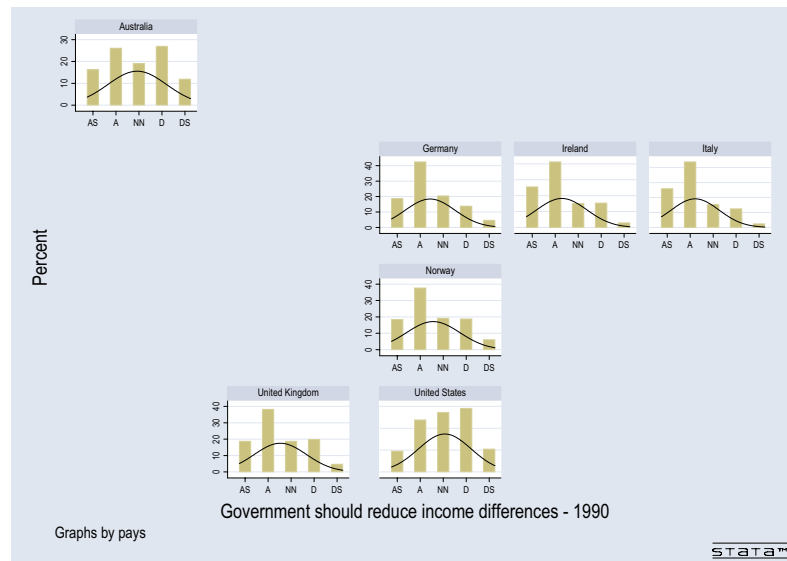
FIG. 3.6 – Distribution of preferences for redistribution - 1990
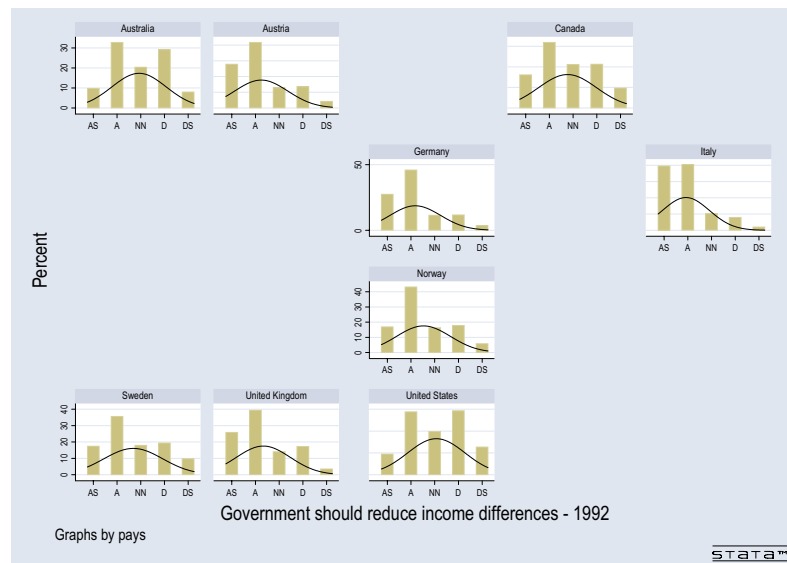
FIG. 3.7 – Distribution of preferences for redistribution - 1992
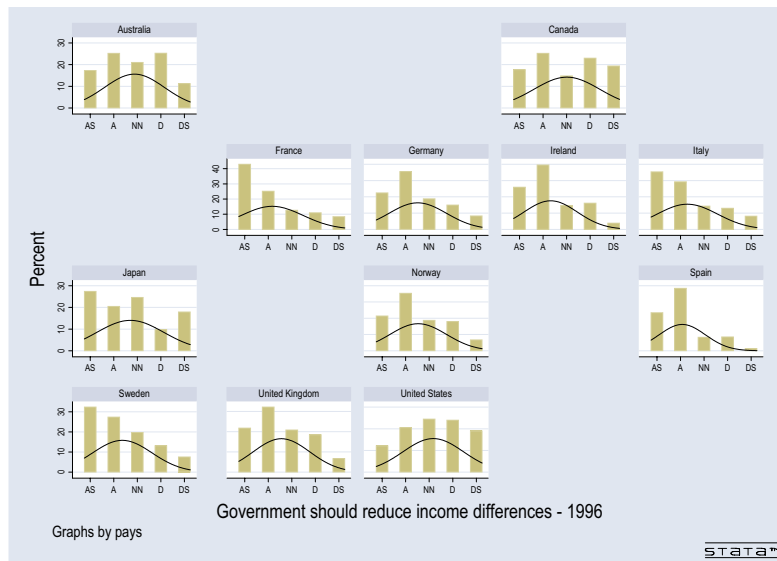
FIG. 3.8 – Distribution of preferences for redistribution - 1996
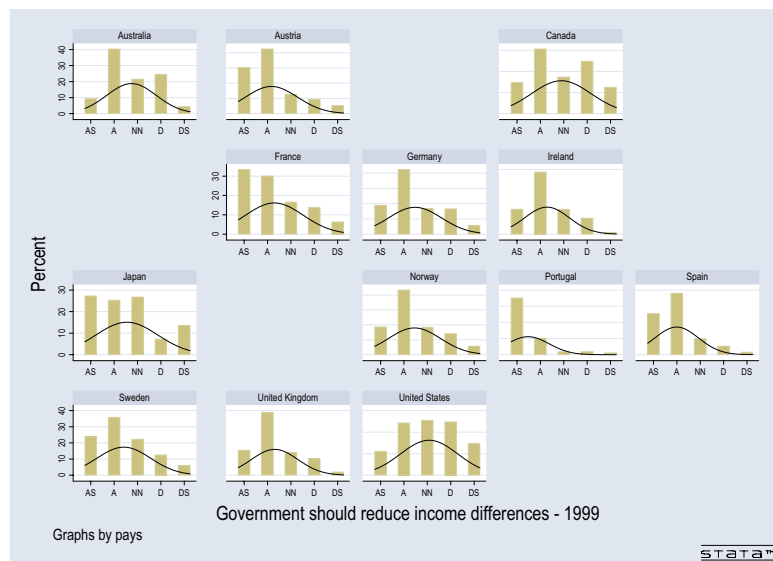
FIG. 3.9 – Distribution of preferences for redistribution - 1999
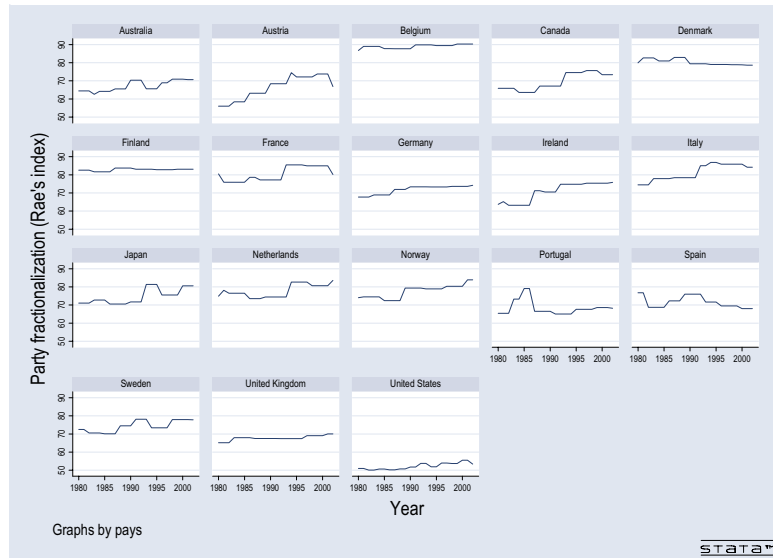
FIG. 3.10 – Party fractionalization by country
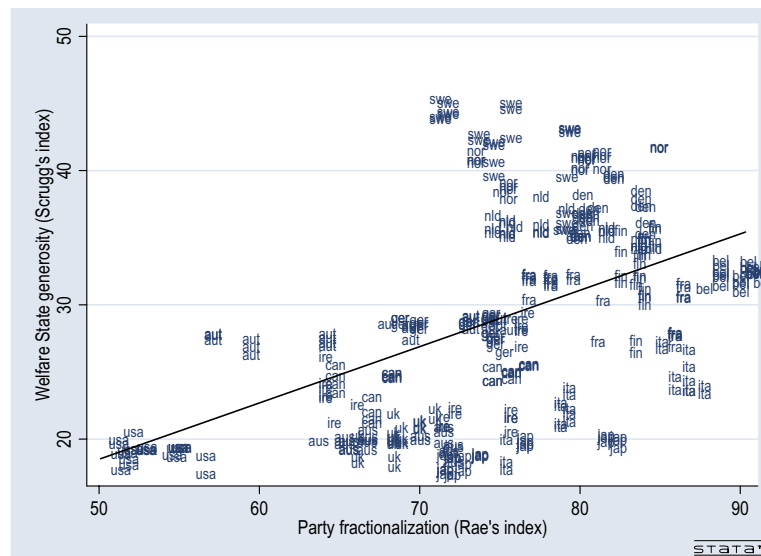
FIG. 3.11 – WS generosity and party fractionalization (corr 0.50)
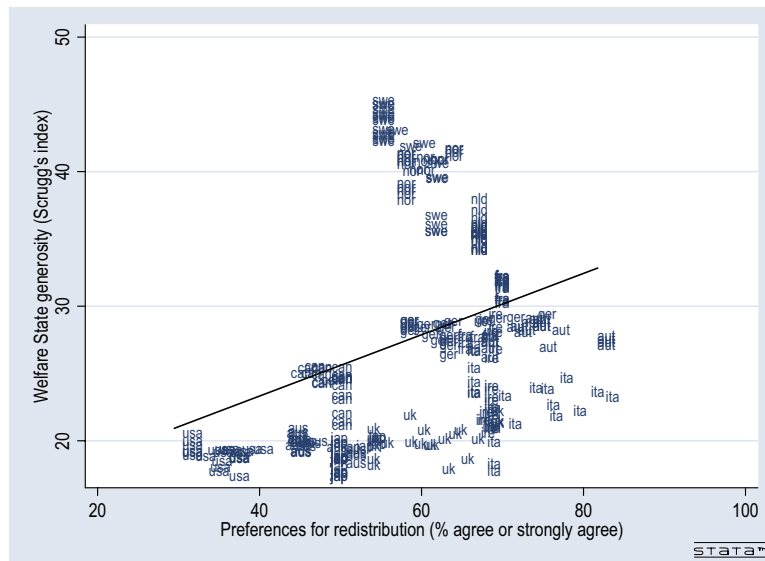
Fɪɢ. 3.12 – WS generosity and demand for redistribution (corr 0.34)
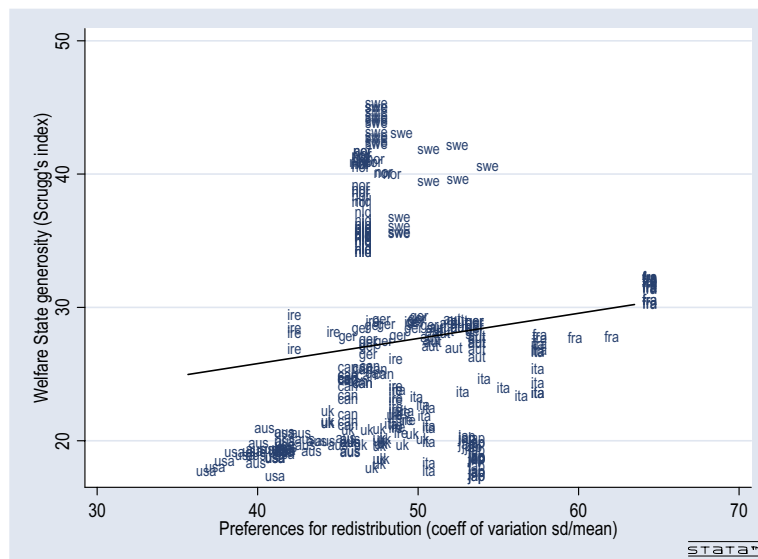
Fɪɢ. 3.13 – WS generosity and dispersion of preferences (corr 0.14)

Conclusion Générale

Cette thèse explore l'un des aspects majeurs de l'économie politique : Quel est le rôle de la demande politique sur l'évolution de la politique économique ? Afin de répondre à cette question, nous nous sommes concentrés sur les politiques redistributives et avons porté une attention particulière à la dimension hétérogène de la demande. Nous avons mené des analyses empiriques à l'aide de données internationales étalées dans le temps. Nous avons tout d'abord exploré les origines de la demande (préférences individuelles) ; puis nous avons évalué l'évolution de la demande et des groupes sociaux qui portent des préférences hétérogènes ; enfin, nous avons interagit la demande avec une caractéristique de la compétition électorale et avons mesuré son impact sur l'issue politique.

Dans l'ensemble, nous avons montré que le fait de regarder attentivement les préférences qui structurent la demande aide à mieux comprendre la formation de la politique économique. Cela implique l'analyse de la distribution des préférences et la prise en compte de la multidimensionalité de la demande, qui permet de déduire la composition des groupes sociaux et leur évolution à travers le temps, l'intensité de la demande et l'interaction possible avec l'offre politique. Ceci a potentiellement d'importantes implications sur la manière de mener des réformes de politique économique, dont le succès dépend du degré de dispersion du soutien politique des électeurs.

Dans le Chapitre 1, nous sommes remontés aux origines de la demande, et avons évalué les déterminants des préférences pour la redistribution. De manière

importante, en utilisant des données de sondage individuelles pour quatre pays européens, nous avons montré que le positionnement des individus sur le marché du travail (activité professionnelle, statut d'emploi) constituait un bon indice de leurs attitudes vis-à-vis de la redistribution. Etant donné le lien entre les attitudes et le positionnement socio-économique, nous avons rassemblé les individus le long de la dimension professionnelle. En utilisant plus avant l'information relative à chacun des quatre pays, nous avons finalement évalué les différences entre groupes sociaux d'un pays à l'autre. Ce chapitre a rendu apparente la différentiation des alliances sociales parmi les pays, et donc le besoin de mener les réformes différemment selon le pays.

Dans le Chapitre 2, nous avons dessiné la carte de l'espace politique de la demande, et avons permis à cette demande d'évoluer dans le temps. Nous avons analysé l'hétérogénéité des préférences dans un contexte de demande multidimensionnelle. Tenir compte de la multidimensionalité de la demande est essentiel pour comprendre les évolutions des comportements électoraux et la rupture de certaines coalitions sociales. En effet, les agents basent leurs décisions électorales sur des dimensions qui se rapportent à différents champs économiques, dont l'importance relative est fonction du contexte macroéconomique. Ceci implique que les coalitions sociales sont instables et parfois temporairement impossibles. En utilisant des données françaises sur la période 1978-2002, nous avons donc déterminé quels groupes socio-économiques portent quelles demandes, et spécifié les blocs socio-politiques qui sont aujourd'hui cristallisés autour des principales dimensions de l'espace politique français.

Dans le Chapitre 3, nous avons examiné l'impact de la demande politique sur la politique économique, en tenant compte de sa composition (dispersion des préférences). Nous avons par ailleurs évalué la complémentarité entre la demande et une caractéristique de la compétition politique du côté de l'offre, c'est-à-dire le nombre de partis politiques dans la législature. L'analyse a été menée sur un

échantillon de 18 pays de l'OCDE, sur une période de 23 années (1980-2002). Nous avons montré que la demande de redistribution avait un impact direct et non négligeable sur le niveau de générosité de l'Etat social, et que cet effet est augmenté par la fragmentation du système de partis. Nous avons aussi révélé l'importance de l'impact direct de la distribution des préférences sur la politique économique.

Cette recherche appelle de plus amples extensions. Nous mentionnons brièvement deux d'entre elles, qui nous paraissent particulièrement importantes pour notre travail. Premièrement, une telle étude empirique bénéficierait d'une modélisation théorique permettant de tracer le lien entre les politiques économiques et la composition de la demande (différents groupes socio-économiques), et d'examiner le rôle des institutions politiques en tant que moyen d'agréger les préférences. Deuxièmement, le rôle de l'offre politique pourrait être pris en compte plus avant, en lien avec la conception des politiques économiques en tant qu'équilibres politiques. En effet, l'offre politique peut avoir ses propres préférences politiques, et ces préférences pourraient conditionner la manière dont l'offre des partis répond à la demande des électeurs. Par ailleurs, la plateforme politique des partis pourrait avoir un impact direct sur les préférences des individus, par un effet retour. Finalement, les questions d'information pourraient affecter le jeu politique : l'asymétrie d'information entre les partis ou candidats et les électeurs pourrait grandement modifier la manière dont les préférences individuelles sont agrégées et transférées dans l'arène politique.

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