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## Comment concilier service public et concurrence? Essais sur le rôle de l'Etat durant la transition

Waldemar Karpa

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THESE

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Discipline : Sciences Economiques

COMMENT CONCILIER SERVICE PUBLIC ET  
CONCURRENCE ?  
ESSAIS SUR LE RÔLE DE L'ÉTAT DURANT LA  
TRANSITION

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*A mes parents*

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# Table des matières

Introduction générale et Résumé de thèse	1
<b>1 Reconciliation between market and competition : letting the State intervene</b>	<b>18</b>
1.1 Introduction . . . . .	19
1.2 Motives of public intervention . . . . .	20
1.2.1 Intervention for reasons of efficiency . . . . .	20
1.2.2 State and Services of General Interest's provision (SGI) . . .	27
1.2.3 Intervention for reasons of social justice . . . . .	31
1.2.4 Public choice and government failure . . . . .	31
1.2.5 The issue of privatization . . . . .	32
1.2.6 Drawing the borderlines between state and markets . . . . .	37
1.3 State and Market Transition . . . . .	38
1.4 Reforming the welfare state : unfinished business of transition . . .	42
1.5 Conclusion . . . . .	44
1.6 Appendix . . . . .	46
<b>2 Regulation and Performance of Electricity Distribution Utilities : The Case of Poland</b>	<b>52</b>
2.1 Introduction . . . . .	52
2.2 Measuring Efficiency : Theoretical Framework . . . . .	57
2.2.1 Stochastic Frontier Models . . . . .	57
2.2.2 Data Envelopment Analysis . . . . .	59
2.3 Model specification and Data . . . . .	61
2.3.1 Frontier Analysis . . . . .	61

2.3.2	DEA Specification . . . . .	63
2.4	Estimation Results . . . . .	64
2.5	Conclusion . . . . .	69
2.6	Additional issue : Public service of electricity . . . . .	70
2.6.1	Electricity service : liberal and universal? . . . . .	71
2.7	Appendix . . . . .	73
<b>3</b>	<b>Why It Is So Hard ? A History of Highway Concession Contracts in Poland</b>	<b>79</b>
3.1	Introduction . . . . .	79
3.2	The genesis of highway construction in Poland . . . . .	81
3.3	Project schedule . . . . .	82
3.4	The attribution problem . . . . .	83
3.4.1	The story . . . . .	83
3.4.2	What went wrong? . . . . .	84
3.4.3	What are the theoretical suggestions? . . . . .	85
3.4.4	What should have been done? . . . . .	89
3.5	The supervision problem . . . . .	90
3.5.1	The story . . . . .	90
3.5.2	What are the theoretical suggestions? . . . . .	91
3.5.3	What should have been done? . . . . .	95
3.6	Conclusion . . . . .	95
3.7	Appendix A . . . . .	97
3.7.1	Trans-European Networks . . . . .	97
3.8	Appendix B . . . . .	98
3.9	Appendix C . . . . .	99
<b>4</b>	<b>The Demand for Private Health Care in Poland</b>	<b>102</b>
4.1	Introduction . . . . .	102
4.2	Financing health system and private health care in Poland . . . . .	108
4.3	The demand for private health . . . . .	111
4.3.1	The economic model . . . . .	111
4.3.2	The econometric model . . . . .	114

4.3.3	The data . . . . .	116
4.4	Factors influencing the demand for private/public healthcare . . . .	117
4.5	Further discussion on health care preferences . . . . .	123
4.6	Conclusions . . . . .	124
<b>A Final Plea</b>		<b>128</b>



# Liste des tableaux

1.1	A view of public and private provision . . . . .	34
2.1	Summary Statistics . . . . .	62
2.2	DEA model . . . . .	63
2.3	Stochastic production frontier estimation . . . . .	65
2.4	Average technical efficiency scores by utility for the period 2001-2003	66
2.5	Average technical efficiency scores by utility for the period 2001-2003	67
2.6	Comparison of the distributions efficiency measures across methods	68
2.7	"The BEST" and "The WORST" Utilities . . . . .	73
4.1	Multinomial logit estimates of healthcare provider choice . . . . .	119
4.2	Multinomial logit estimates of marginal effects of public and private use (2005 wave) . . . . .	120
4.3	Small-Hsiao test of IIA assumption . . . . .	122

# Table des figures

3.1	Long-term contract . . . . .	88
3.2	A2 Investment Appraisal . . . . .	98
3.3	Financial flows in Concession agreement . . . . .	99

# Introduction générale et Résumé de thèse

LE but de cette thèse est d'apporter un regard nouveau et critique sur le changement systémique dans les pays de l'ancien bloc soviétique. Si les réformes économiques nécessaires au passage de la planification centrale à l'économie de marché ont fait objet de nombreuses études, la transformation du rôle de l'Etat a reçu moins d'attention. La déréglementation des prix, la stabilisation macroéconomique et la privatisation devaient constituer les principaux ingrédients du succès de la "thérapie de choc" préconisée par certains économistes à l'aube de la transition. Cependant, il n'a guère été question du rôle de l'Etat dans ce nouvel environnement qu'est l'économie de marché.

En abordant la transition, les pays de l'Est semblaient s'orienter vers le libéralisme. Les observateurs occidentaux craignaient alors qu'après avoir tant accepté d'un État omniprésent, ces pays soient désormais tentés par un refus non moins dangereux de tout interventionnisme. Aujourd'hui pourtant, la réalité du post-socialisme nous démontre que la transition signifie systématiquement un repli de l'action publique. L'Etat demeure de moins en moins présent à l'Est et c'est le poids de cette présence que nous voulons ici aborder.

Il ne s'agit pas pour autant d'appliquer une vieille méthode d'analyse des dépenses publiques pour saisir le nouveau rôle de l'Etat. Nous en décrirons seulement le mouvement, la structure et les éventuelles contraintes. Ensuite, nous tenterons de nous rapprocher de vrais " défis " pour l'Etat, Etat qui se voit désormais confier le rôle de gardien des marchés et d'acteur principal dans la marche vers une économie de bien-être. En retenant l'exemple polonais pour apprécier concrètement ce que l'on peut déjà pressentir comme des nouvelles responsabilités de l'Etat, nous avons choisi d'analyser les trois rôles de l'Etat suivants :

- L'Etat - régulateur ;
- L'Etat - fournisseur des biens publics ;
- et L'Etat - garant du bien-être collectif.

L'essentiel de notre thèse est construit autour de ces trois " défis " pour l'Etat dans les pays en transition. Les trois chapitres consacrés à chacun de ces trois défis sont précédés par un chapitre préliminaire, dans lequel nous nous intéressons aux motifs de l'intervention publique. Nous y menons une enquête unique dans son genre, enquête dont le but est de confronter les défaillances de marché aux défaillances de l'action publique.

Quels sont les motifs de l'intervention publique ? Fondamentalement, qu'est-ce qui amène l'Etat à intervenir dans le jeu du marché ? Dans ce **chapitre préliminaire**, nous tentons d'apporter, d'un point de vue théorique, une synthèse des débats sur ces questions incontournables pour la science économique.

De nos jours, rares sont ceux qui nient la nécessité d'une intervention publique dans l'économie. Aussi peu nombreux sont ceux qui contestent l'intérêt du recours

aux mécanismes de marché. Un consensus semble ainsi avoir émergé autour d'une troisième voie, entre le "tout-Etat" et le "tout-marché", entre le dirigisme étatique radical et le "laissez-faire" absolu. Cette troisième voie résulte tant de désaccords sur la nature et l'ampleur des imperfections de chaque mode de régulation, que d'appréciations différentes sur l'aisance avec laquelle ces imperfections peuvent être corrigées. Toujours est-il que le rôle économique de l'Etat se conçoit difficilement en dehors de sa relation au marché. En particulier, si l'on se place dans une économie de marché, une condition nécessaire de la légitimité de l'intervention publique est que l'Etat est susceptible de "faire mieux" que le marché.

"Faire mieux", mais selon quel critère? L'une des réponses possibles amène l'Etat à intervenir pour des raisons d'efficacité. Nous proposons une revue de cette littérature dans la première partie du chapitre. Trois motifs basés sur l'économie du bien-être sont traditionnellement évoqués pour justifier l'intervention publique : la stabilisation économique, l'allocation optimale des ressources et la redistribution. Les moyens déployés par l'Etat afin d'atteindre ses objectifs incluent *(i)* la réglementation face aux défaillances du marché (le monopole naturel, par exemple), *(ii)* l'internalisation des externalités (lorsque l'action de consommation ou de production d'un agent a des conséquences sur le bien-être d'au moins un autre agent sans que cette interdépendance soit reconnue par le système de prix) et *(iii)* la "fourniture" de biens publics. Ce dernier moyen s'est révélé être fécond puisque, grâce à son caractère "non-rival" et "non-exclusif", le bien public contribue à augmenter le bien-être collectif.

Une autre raison évoquée pour l'intervention de l'Etat dans les jeux de marché s'explique par la longue tradition de l'Etat gardien des "services d'intérêt général".

Ce rôle de l'Etat prend tout son sens surtout en Europe, où les services publics, tels qu'ils existent aujourd'hui, ont puisé dans l'héritage conceptuel du XIXème siècle. C'est pourquoi l'Europe présente une grande diversité de traditions en matière de service public. Les modèles allemand, britannique et nordique se distinguent notamment du modèle des services publics "à la française". Cette diversité est l'une des raisons pour lesquelles l'Union européenne utilise le terme de "service d'intérêt général" (SIG) dans le but, non pas de fusionner les différentes approches nationales existantes, mais plutôt de "dégager" le "fond européen commun" derrière les notions de service public et universel. Nous nous concentrons justement sur l'Europe. Nous traçons les grandes lignes des lois relatives, lois qui se sont construites de manière jurisprudentielle au gré des arrêts de la Cour de Justice des Communautés Européennes. Nous présentons ensuite les secteurs soumis à des obligations de SIG. Enfin, nous résumons le débat actuel autour des méthodes de financement de ces services.

Si dans certains cas elle s'avère être justifiée pour corriger les défaillances de marché, l'intervention de l'Etat ne peut qu'avoir des conséquences aggravantes sur le niveau de bien-être général. Nous étudions ce problème en analysant les arguments de l'Ecole du choix public. Cette littérature est marquée par une vision de "l'Etat-régulateur", où des offreurs (les décideurs politiques et les fonctionnaires) et des demandeurs (les entreprises jouissant d'une situation de monopole) de la réglementation sont guidés par leurs propres intérêts. Les mandataires des fonctionnaires (les partis politiques) cherchent uniquement à obtenir le plus grand nombre de voix dans les élections. Les dirigeants des partis n'ont pour but que de retirer le maximum d'avantages personnels de l'exercice du pouvoir. La moti-

vation le plus souvent prêtée aux fonctionnaires est leur passage dans l'industrie réglementée. Tout comme les bureaucrates qui maximisent la production de leurs services administratifs, ils peuvent aussi multiplier le nombre de réglementations afin que leurs directions prennent de l'importance. Du côté des demandeurs de réglementation, ce sont les entreprises qui veulent être protégées de la concurrence. En contrepartie des réglementations qu'elles obtiennent, les entreprises contribuent aux financements des campagnes électorales, apportent des voix en engageant leur notoriété et offrent des carrières dans le secteur privé. Ces mécanismes nuisibles sont réunis sous le terme de "théorie de la capture de la réglementation". Les théoriciens correspondants (Posner et Peltzman, entre autres) proposent une solution radicale pour limiter l'action des groupes de pression : retirer à l'Etat le droit de réglementer.

Dans ce chapitre préliminaire, nous énonçons des arguments qui, du point de vue d'efficacité économique, justifient l'intervention publique. Nous présentons aussi des contre-arguments qui, quant à eux, prônent l'absence de toute implication de l'Etat dans le jeu du marché. Une remarque finale s'impose : le marché et l'Etat constituent tous les deux d'imparfaits organes de régulation économique. Cette remarque est cruciale du point de vue de la politique économique. Néanmoins, il est important de faire la distinction entre les buts de la politique économique et les moyens d'y parvenir. Les objectifs englobent l'efficacité économique (au sens large du terme), ainsi que la justice sociale (bien que la signification de ce terme varie en fonction de la théorie sociale appliquée). De leur côté, les méthodes incluent la redistribution et l'intervention directe sur le marché sous la forme d'une réglementation, d'un financement public où bien de la provision en biens publics.

Finalement, toute organisation d'activité sociale et économique puise dans ce mélange des marchés privés et de la production publique. Cette conclusion nous amène directement à nous intéresser à deux courants de la pensée économique qui - au lieu de classer les activités économiques par rapport à l'appartenance au marché ou à l'Etat - s'interrogent sur le choix de la meilleure structure de gouvernance pour chacune des transactions considérées. Par conséquent, nous traçons les grandes lignes de La Nouvelle Economie Institutionnelle, ainsi que du mouvement de la Nouvelle Gestion des Affaires Publiques.

Puisque notre problématique générale nous place dans le contexte de la transition systémique, nous consacrons la deuxième partie de ce chapitre préliminaire au débat sur le rôle approprié que l'Etat devrait jouer dans ce nouvel environnement. Nous rappelons d'abord, la nécessité de la structure institutionnelle claire, compréhensible et réactive à tous les agents économiques, pour que les transactions volontaires ne se fassent pas "dans le vide". Pour s'acquitter de ces tâches, l'Etat a donc besoin de certaines institutions bien conçues, dirigées par des personnes compétentes et guidées par des incitations appropriées. Il est cependant clair que de telles institutions n'apparaissent pas grâce à un " simple " coup de baguette magique. En particulier, il faut se souvenir du fait que les pays avec une longue tradition de l'économie de marché ont mis des décennies à perfectionner leurs institutions, et qu'ils ont eux aussi fréquemment dû mettre en œuvre de nombreuses améliorations. Par la suite, nous soulignons aussi le temps nécessaire à la population pour que celle-ci s'adapte à des nouvelles règles du jeu. Nous nous penchons aussi sur le rôle catalyseur de l'Etat, Etat qui doit veiller à ce que les effets pervers de la transition économique ne se répercutent pas sur l'équilibre du bien-être de



l'ensemble de ses citoyens, créant ainsi des graves conflits sociaux et " détériorant " par la même occasion la justice sociale. Par conséquent, nous traitons le sujet des privatisations, privatisations qui - au lieu de contribuer à une augmentation générale du bien être collectif - créèrent souvent, par des méthodes inadaptées, ou bien des opérations malmenées, des inégalités flagrantes.

Nous clôturons ce chapitre par quelques réflexions sur l'état général de la transition, encore appelé " post-transition ". Nous faisons le constat que, dès lors qu'un pays a fait la transition à l'économie de marché, le rôle de l'Etat devient foncièrement différent. Au lieu d'intervenir directement dans l'activité, il agit surtout par l'intermédiaire du système fiscal, du budget, de la redistribution et de quelques réglementations essentielles. Puisque le stade de réformes dites "réactives" est désormais franchi, il conviendrait de poursuivre - ou dans certains cas d'entamer - des réformes sociales. Les gouvernements des pays en transition ne devraient pas tarder à mettre en œuvre de telles réformes. Le marché du travail, les retraites et la santé : voici quelques exemples figurant sur la liste des chantiers à entreprendre dans les années à venir. Enfin, nous clamons qu'il est impossible et malavisé de se débarrasser de tout l'héritage de l'ancien système et ce, surtout dans le domaine social. Des nouvelles solutions doivent être envisagées pour que les agents économiques se retrouvent à nouveau dans la situation d'une sécurité sociale, qui reste encore l'une des valeurs les plus regrettées du socialisme, comme le dernier chapitre de notre thèse peut en témoigner.

*Dans la suite de la thèse,* nous présentons trois études empiriques qui analysent les rôles de l'Etat précédemment énoncés. Nous nous intéressons à un pays particulier, la Pologne. Ce choix se justifie par plusieurs raisons. Tout d'abord, la

Pologne est plutôt considérée comme un pays qui a bien réussi sa première étape de la transition. Toutefois, il n'en va pas de même pour les réformes sociales, ou celles engagées dans le cadre de l'aménagement du territoire. Donnons-en quelques exemples. Premièrement, on avait réformé le système des pensions et des retraites en Pologne, tout en laissant de côté le secteur de la santé. Deuxièmement, les privatisations menées dans le secteur énergétique, certes fort réussies, avaient partiellement évincé la question de l'équité dans le cas de la tarification. Enfin, troisièmement, confrontés à des ressources budgétaires limitées qu'ils pouvaient consacrer à la construction des infrastructures, les gouvernements successifs s'étaient tournés vers les investisseurs privés, en se souciant peu des méthodes employées et des résultats obtenus.

Dans le **chapitre 2**, en analysant le secteur de la distribution de l'électricité en Pologne, nous mettons en évidence le dysfonctionnement des autorités de régulation ainsi que les facteurs qui en sont la cause. Nous commençons avec une brève description du secteur énergétique en Pologne : la réforme du sous-secteur de l'électricité constituait l'un des plus grands défis pour l'Etat polonais à l'aube de la transition. Le passage vers les prix d'électricité qui couvriraient les coûts de la production et d'acheminement, le démantèlement des monopoles, et la création des organes de réglementation. Voici là quelques tâches auxquelles les gouvernements polonais transitoires devaient faire face pendant la première décennie de réformes, alors que les voisins de l'Ouest de la Pologne avaient mis près d'un demi siècle à les mettre en œuvre. Après avoir décrit cet environnement complexe, nous procédons à un test empirique du fonctionnement du processus réglementaire. Notre objectif est double. D'une part, comme la réglementation polonaise d'électricité est

fondée sur des simples modèles du type “price-cap”, nous souhaitons savoir si les tarifs réglementés reflètent des véritables coûts et dépenses des firmes distributrices. D’autre part, nous contribuons à la discussion très fréquente dans la littérature, qui s’interroge sur le lien entre les performances et la productivité des entreprises dans les pays en transition.

La méthodologie de la frontière de production stochastique et le modèle DEA (Data Envelopment Analysis) permettent de mesurer le niveau de l’efficience technique de quelques 31 firmes - distributrices de l’électricité en Pologne pour la période 2001-2003. Ces deux méthodes présentent des intérêts majeurs pour analyser l’efficience technique. Elles permettent en effet d’estimer l’écart entre l’activité productive observée et l’activité théorique optimale. La distinction entre les deux méthodes concerne la forme de la frontière. En fait, si l’on estime qu’elle peut être représentée de manière valide par une fonction comportant des paramètres explicites - comme la forme de la fonction de production -, l’approche adoptée est qualifiée de paramétrique. Si par contre on considère que le processus de production n’est pas de nature à se laisser apprivoiser par le carcan d’une telle fonction ou n’a pas à priori une forme fonctionnelle bien déterminée, l’approche adoptée est qualifiée de non paramétrique. Notre modèle simple de la frontière stochastique est basé sur les travaux de Battese et Coelli [1995] et l’équation dérivée prend la forme d’une fonction Cobb-Douglas. Le modèle DEA, quant à lui, s’inspire des travaux de Charnes et al. [1978]. La base de données utilisée est unique et a été construite à partir des informations provenant du Bureau Van Dijk (“Amadeus”) et de l’Association polonaise de la distribution et de la transmission des énergies. Nous présentons alors les estimations des paramètres de la fonction de production :

tous les paramètres sont significatifs au seuil de 5%, ce qui traduit un potentiel explicatif élevé du modèle. Par la suite, nous calculons des notes d'efficacité technique pour chacune des firmes distributrices ; l'intervalle de ces scores est compris entre 32 et 99 % du niveau optimal. Nous attribuons aussi des notes d'efficacité à partir des estimations non paramétriques (DEA). Cette fois-ci, l'intervalle est compris entre 32% et 100% (100% étant le niveau d'efficacité de la meilleure entreprise). Il est important de noter que le fait qu'une firme ait le score de 0,65 (ce qui est la moyenne de notre échantillon) signifie qu'elle pouvait atteindre son niveau actuel de la production en utilisant 65 % de ses inputs. En terme de réglementation, cela signifie que le " price-cap " pour cette firme devrait être basé sur le 65% de ses dépenses et coûts.

Afin de rendre cette étude plus pertinente, nous unifions les résultats obtenus par ces deux méthodes : en y appliquant les conditions de consistance de Bauer [1998] nous arrivons à établir le classement des meilleurs et des mauvaises entreprises.

Le message principal de ce chapitre est le suivant : les méthodes de " benchmarking " peuvent être appliquées à des fins réglementaires. Toutefois, au regard des effets d'efficacité technique assez médiocres pour les distributeurs polonais, ces méthodes doivent être utilisées avec précaution et être considérées par l'Etat comme des signales plutôt que comme des indicateurs définitifs des performances. Finalement, on peut voir dans ce genre d'études un moyen pour combler le déficit informationnel de l'Etat : le décideur public n'est plus dans l'obligation de s'en remettre à l'information qui lui est transmise par les entreprises, naturellement tentées de déformer cette dernière à leur profit. L'action publique n'encourt plus le risque d'être victime d'un opportunisme pré-intervention. Doté d'un mécanisme révéla-

teur, ” l’Etat - régulateur ” a beaucoup plus de chances de bien paramétrer ses interventions.

Ce chapitre contient aussi une section complémentaire, où nous esquissons la situation actuelle du service public de l’électricité. Nous débattons de l’avenir du secteur, ainsi que des menaces qui pèsent sur les usagers dans une situation de libéralisation imminente du secteur.

La deuxième étude de cette thèse est consacrée à l’Etat - fournisseur des biens publics. De par leur nature, les biens publics sont financés et produits par le secteur public. Néanmoins, l’intervention des entreprises privées dans l’approvisionnement en ces biens, ainsi que dans la gestion des services publics devient une réalité quotidienne. Ceci est vrai non seulement dans le cas des services municipaux (approvisionnement en eau potable, assainissement, gestion des déchets, transport urbain), mais aussi dans le cas des grands projets d’infrastructure (routes, ponts, rails..). L’Etat fait appel aux entreprises privées via des contrats de concession. Cette dernière pratique est amenée à se développer avec la libéralisation des industries de services publics et la recherche de nouveaux modes de gestion de ces activités, avec notamment des partenariats public-privé (PPP). Ces pratiques, très répandues dans les pays développés, connaissent depuis le début des années 80 un succès spectaculaire dans les pays en voie de développement, et les pays d’Amérique Latine en particulier. Par conséquent, les PPP ont vite retrouvé une place importante dans la pratique de l’approvisionnement des biens publics dans les pays en transition, où les gouvernements n’ont pas pu mener des grands travaux à cause de ressources budgétaires très limitées.

Dans le **chapitre 3**, l’efficacité du rôle de l’Etat dans la fourniture des biens

publics - et implicitement son impact sur la croissance économique - est analysée à partir du mécanisme d'attribution par appel d'offre de concessions autoroutières en Pologne. Nous prenons l'exemple d'une concession pour l'autoroute A2, qui devrait un jour relier Varsovie à Berlin. Pour mieux comprendre la situation actuelle des infrastructures en Pologne, nous présentons la genèse du programme des grands travaux. Nous y décrivons des plans ambitieux de constructions des autoroutes qui datent des années 1930 et qui, malheureusement, ont été anéantis à cause de la guerre, d'abord, et de l'époque communiste après. En provoquant une forte augmentation des échanges, la dynamique de la transition a réveillé la conscience des gouvernements successifs en forçant ces derniers à réfléchir sur les modes de financement des infrastructures, désormais indissociables des réformes structurelles.

Comme nous l'avons déjà mentionné, l'état du budget national a fait basculer le gouvernement sur la voie du partenariat public-privé. Malgré le succès de la première mise aux enchères en 1997, les travaux de construction n'ont guère avancé. En analysant le processus d'appel d'offre, d'adjudication de la concession et de sa mise en œuvre, nous trouvons, comme prévu, que la fourniture des infrastructures se heurte en effet à un certain nombre d'obstacles qui amènent à s'interroger sur les conditions de son efficacité. Plus précisément, nous montrons qu'il y avait un certain nombre d'erreurs, tant de la part de l'Etat (dans la coordination des organes de tutelle ou la gestion déléguée), que de la part des partenaires privés (cf. la faiblesse des fonds, ou la non-exécution des contrats). Dans ce chapitre, nous recourons à la théorie des coûts de transaction, des contrats incomplets, ainsi que de celle des enchères, afin de mettre en évidence les obstacles à la coordination de

la fourniture de biens publics par des mécanismes de marché, pour montrer que le choix du “Franchise bidding” n’est efficace que sous certaines conditions et que ce mode de coordination n’est pas envisageable en toutes circonstances. A l’instar de Crocker et Masten [1996] ou Yvrande-Billon [2004], nous insistons sur les caractéristiques très spécifiques des contrats de concessions. Nous évoquons en particulier les hypothèses comportementales propres à ce type de contrat (rationalité limitée, opportunisme), l’objet dont ce dernier relève (présence d’actifs spécifiques dans un environnement incertain et complexe). Enfin, nous confrontons une contractualisation incomplète à une contractualisation “prévoyante”. D’ailleurs, nous traitons le problème de la supervision de l’exécution du contrat de la concession ou, plus généralement de la gestion déléguée, dans le cadre du modèle de Calvo et Wellisz [1978]. Ce dernier se révèle être d’une grande aide pour comprendre la mécanique des solutions incitatives qui peuvent être appliquées pour réduire le risque potentiel d’opportunisme chez le concessionnaire.

Dans la dernière partie du chapitre, nous présentons le programme de construction des infrastructures en Pologne dans une optique élargie du “Réseaux Transeuropéens de Transports”. Nous regrettons le fait que l’axe de transport Est-Ouest ne fasse pas partie des priorités de développement pour l’Union Européenne (UE) dans les années à venir.

Nos réflexions sur le concept du PPP nous permettent de prolonger le débat sur la participation du secteur privé dans les domaines d’activité dont la fourniture et la gestion, tout comme les retraites, les pensions ou les services de la santé, ont été historiquement assurées par l’Etat. Dans le **quatrième chapitre** de la thèse,

nous nous intéressons à ce dernier domaine en proposant une analyse approfondie de la réforme du système de santé en Pologne.

Contrairement à la plupart des pays en développement, les pays en transition avaient un secteur social déjà bien développé avant que la mutation ne commence. Leurs filets de sécurité sociale couvraient les mêmes risques que les régimes d'assurance maladie et les programmes de transferts en vigueur dans les pays développés. De plus, des ressources très substantielles étaient allouées aux soins de santé et à l'éducation. En revanche, les structures institutionnelles qui garantissaient une protection universelle "du berceau à la tombe" avaient été conçues pour un système économique radicalement différent. Incompatibles avec les mécanismes d'incitation propres à une économie de marché et mal préparées à supporter les pressions liées au passage vers ce type d'économie, les institutions et les politiques sociales en place ont été fortement mises à mal par le processus de transition.

La mise en place d'un nouveau système de soins de santé efficace, équitable, accessible et attentif aux coûts est une tâche difficile pour tout pays, et plus encore pour ceux en transition. En effet, depuis plus d'une décennie, ces pays s'efforcent à mettre en œuvre une réforme des soins de santé. Même si les progrès ont été lents et partiels, quelques changements importants ont été apportés ces dernières années. Pour que ces actions se révèlent efficaces, il faudrait que les mentalités et les habitudes évoluent, non seulement chez les praticiens, mais aussi dans le public. Tout cela demande du temps. Néanmoins, les gouvernements de ces pays, y compris la Pologne, ont reconnu l'importance de l'assurance-maladie privée, qui devrait constituer une composante majeure d'un futur système de santé efficace. L'émergence des couvertures-maladie privées va de pair avec une croissance soutenue de la



classe moyenne, qui est prête à consacrer une partie de ses revenus disponibles à des mutuelles-santé complémentaires. Les pouvoirs publics peuvent y voir un moyen de compléter les financements publics qui permettraient d'accroître la capacité du système de santé, ou de réaliser d'autres objectifs de la politique de santé, tels que la responsabilisation des individus relativement au financement des soins.

Il est important de souligner que la mise en place d'un nouveau système d'assurance-maladie est un défi très complexe, nécessitant des moyens financiers et techniques considérables. Toutefois, nous pensons qu'une étude préalable relative à l'estimation de la demande d'assurance-santé privée permettrait de mieux évaluer les besoins de la population et de simuler les conséquences des politiques économiques diverses.

Ce dernier chapitre commence avec une brève description de l'actuel système de santé en Pologne. Afin d'examiner les facteurs qui influencent le choix d'un fournisseur de services médicaux, notre cadre d'analyse économique est basé sur le modèle de la demande pour les soins médicaux, dont l'utilisateur est amené à faire le choix entre le service public et son alternative privée (modèle de Goddard et Smith [1998]). Avec cette spécification-là, nous avons la possibilité d'observer l'impact de plusieurs facteurs (revenu, prix, qualité) sur l'arbitrage du demandeur entre les services de santé publics et son alternative privée. Nous avons aussi la possibilité d'évaluer le rôle de l'Etat comme prestataire des soins : en déterminant des failles dans le système, nous pouvons constater si le secteur privé en est complémentaire ou substituable.

Nous utilisons la base des données " Social diagnosis : objective and subjective quality of life in Poland", fournie par Le Conseil Polonais de Monitoring Social.

Cette base renferme des données d'enquêtes-ménages extrêmement riches sur les revenus, le logement, l'éducation ou la santé par exemple. Elle contient aussi des appréciations individuelles sur la qualité de vie en Pologne. La partie " Santé" est exhaustive, ce qui nous permet de déterminer - entre autres - le nombre de fois où l'individu a eu recours aux soins médicaux, de quel type de soins il s'agissait, qui finançaient ces soins, quelles étaient les raisons pour lesquelles l'individu se voyait obligé de renoncer aux soins, quel est le poids des dépenses de santé dans les budgets familiaux. La méthodologie utilisée est celle du modèle de logit multinomial. Parmi des nombreux atouts que représente cette spécification, nous apprécions son aspect dynamique. Conjugué à nos données détaillées, nous pouvons alors déterminer si l'utilisation des services privés était la conséquence de l'utilisation de ces soins dans le passé. De même, nous pouvons aussi savoir si la demande pour un soin particulier privé est " dopée " par la demande pour les services complémentaires.

Les résultats de notre étude révèlent un intérêt considérable de la part de l'ensemble de la population pour les services médicaux privés. Cette forte demande s'explique par les faiblesses du système public, qui se heurte à l'insuffisance des moyens financiers. Or, cette situation, parfois précaire, est à l'origine des listes d'attentes pour les soins spécialisés, qui ne peuvent plus être dispensés, faute d'équipements et de personnel. Nous constatons que les soins privés sont de plus en plus sollicités parce qu'ils sont disponibles immédiatement. Le prix ne constitue pas une barrière d'accès aux soins et ce, même pour les patients avec des revenus modestes. Bien que les services médicaux privés soient plébiscités, les patients se montrent très sceptiques par rapport à des assurances-santé complémentaires. Il nous semble que les futures pistes de la politique gouvernementale vont s'orienter vers un "panier" de soins gratuits pour tous, et son complément payant pour les interventions

spécialisées. Cependant, pour qu'un tel système fonctionne, il est nécessaire d'avoir des assurances-santé développées et accessibles à tous les patients, même aux plus démunis. Finalement, aucune amélioration n'est possible sans qu'une hausse des revenus du personnel de santé ne soit garantie. Le nouvel environnement sans frontières au sein de l'Union Européenne pourrait provoquer - si ce n'est pas déjà le cas - un reflux massif des professions médicales vers le pays où les salaires sont beaucoup plus élevés.

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Après le débat doctrinal sur les visions de l'Etat dans le chapitre préliminaire, nous abordons - de manière objective et consensuelle à la fois - le fonctionnement de l'Etat à l'époque de la transition. En prenant l'exemple de Pologne, nous montrons, à trois reprises (chapitres 2 à 4), l'action publique face au marché et aux besoins de citoyens, avant d'apporter des éléments de conclusion et d'évoquer quelques pistes de recherche.

# Chapitre 1

## Reconciliation between market and competition : letting the State intervene

*“[L’Etat] à qui l’on demande de fournir de façon effective un cadre à l’intérieur duquel peuvent se former les ordres autogénérés. Loin de plaider pour un tel “Etat minimal”, il nous apparaît hors de doute que dans une société évoluée le gouvernement doit se servir de son pouvoir fiscal pour assurer un certain nombre de services qui, pour diverses raisons, ne peuvent être fournis, du moins adéquatement, par le marché.” (Friedrich von Hayek [1983], p.167)*

*“Collectivism - the belief that the state knows better than the market, and can improve on the spontaneous tendencies of civil society, if necessary by suppressing them - has been the most egregious error of the twentieth century ... My contention is that this belief in the superior wisdom of the state breeds pathologies which deform, and at the limit destroy, the political economies based on it.” (Lord Skidelsky [1995], preface, p.xiii)*

## 1.1 Introduction

MANY scholars agree that transition as a *sui generis* problem is over in Central Europe. This does not mean, however, that all transition economies are already in a state of bliss. In some, particularly successful states like Poland, a lot of work needs to be done to make them prosperous.

While economic literature on transition put much attention on privatization and market's liberalization issue, much less voices underlined the role of the state in transformation processes. The evidence is that in those countries the state had to reduce its role as entrepreneur and financier. This was necessary, but not sufficient. Private monopolies can be as inefficient, abusive and disrespectful of public interests as state monopolies, particularly when the law is unclear, regulators pliable and politicians cooperative.

In Western economics there is a consensus on the minimum responsibilities of the state : law, order and safeguard of justice across generations and all segments of society. This includes healthcare, education, physical infrastructure and the pension system. Beyond that, there is wide scope for ideology and party-line disagreement. Some very dynamic and successful economies, such as the Scandinavian countries, have an institutional framework that assigns much more than the minimum to the state. Compared to the United States, European states take a greater responsibility in all these domains and “do a reasonable job”(Gros et al.[2004]). Utilities or physical infrastructure are not predestined to be better managed in the private sector. They can be mismanaged in either.

Nowadays only few deny the necessity of public intervention in economy. Similarly, few deny the necessity of markets and competition. Therefore, the best way

seems to be a mix of public/private ingredients in economic policy.

This first chapter of our dissertation will provide readers with economic theory concerning reasons of public intervention in economy. The main aim is to set out the economic theory of state intervention, with particular emphasis on why intervention might foster efficiency, affect social justice and influence on overall welfare.

## **1.2 Motives of public intervention**

### **1.2.1 Intervention for reasons of efficiency**

#### **Types of intervention**

The state can intervene in four ways : regulation, finance, public goods provision, which all involve direct interference in the market mechanism ; and income transfers, which may have indirect effects.

- Regulation

Governments can regulate the price, quantity and quality of products sold by for-profit firms, as well as the inputs required for production. In principle, regulators could affect all markets to operate optimally. The large number of violations and their geographical distribution would require regulators to be active throughout the economy, from the goods-producing industries to diverse services delivered in numerous establishments and localities. However, regulation does not affect the firms' objectives, and usually affects their incentives only through the acquisition of information (continuously, periodically, or through random sampling, such as unscheduled inspections) to

set price, quantity and quality standards. Regulators face a severe handicap of asymmetric information relative to the regulated firms. For example, to control market power, regulators need to know almost everything that concerns costs and production of every regulated firm. To deal with the information condition, regulators must not only know what companies actually do, but also why they do what they do, and how else they could operate. To be carried out, the regulatory function effectively requires a daunting amount of information, a large number of expert regulators to gather and analyze the information, as well as a cadre of regulators' counterparts in firms. These heavy and often unattainable requirements limit considerably the effectiveness of the state's regulatory functions in many instances where it might be needed.

– Finance

Finance involves subsidies (or taxes) applied to the prices of specific commodities or affecting the incomes of individuals. Price subsidies affect economic activity by changing the slope of the budget constraint facing individuals and firms. They can be partial (e.g. public transport, local-authority housing for low-income part of population) or total (e.g. free pharmaceutical drugs for elderly war's combatants).

– Public good provision

As exposed in Stiglitz [2006], one of the reasons why public goods<sup>1</sup> are typically provided in the public sector is that if there is no public sector provision, then there will be an under-supply. Similarly, one of the standard arguments why private goods are provided by the private sector is that if markets are

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<sup>1</sup>For detailed description, please consult Box no.1 at the end of this chapter.

working well, then the market provision of those goods is efficient. However, it is important to emphasize that, generally, there is a market failure whenever a public good is involved. The reason why no adequate supply of these goods is available is often formulated as the free-rider problem :

...if I cannot be excluded from the non-rivalrous benefit of the publicly available good, why should I pay? I shall free-ride on the provision of others. Since everyone has an incentive to free-ride, there is a strong tendency towards under-provision of public goods (Touffut et al.[2006]).

The state's role in providing public goods is also concerned with the provision of collective-action components. Since other actors are also involved in delivering of these components, the question is whether it is possible to discern any specificity of state's role in public good provision. It seems that the state's role differs from that of other actors in at least three important respects. First, the state typically supports a diverse range of public goods. At least in democratic nations, the state is the institution expected to facilitate - through electoral and legislative processes - an aggregation of social preferences, including a bundling of the preferences of different population groups for various public goods. In contrast, other actors tend to intervene on a more issue-specific basis. This is not necessarily to make the government provide a public good that they prefer, but to ensure that the public goods to which they attach high priority also rank high on the government's list of issues to be promoted. Secondly, being the "laws' guard" and making the state responsible for establishing norms give a very special coercive role to



the state. Non-state actors can engage in self regulation, or they can help promote consensus around certain norms (Cutler et al. [1999]). In order to make such norms compulsory and enforceable, however, they ultimately have to rely on the state and its regulatory powers. Finally, state agencies may be better-suited provider where the delivery of public good is difficult to observe (the quality of education imparted to students, for instance) and, hence, difficult to monitor, verify and contract out. Government, as well as non-state, non-profit organizations, may also have an advantage over private, profit-seeking providers, where opportunities for pecuniary rewards are limited, and where the provision of the good may depend more on workers being motivated by social concerns. On the other hand, where a task is unidimensional and calls for innovation and entrepreneurship, private provision may be preferable (Kaul [2003]).

– Income transfers.

Income transfers can be tied to specific types of expenditure (e.g. education vouchers) or untied (e.g. social-security benefits). These transfers take the form of a lump sum, and therefore affect economic activity by changing the incomes of the individuals, with no extra-market effect on product or factor prices.

### **The assumptions under which markets are efficient**

Economic efficiency (Pareto efficiency) is about making the best use of limited resources given people's tastes. It involves the choice of an output bundle

$$X^* = (X_1, X_2, \dots, X_N) \tag{1.1}$$

where  $X_i$  is the output of the  $i$ th good with the property that any deviation from these quantities will make at least one person worse off. The “invisible hand theorem” asserts that the market clearing set of outputs,  $X_M$ , will automatically be the efficient output bundle  $X^*$  in equation (1.1) if and only if a number of assumptions hold. These assumptions concerns perfect competition, the absence of market failures and perfect information. When all these assumption hold there is no justification for intervention for efficiency reasons, but if one or more fails the resulting market equilibrium may be inefficient, and the state intervention in one of the forms described above may be appropriate.

– Perfect competition

Perfect competition must hold in product and factor markets as well as in capital markets. The assumption has two essential features : economic agents must be price-takers and they must have equal power. *Price-taking* implies free entry and exit into/from an industry with a large number of consumers and firms, none of whom is able to influence market prices. Where this assumption fails (e.g. in the case of monopoly), intervention involves regulation, like price ceiling, or an appropriate mix of taxation and subsidy. *Equal power* is violated by any difference in the ability of individuals to choose their consumption. When this assumption fails, solutions, if they exist, are also based on regulation.

– No market failures

Markets “fail” when it is possible to make one person better off without making someone else worse off, thus indicating some degree of inefficiency. In economics parlance, Pareto optimality has not been achieved. “No market

failures” assumption can be violated in three major ways : public goods, external effects and increasing return to scale.

- In addition to what we have said before about public goods, Kaul [2003] suggests that the state should correct this market failure because it is rare that another actor can match the government’s financial allocations to public goods. Its special financial role is linked to its unique coercive powers, including its power to tax and to take make, if deemed desirable, everyone contribute to its expenditure programmes. On the other hand, as claimed by Winston [2006], governments “fail” when an economic intervention proves to be unwarranted, either because markets are performing adequately or public policy does not correct a market failure efficiently. In such cases, government intervention may actually exacerbate a problem or produce unintended negative result.
- External effects arise when an act of individual A (that is to say his production or consumption) reduces the welfare of individual B, for which no compensation or payment from A to B takes place. The effect of externalities is to create a divergence between private and social costs and benefits. Literature has proven that the market can resolve this inefficiency itself. Coase [1960] shows that, where the law assigns unambiguous and enforceable property rights, the externality problem can be solved by negotiation between the parties concerned. But this is not always possible. For instance, in the case of air pollution (property rights are not enforceable), state intervention may be justified by an appro-

priate tax (referred to as Pigovian tax) on the activity generating the external cost. (Stiglitz)

- Increasing returns to scale. This situation occurs when doubling all inputs leads to increase more than twice the output. In this case, the competitive analysis of market behavior breaks down for two reasons : (i) the industry would end up as monopoly, and (ii) the private sector could not profitably sustain marginal cost pricing. If the state does not intervene, the society suffers the welfare loss, but gains whatever innovative advantages the monopoly might have due to its size. On the other hand, the state can regulate the monopoly by prescribing its price or rate of return. The state can also operate the monopoly as a public company.

– Perfect information

The analytical key is the twofold literature on imperfect information. One strand analyzes the effects of imperfect information about quality : consumers might be badly informed (e.g. about the quality of a car), so might producers (e.g. about the the riskiness of an applicant for insurance). The second strand, imperfect information about price, covers topics like search theory and reservation wages<sup>2</sup>. In the case of imperfect information, several solutions are possible : the market itself may develop institutions to supply information (e.g. consumer magazines) or the state may respond with regulations (hygiene laws in the case of food). Where information problems are serious the market might be so inefficient that public production may be a better answer. As underlined by Barr [1992], individuals need perfect infor-

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<sup>2</sup>The quality literature has its roots in seminal articles by Arrow [1963] and Akerlof [1970]. For a detailed survey of this literature see Stiglitz [1987] ; for a survey of the literature on imperfect price information see Mortensen [1986].

mation also about the future, so as to make rational choices over time. The market can fight against uncertainty through the mechanism of insurance. But private insurance can be inefficient or impossible, largely because of information problems in insurance markets. Thus some risks are not insurable (e.g. unemployment) . In such cases public funding may increase efficiency.

### **1.2.2 State and Services of General Interest's provision (SGI)**

As it was mentioned above, there is a consensus that the state should provide public goods. In Europe, the role of states results from conceptual heritage of *XIX<sup>th</sup>* century. In the case of service network industries, public intervention was imposed when reality abundantly revealed the deficiencies of the market. Thus in the inter-war and post-Second-World-War periods, public organization of networks into natural monopolies was put in place within national frameworks, each according to its culture and the principles forged by economic theory (Allais, Boiteux...).

#### **SGIs as essential services at the level of public goods**

Our societies consider certain services (human activities based on a person-to-person relation) as essential for individuals, communal life or development. Christianity elaborated a notion of the common good necessary for the flourishing of the person. Humanism in France led to a notion of public service, a doctrine and duty of the state (Duguit [1921]). In Germany, *Daseinsvorsorge* is based on social philosophy. Amartya Sen [1984] renews this heritage in designating certain services (education, health) as necessary for individuals to exercise their freedom in a so-

ciety.

There is no general definition of public goods that is accepted in the area of SGIs. Nevertheless, Herzog [2003] stresses that the conception of a public good always appeals to the principles of non-market exchange (sharing, solidarity), whether mixed or not with the principles of market exchange. In current debates, two dimensions of SGIs are often emphasized : (i) economic - the activities involved have increasing returns. The more service is provided on the network (infrastructure), the more unit costs diminish ; (ii) social - equal access and universal inclusion necessitate rebalancing, from the inexpensive zones to the expensive ones.

SGIs are services for which there exist markets, but for which there are also specific obligations of public services. These specific obligations require a supervisory public authority. Two types of SGI can be distinguished : those that can be provided by private operators that are subject to regulation, and those that are more difficult to provide through markets, in particular when a situation of natural monopoly persists : the cost of production is less when it is evaluated by a single firm because of significant fixed costs/network activities or because there are significant network effects (positive externalities). Then the problem is that the pricing structure chosen by the monopoly is higher than effective marginal cost pricing. Thus, either marginal cost pricing can be imposed, and the monopoly subsidized (running the risk of no incentive to rationalize) or, a second-level optimum with average cost pricing can be chosen. Finally, a system of cross-subsidies can be put in place between those services.

## **Financing SGIs**

In most network SGIs, the existence of a natural monopoly leads to the separation of the network activity from the management and use of networks that can be provided by competing private operators. The cost of this separation is the risk of bad coordination between the network manager and the service providers, the difficulty of defining network access pricing and arbitrating between insufficient competition among service providers (prices are too high) and excessive competition (investments are too low). As remarked by Artus [2006], one should consider the financial problems linked to the provision of SGIs. These are of two sorts : (i) which of SGIs should be provided by the state and which of SGIs should be market-provided ; (ii) Modern SGIs require considerable infrastructure investment (utilities, health). These investments are increasingly financed by public-private partnerships (PPP). Thus, is PPPs' development desirable? Although there are no simple answers to these questions, it is important, however, to underline the role of state financial institutions, namely state banks, which enjoy state guarantees for SGIs' financing.

### **An overview of the concept of SGI under EU law**

The European Union Treaty does not include as a Community objective the provision or the organization or the financing of SGIs, and therefore does not assign specific and explicit powers to the Community in the area of SGIs. Except for a sector-specific reference in the area of transport<sup>3</sup>, services of general economic interest (SGEI) are referred to in Articles 16 and Article 86(2) EC. Furthermore,

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<sup>3</sup>See Art 73 TEU.

according to the Charter of Fundamental Rights of the European Union, the EU recognizes and respects access to SGEIs, in order to promote the social and territorial cohesion of the Union<sup>4</sup>. Although Article 16 EC confers responsibility upon the Community and the member States to ensure, each within their respective sphere of competencies, that their policies enable SGEIs to fulfill their missions, it does not provide the Community with specific means of action. On the other hand, Article 86(2) EC implicitly recognizes the right of the Member States to assign specific public-service obligations to economic operators. It manifests a fundamental principle ensuring that SGEIs can continue to be provided and developed in the common market. The concept of SGIs is a surrogate notion of the SGEI. However, its remit is broader and covers both market and non-market services which the public authorities regard as being of general interest and subject to specific public service obligations by virtue of general interest criterion. It thus covers certain services provided by the big network industries such as transport, postal services, energy and communications, but also extends to any other economic activity which is subjected to public service obligations<sup>5</sup>. The economic nature of SGIs is reflected in the Community's attempts to achieve a gradual opening of the markets for large network industries such as telecommunications, electricity, gas and transport in which SGIs can be provided. The Community has adopted a comprehensive regulatory framework for these services, which specifies public service obligations at European level and includes aspects such as universal service, consumer and user rights, health and safety concerns.

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<sup>4</sup>See Art 36 of the Charter of Fundamental Rights.

<sup>5</sup>The term "public service obligations" denotes specific requirements that are imposed by public authorities on the provider of the service in order to ensure that certain public interest objectives are met, for instance, in the matter of air, rail and road transport, and energy. For a detailed description see Bremond [2003].



### **1.2.3 Intervention for reasons of social justice**

Economic literature sets out broad explanations of why redistribution occurs. To libertarians it is enforced on the rich by the voting power of the poor (Downs [1957], Tullock [1970]). Since the income distribution in most countries contains relatively few people with high incomes and many with lower incomes, governments maximize votes by redistributing from the rich who, in turn, gain the votes of those with lower incomes. The logic of the argument is that the system will redistribute towards equality. On the other hand, utilitarians argue (Hochman and Rodgers [1969] that the rich may choose out of altruistic motives to vote for political parties which propose to tax them more heavily to finance redistributive policies.

As there is no clear and constructive consensus on redistribution questions (cash or in kind), we only point out the implication of those literature on tax policies. Neither we develop the discussion between socialist and “Rawlsians” on equality of redistribution.

### **1.2.4 Public choice and government failure**

Public choice literature addresses four explanations of the extent and growth in government activity. In addition to the “market failure ” breakdown and income-distributor roles, public choice literature analyzes the response of government to the electorate in the form of coalitions of voters or trough pressure groups, and the role of bureaucrats. The government-failure arguments point to the latter two as important distorting influences. The essence of the argument is that government actions are based on self-interest rather than on maximizing social welfare.

The influence of the electorate operates in various ways. Buchanan and Tullock [1962] and Tullock [1971] argue that most transfers from the rich are captured by the middle class through their electoral power as median voters or acting as interest groups. Interest groups use their lobbying power to bring about redistribution also through regulation. It is argued that regulators are frequently “captured” by those whom they are supposed to regulate (Stigler [1971], Posner [1975], Pelzmann [1976]). According to this view, regulation is an entry barrier which allows the extraction of monopoly rent. Distortions can arise also within government. Public agencies may partly be run for the benefit of the bureaucrats who run them (Niskanen [1971]). This occurs because politicians cannot fully monitor the actions of utility-maximizing officials. These insights, however, should not be overstated. For instance, regulation may result in monopoly rents but, as discussed in 1.1.2 section, it also serves to protect imperfectly informed consumers. The power of bureaucrats can be overstated and their motivation misunderstood (Dunlevay [1985]). Finally, organizational slack may be pronounced where the state rather regulates private activity than public production (for instance, countries where private, fee-for-service medical care is publicly funded find it more difficult to contain costs than those with public production).

### **1.2.5 The issue of privatization**

The majority of scholars agree that the concept of privatization is not simple. A good can be financed publicly or privately, and it can be produced in either sector. Traditionally, we can mark out four situations. Goods like food are generally produced and financed by private sector. At the other extreme, most school educa-

tion is produced publicly and financed by taxes. There are two intermediate cases left ; for instance, public transport is produced in the public sector but financed by charges on the private sector. Finally, some goods might be produced privately and sold to the public sector (e.g. healthcare services). This simplified vision, unfortunately, cannot be of much use. In reality, markets are never purely private (e.g. food is subjected to quality regulation and its price might be distorted by subsidies). Furthermore, food may be freely provided (e.g. free school meals). Nor are many pure cases of free public provision (e.g. drug prescription). To clarify the situation, we propose to distinguish : (i) in which sector production takes place, (ii) which sector finances it, and (iii) the influence of regulation on decisions about production and consumption. These are illustrated in the Table 1.

TAB. 1.1 – A view of public and private provision

Type of allocation	Production	Regulation		Finance	Examples
	1	Decision about production 2	Decision about individual consumption 3	4	
Pure private	Private			Private	Food purchased out, non-transfer income
Private market + state finance	Private			Public	Overall consumption of privately- produced goods purchased out of transfer income, Medicare in the US
Private market + regulation					
(i) regulation of individual consumption	Private		Public	Private	Mandatory automobile insurance
(ii) regulation of total supply	Private	Public		Private	Healthcare in Canada
Private production, state regulation and finance					
(i) supply wholly private	Private		Public	Private	Education vouchers
(ii) total supply determined be state	Private	Public	Public		Inputs for public healthcaare and national defence
Public production, private allocation and finance					
(i) total supply determined by private demand	Public	Private	Private		Public transport
(ii) supply wholly public	Public	Private	Public		Complimentary healthcare
Public apart from private finance	Public	Public	Public		Mandatory civil insurance
Public apart from private consumption decision	Public	Public	Private	Public	Post-compulsory education
Pure public	Public			Public	National defence

Source : Barr [1998], p.96

As we can see, libertarians would favor private production under column (1), producer and consumer sovereignty under columns (2) and (3), and private finance under column (4). They would therefore choose row 1 or, failing that, the private market underwritten by income transfers, shown in row 2. Thus, privatization can be seen as an upward movement in the table from a lower line to a higher.

The privatization issue takes a completely new dimension in the transition and/or development countries.

### **Privatization process in transition countries**

With the breakup of the Soviet Union and the start of market-oriented reforms in many former socialist countries (FSC) of Central and Eastern Europe, the prospect of privatizing inefficient state-owned companies figured prominently in both popular and academic writings<sup>6</sup>. The economic program of the first post-communist governments addressed privatization issues in the context of the creation of market institution which had stood the test of time in Western economies.

As Stressed by Andreff [2005], four objectives were assigned to FSC privatization programmes :

1. Systemic change through new ownership arrangements ;
2. Social objectives : privatization should be welfare-improving in redistributing the existing wealth across the population ;
3. Economic efficiency : privatization is supposed to increase economic efficiency, both market allocative efficiency and X-efficiency in firm organization and management ;

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<sup>6</sup>For a detailed review of privatization literature see Gouret [2007]. For an overall assessment of privatization in transition countries see Nellis [2002]

4. financial targets : selling state assets serves to finance social expenditures and new pension plans and reduces the fiscal deficit.

Thus, the main privatization goal was of systemic character : to contribute to the change of the economic system through creation of private entities. Within the framework of this goal, a number of sub-goals existed, of which the most important was the creation of well-functioning markets, including a securities market. Apart from this purely systemic role, privatization's goal was to solve the problem of microeconomic efficiency of state-owned enterprises; this in turn, contribute to the rise in productivity of the whole enterprise sector. Although never officially formulated, there was another goal, of crucial importance : to make the whole reform process smooth, stable and irreversible. Privatization was expected to create not only incentives for economic development, but also create powerful pro-reform lobby of actors, involved in privatization process and using its results. Finally, privatization was viewed as a tool for solving a wide set of social problems. On the one hand, attempts were made to attain a kind of social justice (via distribution of part of the privatized stock among the whole population and, additionally, by creating preferences for certain groups who were felt to deserve such entitlements). Sometimes, attempts were made to use privatization to resolve the social problems in concrete enterprises by imposing on the buyers some obligations concerning employment, wages, etc.

It should be remembered, however, that as soon as privatization has more than one objective, it is doomed to fail. Andreff [2005] strongly underlines :

“The Timbergen theorem has demonstrated that, for any economic policy to be efficient, it must encompass exactly as many objectives as

the policy tools at hand. If economic efficiency were the objective, FSC policy makers should have foregone fiscal and socio-political objectives. If the target is to bail out the State budget, then forget economic efficiency and political issues. If the priority is withdrawal of former communist managers, then give up any economic objective.” (p.196)

Thus, the “tool-objective” matching is linked to the mode of privatization. Practically speaking, only mass, non-equivalent privatization can guarantee rapid, radical changes in the formal ownership structure of the economy. On the other hand, however, this model of privatization carries the risk of weak corporate governance and has definitely no opportunity to inflate fiscal receipts. Privatization designers reach a fiscal or financial objective better with asset sales, but they cannot create widespread popular shareholding. If they avoid share sales, they will have to maintain insider control over the enterprise.

Another important dilemma concerning privatization procedures is the pace of privatization. If fast privatization fulfills the equity, its effects on restructuring are usually insignificant. In contrast, a slower pace of privatization processes may result in more efficient corporate structure. At the same time, however, slower privatization may be arrested by political decisions before its completion.

### **1.2.6 Drawing the borderlines between state and markets**

We have seen before the efficiency arguments for state intervention. We have seen also the government failure counter-arguments. Markets can be efficient or inefficient ; so can governments. Thus market failure is a counterpoint to government failure. This conclusion is crucial for policy goals. Therefore, it is important

to make a clear distinction between the aims of policy and the methods to achieve them. Aims include social justice and economic efficiency (the definition of social justice varies with different theories of society while economic efficiency has broadly the same meaning in all theories of society). Methods embrace income transfers and direct intervention in the market through regulation, finance and public production. The resulting form of economic organization, at one extreme, is the free market (with or without redistribution) and, at the other, central planning and public production of all basic goods and services. In between, there are different types of mixed economy involving both private markets (with or without intervention in the form of regulation and finance) and public production.

Whatever literature might say about the distinction between state and markets it is clear that this frontier deteriorates. As a result, there has been a rapid worldwide spread of New Public Management movement since the late 80s. as well as a constant growth in New Institutional Economics literature. Both focus on the efficiency goals and emphasize the crucial role of a choice of (possibly the best) “governance structure” for a given type of transaction <sup>7</sup>. Thus, “Make-or-Buy” decision becomes the central criterion about resource allocation.

### **1.3 State and Market Transition**

Adam Smith’s thesis that the natural human propensity to “truck, barter and exchange” would automatically lead to market exchange system has been empirically rejected by reformers in transition countries. Thus, an effective government is a necessary condition for successful systemic changes.

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<sup>7</sup>For a detailed exposition of NIE-related issues see Ménard [2005]. For NPM literature review see Reichard et al.[1998]



The first reason for active role of the state is that voluntary transactions cannot take place in an institutional vacuum. A market economy cannot exist without effective legal, administrative and regulatory institutions maintained by the state. Institutions are needed to perform, at a minimum, the following functions :

- to define property rights,
- to enact a system of laws,
- to enforce contracts,
- to collect taxes,
- to oversee banks,
- to promote and preserve competition,
- to provide entrepreneurs with information that reduces uncertainty, cuts transaction costs and secures private sector confidence in making investment decisions,
- to provide a legal framework such as the disputes between agents can be resolved within. Such institutions provide stability and certainty necessary for facilitating efficient economic transactions. Historically, the creation of national markets coincided with the constitution and expansion of such state institutions in the West. Late developers in the Third World often failed to create functioning market systems and thereby resorted to interventionist regimes not because their governments were too “strong” but rather because their governments were too “weak”. A weak state could be very intrusive, but at the same time, it could hamper to construct effective legal and regulatory institutions.

“There is no evidence that under conditions of administrative weakness it is harder to create and regulate functioning national markets in goods, labor and finance than it is for government to manage the bulk of production itself.” Chaudry [1993], p.253

In this sense, simply shrinking the state will not produce the efficient market systems. To create competitive markets, new state institutions must be established and strengthened to perform the task of indirect regulation and administration, which is much more delicate and difficult than direct control.

Market institutions cannot spring up automatically. Some people believe that market institutions would spontaneously emerge from voluntary transactions between economic agents if the state stands aside. This has never happened before and we have no reason to believe that it is going to happen now. Market institutions, in a sense, represent the essential minimum of public goods that must be provided if markets are going to work at all (Garnaut [1991]). Since they are public goods, people are unlikely to cooperate voluntarily with one another to provide them, just as they would not in regard to the provision of other kinds of public goods. It is clear that if the state does not provide market institutions, private economic agents would have to develop some informal rules to stem uncertainty and introduce some level of predictability into commercial transactions. In the absence of state intervention, however, these arguments are likely to evolve into pacts neglecting the interests of consumers and small producers, and reflect only the preferences of those who enjoy economic power. Thus, thought as public goods, market institutions initially have to be brought about by non-economic forces.

Even after the establishment of market institutions, the state still cannot stand aside. Individuals have incentives to break rules, to corrupt the legal basis of market

exchange, to collude in anti-competitive ways, to misrepresent the nature of assets which are the subject of contracts, etc. Enforcement costs of market-conforming behavior can be extremely high. In countries where there are already cultural and ideological support for self-restraint in maintaining the market rules, enforcement of market-conforming behavior would be lower. However, in countries where the market economy is still in the making, it is necessary to have more explicit, extensive and expensive enforcement of the rules by a strong state.

One has to remember also that the market transition is rather a conflictual than consensual process. As indicated above, the market economy is not just embedded in state institutions, it also has its ideological and moral basis, which is what the economy in transition is lacking. Neoclassic economists' assumption about the human motivation may enable them to generate sophisticated models, but the simple fact is, as Libenstein points out, people's behavior has often been influenced by habits, conventions, work ethics, partial calculation and inertia (Arndt [1988]). When a great institutional change occurs, they often find it hard to adapt. In the case of market transition, people would not accept market values and behave according to market rules simply because the government has announced that their country has adopted the model of market economy.

Furthermore, the market transition involves not only the transformation of norms and values but also the redistribution of resources and power. The transition may provide some social groups with opportunities of upward mobility, depriving others of traditional privileges. The transition is also likely to create inequalities in income and wealth that do not match existing patterns of entitlements, status and power. In a nutshell, the transition tends to dislocate groups in both the political

and the economical realms, which would inevitably give rise to social conflicts and political struggle.

In former socialist countries transition to market economy, as many studies have predicted,

“whatever their long-term consequences, in the short-run reforms are likely to cause inflation, unemployment, and resource misallocation as well as to generate volatile changes of relative income” (Przeworski [1991]).

It implies that some people will gain much more than others. The issue is thus who will get what, how much, when, and who will bear the costs. The government of course can use its coercive power to impose the costs on certain social groups. In order to have a relatively smooth transition, however, it is better for the state to adopt measures alleviating transition pains by establishing new safety nets and, doing so, compensating those whose interests are threatened by the reform. This is a very expensive undertaking. The state has to be strong enough to amass sufficient resources for redistribution.

## **1.4 Reforming the welfare state : unfinished business of transition**

Development of the new system in the transition countries over the past sixteen years has been characterized by the lack of consistency between economic and social reforms. While economic reforms were very much market-oriented and introduced in a rather dramatic way, the social area has not been sufficiently defined. Major

political circles and most eminent experts of the region believe that the socialist welfare state should be improved, updated, but not eradicated or even excessively constrained. A small group of policy makers and experts, usually with an economic background, holds the view that the social policy should undergo complex reforms. As remarked by Golinowska [2001], this is synonymous with transposing the old slogan coined by the trade unions in the early 80s : “yes to socialism, no to distortions” into “yes to the market, but no to the market distribution”. Nevertheless, several major market-based institutional solutions were introduced in the social security area at the turn of the millennium. The initial transition is sometimes referred to as “the state of reactive social reforms” (Horstmann et al.[2004]), a term indicating a reaction to consequences of the departure from the doctrine of total employment and labor market efficiency, as well as a reaction to the anticipated increase in poverty. As a direct response to new social problems, an institutional infrastructure for labor and social assistance was developed. In this reactive stage, there were also spontaneous reactions, which moved the socialist welfare state in the direction of privatization and commercialization. On the one hand, a crisis in production and public expenditure reduced funds available for social services, and on the other, the bias towards microeconomic efficiency compelled businesses to limit social activities. However, policy makers and experts have never openly and seriously discussed the new social policy model adjusted to evolving economy.

Welfare state reforms in post-communist countries are necessary. However, we strongly claim that it is not possible to reject all the features of the former system. This is mainly true from the social standpoint. It should be remembered that socialist welfare state gave everybody a sense of security and peaceful existence within the community of an enterprise, which despite of low wages managed to

satisfy the basic needs of individuals. Furthermore, a co-existence of different perceptions and assessments of the socialist welfare state led almost all countries of the region to a conviction that it is possible to combine market economy with a modified model of the socialist welfare state.

## 1.5 Conclusion

The transition, by definition, aims at gradually establishing the market as the central mechanism of resource allocation. In the course of transition, however, we should avoid what Galbraith calls “simplistic ideology” (Galbraith [1990]), what Przeworski calls “neoliberal fallacy”(Przeworski [1992]), or what Kornai calls “uncritical, mythical cult of the market” (Kornai [1992]). The market is not a panacea for solving all socioeconomic problems. Moreover, the market is not an end in itself. It is rather just a means to promote social and individual welfare. For this reason, the potential role of non-market means, including state intervention, in improving welfare should be neither dismissed nor underestimated.

In this chapter we argued that active state engagement is necessary for facilitating both transition and economic development. For those purposes every government intervenes in economy by default or design. Contrary to neoclassical theory, in real world, less government intervention does not always produce higher level of welfare. On the other hand, public choice theorists prove that governments, like markets, also fail, for reasons both intended and unforeseen, leading to inefficient outcomes.

In general, the assertion that the government can do better than the markets is simply false. As described above, efficient market operation cannot be attained

without government intervention. The fact that there may exist government policies that would increase the overall welfare, of course, does not necessarily create a presumption that state intervention is always desirable. Especially, in the course of transition from a central-planned economy to a market one, the role of the state needs to be redefined. As pointed out by Stiglitz [1998], there should be a discussion on “How are decisions about the role of the state made?” Taking a look at what happens not only in the former socialist states in Europe but also in the countries of Eastern Asia, we have a strong impression that this debate has never taken place.

## 1.6 Appendix

### *Box no.1 : Public goods*

In economics, a public good is a good that is non-rivalrous and non-excludable. This means : consumption of the good by one individual does not reduce the amount of the good available for consumption by others; and no one can be effectively excluded from using that good. For example, if one individual eats a cake, there is no cake left for anyone else, and it is possible to exclude others from consuming the cake ; it is a rivalrous and excludable good, or a private good. Conversely, breathing air does not significantly reduce the amount of air or water available to others, nor can people be effectively excluded from using the air. This makes it a public good. The term public good is often used to refer to goods that are non-excludable as well as non-rival. This means it is not possible to exclude individuals from the good's consumption. Fresh air may be considered a public good as it is not generally possible to prevent people from breathing it. However, technically speaking such goods should be called pure public goods. These are highly theoretical definitions : in the real world there may be no such thing as an absolutely non-rival or non-excludable good ; but economists think that some goods in the real world approximate closely enough for these concepts to be meaningful.

Paul A. Samuelson is usually credited as the first economist to develop the theory of public goods. In his classic 1954 paper "The Pure Theory of Public Expenditure" he defined a public good, or as he called it in the paper a "collective consumption good", as follows :

“...[goods] which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtractions from any other individual's consumption of that good...”



## References

- ANDREFF A. [2005], "Post-Soviet Privatization in the Light of the Coase Theorem : Transaction Costs and Governance Costs", In : "The Institutional Economics of Russia's Transformation", Oleinik A. N. (Eds.), Ashgate, London
- AKERLOF G.A. [1970], "The Market for "Lemons" : Qualitative e Uncertainty and the Market Mechanism", *Quarterly Journal of Economics*, 84 (Aug.), 488-500
- ARNDT H.W. [1998], "Market Failure and Underdevelopment", *World Development*, 16, 2
- ARTUS P. [2006], "Funding Public Services in Europe : State Banks or Public-Private Partnerships (PPPs) ?", In : *Advancing Public Goods*, Jean-Philippe Touffut, (ed.), E. Elgar Cheltenham Northampton (Mass.)
- BARR N. [1992], "Economic Theory and the Welfare State A Surveu and Interpretation", *Journal of Economic Literature*, 30/2 : 741-803
- BARR N. [1998], "The Economics of the Welfare State", Oxford University Press, Oxford
- BREMOND C.-C. [2003], "Le Service Universel dans le Devenir des industries de reseau : Télécommunications, Électricité, Services Postaux", PhD thesis, Unviersité Montpellier I
- BUCHANAN J.M., TULLOCK G. [1962], "The Calculus of Consent", University of Michigan Press, Ann Arbor
- CHAUDRY K.A. [1993], "The Myths of the Market and the Common History of Late Developers", *Politics & Society*, 21, 2, 245-274

- COASE W. [1960], “The Problem of Social Cost”, *Journal of Law and Economics*, 3 (Oct.), 1-44
- CUTLER, A. C., HAUFLER, V., PORTER, T. (EDS.) [1999], “Private Authority and International Affairs”, State University of New York Press, New York
- DOWNES A. [1957], “An Economic Theory of Democracy”, Harper & Row, New York
- DUGUIT L. [1921], “Traité de Droit Constitutionnel 5 : Les Libertés Publiques” 2ème Edition, Editions Cujas, Paris 1981
- DUNLEVAY P. [1985], “Bureaucrats, Budgets and the Growth of the State : Reconstructing an Instrumental Model”, *British Journal of Political Science*, 15, 299-328
- GALBRAITH J.K. [1990], “Revolt in Our Time : The Triumph of Simplistic Ideology”, mimeo
- GARNAUT R. [1991], “The Market and The State in Economic development : applications to the International Trading System”, *The Singapore Economic Review*, 26, 2
- GOURET F. [2007], “Privatization and Output Behavior During the Transition : Methods Matter!”, *Journal of Comparative Economics*, 35, 3-34
- GROS D., STEINHERR A. [1994], “Economic ‘Transition in Central and Eastern Europe : Planting the Seeds”, Cambridge University Press, Cambridge
- HAYEK VON, F. [1983], “Droit, Législation et Liberté”, vol. 2, *Le Mirage de la Justice Sociale*, Presses Universitaires de France, Paris
- HERZOG P. [2003], “Services of General Interest in a Competitive Multinational Space”, report for *Fondation Saint-Gobain*, Paris

- HOCHMAN H., RODGERS J. [1969], "Pareto Optimal Distribution", *American Economic Review*, 59/4 : 542-557
- HORSTMANN S., SCHMÄHL W. [2004], "Réformes de la Protection Sociale des Personnes Agées en Europe Centrale et Orientale : Evolutions Récentes", *Retraite et société*, 2004/1, 41, 43-69
- KAUL I. [2003], "Public Goods : A Positive Analysis, *UNDP Office of Development Studies Discussion Draft*
- KORNAI [1992], "The Postsocialist Transition and The State : Reflection in the Light of Hungarian fiscal Problems' *American Economic Review*, 82, 2, 1-21
- MÉNARD C., SHIRLEY M., (EDS.) [2005], "Handbook of New Institutional Economics", Kluwer Academic Press, Boston
- MORTENSEN D.T. [1986], "Job Search and Labor Market Analysis", in Ashenfelter O., Layard R. (Eds.), (1986), *Handbook of Labor Economics*, North Holland, Amsterdam
- NELLIS J. [2002], "Privatization and Enterprise Reform in Transition Economics", World Bank, Washington, D.C.
- NISKANEN W.A. [1971], "Bureaucracy and Representative Government", Aldine Atherton, Chicago
- PELZMANN S. [1976], "Towards a More General Theory of Regulation", *Journal of Law and Economics*, 19, 211-240
- POSNER R.A. [1975], "The Social Costs of Monopoly and Regulation", *Journal of Political Economy*, 83, 807-827

- PRZEWORSKI A. [1991], “Democracy and the Market : Political and Economic Reforms in Eastern Europe and Latin America”, Cambridge University Press, New York
- PRZEWORSKI A. [1992], “The Neo-Liberal Falacy”, In : Diamond L. and Platter M. (Eds.) “Capitalism, Socialism, and Democracy Revisited”, National Endowment for Democracy, Washington D.C.
- REICHARD C., WEGENER A. [1998], “New Borderlines Between State and Market”, mimeo
- SEN A. [1984], “Resources, Values and Development”, Basil Blackwell, London
- SKIDELSKY R. [1995], “The World After Communism : A Polemic for Our Times”, Macmillan, London
- STIGLER G. [1971], “The Theory of Economic Regulation”, *Bell Journal of Economics and Management Science*, 2, 137-146
- STIGLITZ J.E. [1987], “The Causes and Consequences of the Dependence of Quality on Price”, *Journal of Economic Literature*, 25/1 : 1-48
- STIGLITZ J.E. [1998], “Redefining the Role of the State : What Should It Do? How Should It Do It? And How Should These Decisions Be Made?”, Lecture presented on the Tenth Anniversary of MITI research Institute in Tokyo, Japan
- STIGLITZ J.E. [2006], “Global Public Goods and Global Finance : Does Global Governance Ensure that the Global Public Interest is Served ?” In : *Advancing Public Goods*, Jean-Philippe Touffut, (ed.), E.Elgar Cheltenham Northampton (Mass.)

- TOUFFUT J.-P. (ED.) [2006], “Advancing Public Goods”, E.Elgar Cheltenham Northampton (Mass.)
- TULLOCK G. [1970], “Private Wants, Public Means”, Basic Books, New York
- TULLOCK G. [1971], “The Charity of the Uncharitable”, *Western Economic Journal*, 9, 379-392
- WINSTON C. [2006], “Government Failure vs. Market Failure : Microeconomics Policy Research and Government Performance”, AEI-Brookings Joint Center for regulatory Studies, Washington, D.C.

# Chapitre 2

## Regulation and Performance of Electricity Distribution Utilities : The Case of Poland

### 2.1 Introduction

**E**LECTRICITY restructuring has proven to be one of the more difficult exercises in the process of economic transition and therefore has taken more effort and more time than initially expected. In socialist countries the electricity sector was assigned a prominent political and ideological role (“*Lenin’s communism is Soviet power plus electrification*”, Cullmann et al.[2007], p.6). Subsequently, reforms towards market-oriented structures were challenging : the price system was changed from social tariffs to cost-covering prices ; vertically integrated monopolies were unbundled while some portions became privatized ; regulatory authorities were established ; environmental standards and renewable energy promotion schemes were

implemented. In brief, the Est European transition countries undertook reforms within a decade that had occupied their West European transition counterparts for almost half a century.

Newbery [2004], Stern [1994] and Stern and Davis [1998] have provided evidence on the economic regulatory and political challenges of restructuring the electricity sector; many of their observations are still valid. More recent evidence by EBRD [2004] confirms that the electricity sector is still one of the unresolved legacies of transition in many countries.

Together with high voltage transport and low voltage distribution of electricity, regional electricity distribution retains many of the characteristics typical of a natural monopoly (subadditive cost function). This implies that, contrary to electricity production and electricity retail, there can be no competition in electricity distribution. It also gives the electricity sector an important role both in socialist systems and in market economies. Electricity distribution is perhaps the most complicated element in restructuring, where industrial demand has collapsed at the same time residential use is rising. Distribution is a political issue when pricing or security becomes most sensitive for industrial and residential users. When added to the natural monopolistic character of the sector, electricity companies may discover they hold the upper hand in negotiations with state's regulator during the time of transition.

Poland, by far the largest electricity producer and distributor among the East-European transition countries still has substantial problems to resolve before it can completely reform its electricity sector. Its historical dependance on coal - a supply source that suffers from chronic over-employment, centralized bureaucratic structure, and a high degree of political decision-making - has weakened moder-

nization efforts. For example, to preserve employment in several mines, Poland was forced to buy its own expensive coal. In socialist era, the electricity sector was organized by a Central Ministry which delegated operational powers to one electricity company in each of the 33 regions.

Until 1990, the whole electricity sector in Poland was owned by the State Treasury and managed by the Energy and Brown Coal Authority. International transmission interconnections were oriented to the East. In 1989 and 1990, the reform of this structure and commercialization began. Regulatory functions were shifted from the industry bodies to the Ministry of Finance and Ministry of Trade (and later to the Ministry of the Economy). Around 40 electricity generation firms were created as joint stock companies as well as 33 distribution enterprises. Operational functions relating to the grid and generation dispatch were vested in the Polish Power Grid Company which became the "single buyer" for the system. All the distribution companies have been privatized during the last three years (with the State's majority stake control) and nowadays, most of them are concentrated into capital groups. The government plans to retain a strategic holding in distribution companies given their natural monopoly characteristic so as to be able to influence their decisions in order to protect consumers. Regulation of the Polish energy sector is fulfilled by the Energy Regulatory Authority (ERA). This regulatory body looks after the implementation of the Tariff Ordinance of the Minister of Economy of 14 December 2000 setting forth the specific terms of determining and calculating tariffs and terms of settlements for trading in electric energy. The tariffs are developed by entities engaged in the generation, transmission, distribution and trading in electric energy, based upon the detailed rules provided in the relevant Ordinance of the Minister of Economy. Tariff regulation for transmission and distribution



services is based on regulatory approval of the unit cost of these services. In the development of distribution and supply tariffs, the utilities submit data to ERA on elements of expenditures for the past period (year  $t-1$ ) and forecast of expenditures and output (electricity distributed or supplied) for the projected period. Although these data are essential, they are not really sufficient. The private operators control most of the specific information needed for regulatory purposes and have no interest in volunteering their dissemination unless they have an incentive to do so. That is why we believe that performance study is highly recommended.

As the the one of the key concerns of the literature on economic transition in Eastern Europe is the link between economic reforms and productivity at the level of firms, sectors and of national economies. Broadly speaking, one expects that the move from central planning state ownership toward market competition and more efficient corporate governance increases the productivity at all levels. Several studies confirm this hypothesis by applying recent methods of productivity analysis such as data envelopment analysis (DEA) and stochastic frontier analysis (SFA). For instance, Halpern et al. [2001] show that the Hungarian corporate sector increasing competition has lead to a gradual improvement in efficiency and a shift from decreasing to increasing returns to scale. Among others, Funke et al. [2001] show that East German firms undergoing transition were significantly less efficient than firms in Western Germany<sup>1</sup>. However, the past sixteen years have taught us that not all expectations regarding the virtues of transition have materialized. This is particularly true in the capital-intensive and highly politicized infrastruc-

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<sup>1</sup>Similar studies using advanced quantitative methods include Brada et al. [1997] on Czechoslovakia and Hungary. Jones et al. [1998] on Bulgaria; Piesse [2000] on Hungary and Koop et al. [2000] on a comparison between the Polish and Western economies.

ture sectors, where reforms have sometimes been slow and painful (EBRD [1996]). The literature on restructuring's impact on the electric sector's productivity or individual companies in the emerging internal energy markets in Europe is scarce. For instance, Kocenda and Cabelka (1999) studied the liberalization of the energy sector in the transition countries with respect to its effect on transition and growth. Filippini et al. [2004] analyzed the efficiency distribution companies in Slovenia, using a stochastic frontier analysis. They found that Slovenian distribution companies were cost inefficient and that in the situation of increasing returns to scale most utilities did not achieve the minimum efficient scale. Finally, Cullmann et al. (2006) provide a cross-country efficiency analysis of regional electricity distribution companies in four East European transition countries (Czech Republic, Slovakia, Hungary and Poland). They found that the restructured Czech electricity distribution companies regularly obtained the highest efficiency scores.

In this chapter, we estimate the level of technical efficiency of electricity distribution companies in Poland. Our aim is twofold : first, since the regulation of utilities is based on simple price cap models, one would like to know whether the regulated tariffs reflect the real performance expenses; second, we want to contribute to the current discussion in the literature on transition and productivity. This chapter is structured in the following way : section 1 provides a brief review of efficiency estimation methods and explains the specification used in this study. Section 2 describes the data and section 3 presents the estimation results. A discussion of the main results in section 6 conclude. Finally, as a complimentary

issue, we treat the question of public service of electricity in the light of liberalizing electricity environment.

## **2.2 Measuring Efficiency : Theoretical Framework**

Efficiency analysis has played a crucial role in defining regulatory policies, mainly in industries characterized by natural monopolies and/or by public ownership. Examples are telecommunication (Uri [2001]), transport (Coelli et al.[1998, 2000], energy (Jamasp et al. [2001, 2003], schooling (Mizala et al. [2002], hospitals (Steinmann et al. [2003]) and even museums (Bishop and Brand [2003] using a stochastic analysis of museums in South Western England). Efficiency analysis is also increasingly applied for other sector-specific analysis, such as farming (Latruffe et al. [2004]), banking (Hauner [2005]), or the cement industry (Tsekouras et al. [2005]). In the electricity sector - as we have mentioned before - efficiency analysis has played a particularly important role in the liberalization process towards a competitive industry structure and market-oriented regulation, both in electricity transmission and electricity distribution.

In this chapter, we propose two methods of efficiency measures : parametric stochastic frontier panel data model and non parametric data envelopment analysis.

### **2.2.1 Stochastic Frontier Models**

Stochastic production frontiers were first developed by Aigner, Lovell and Schmidt [1977] and Meeusen and van den Broeck [1977]. This specification allows for a non-negative random component in the error term to generate a measure of technical inefficiency, or the ratio of actual to expected maximum output, given

inputs and existing technology. The idea can be readily applied to panel data. Indexing firms by  $i$ , the specification can be expressed formally by

$$Y_{it} = f(X_{it}, \beta, t) e^{v_{it} - u_{it}} \quad (2.1)$$

for time  $t$ ,  $Y_{it}$  output,  $X_{it}$  a vector of inputs and  $\beta$  a vector of parameters to be estimated. As usual, the error term  $v_{it}$  is assumed to be independently and identically distributed as  $N(0, \sigma_v^2)$  and captures random variation in output due to factors beyond the control of firms. The error term  $u_{it}$  captures technical inefficiency in production, assumed to be firm-specific, non-negative random variables, independently distributed as non-negative truncations (at zero) of distribution  $N(\mu_{it}, \sigma_u^2)$ , where, following Battese and Coelli [1995],

$$\mu_{it} = \delta_0 + z_{it}\delta \quad (2.2)$$

defines an inefficiency distribution parameter for  $z_{it}$  a vector of firm-specific effects that determine technical inefficiency and  $\delta$  is a vector of parameters to be estimated. Inputs variables may be included in both equations (1) and (2) as long as technical inefficiency effects are stochastic, say for random variable  $\omega_{it}$  (see Battese and Coelli, 1995). The condition that  $u_{it} \geq 0$  in equation (1) guarantees that all observations lie on or beneath the stochastic production frontier. A trend can also be included in equation (2) to capture time-variant effect. Following Battese and Coelli [1992], variance terms are parametrized by replacing  $\sigma_v^2$  and  $\sigma_u^2$  with  $\sigma^2 = \sigma_v^2 + \sigma_u^2$  and  $\gamma = \sigma_u^2 / (\sigma_v^2 + \sigma_u^2)$ . For the basic case, the technical efficiency

( $TE$ ) of the  $i$ -th firm in the  $i$ -th period can be defined as

$$TE_{it} = \frac{E(Y_{it} | u_{it}, X_{it})}{E(Y_{it} | u_{it} = 0, X_{it})} = e^{-u_{it}} \quad (2.3)$$

for  $E$  the usual expectations operator. The measure of technical efficiency is thus based on the conditional expectation given by equation (3), given the values of  $v_{it} - u_{it}$  evaluated at the maximum likelihood estimates of the parameters in the model, where the expected maximum value of  $Y_{it}$  is conditional on  $u_{it} = 0$ . The measure  $TE_{it}$  clearly must have a value between 0 and 1. If  $\gamma = \sigma_u^2 / (\sigma_v^2 + \sigma_u^2) = 0$  the expected value of  $Y_{it}$  is 1 since there are no deviations due to technical efficiency ( $\sigma_u^2 = 0$ ). If  $\gamma = 1$  deviations in output are due entirely to technical inefficiency effects. Thus, for  $0 < \gamma < 1$ , output deviations are characterized by the presence of both technical inefficiency and a random error.

### 2.2.2 Data Envelopment Analysis

Inefficiency scores obtained from the stochastic production frontier can be compared with those obtained using a linear programming approach. In this paper we use a nonparametric method based on DEA to compute efficiency scores for Polish distribution utilities. DEA is a linear programming method that uses data on the input and output quantities to construct a linear surface over the data points. A detailed description of the DEA approach to efficiency measurement may be found in Charnes et al. [1994], or Cooper et al.[2000]. This frontier surface is constructed by solving a sequence of linear programming problems, one for each company (or DMU : Decision Making Unit) in a given sample. We use input-oriented CCR

model that seeks to maximize an input-output ratio.<sup>2</sup>We assume that there are  $n$  DMUs to be evaluated. Each DMU consumes varying amounts of  $m$  different inputs to produce  $s$  different outputs. Specifically,  $DMU_j$  consumes amount  $x_{ij}$  of input  $i$  and produces amount  $y_{rj}$  of output  $r$ . We assume that  $x_{ij} \geq 0$  and  $y_{rj} \geq 0$  and further assume that each DMU has at least one positive input and one positive output value. The ratio of outputs to inputs is used to measure the relative efficiency of the  $DMU_j$  to  $DMU_0$  to be evaluated relative to the ratios of all of the  $j = 1, 2, \dots, nDMU_j$ . We can interpret the CCR construction as the reduction of multiple-output / multiple-input situation (for each DMU) to that of a single "virtual" output and "virtual" input. For a particular DMU the ratio of this single virtual output to single virtual input provides a measure of efficiency that is a function of the multipliers. We can express this ratio, which is to be maximized, as the objective function for the particular DMU being evaluated as :

$$\max h_0(u, v) = \frac{\sum_r u_r y_{r0}}{\sum_i v_i x_{i0}} \quad (2.4)$$

*s.to*

$$h_0(u, v) = \frac{\sum_r u_r y_{rj}}{\sum_i v_i x_{ij}} \leq 1 \quad (j = 1, \dots, n)$$

$$u_r, v_i \geq \text{for all } i \text{ and } r$$

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<sup>2</sup>The Charnes, Cooper, Rhodes (CCR) DEA model (Charnes et al.[1978])

It should be noted that the variables are the  $u_r$ 's and the  $v_i$ 's and the  $y_{r0}$ 's and  $x_{io}$ 's are the observed output and input values, respectively, of  $DMU_0$ , the DMU to be evaluated. A set of normalizing constraints (one for each DMU) reflects the condition that the virtual output to virtual input ratio of every DMU, must be less than or equal to unity.

Since we have panel data, several possibilities arise within context of DEA. One of them is to compute a frontier for each period and to compare these cross-sectional runs. In this way, one constructs a frontier in each year and calculate the efficiency of each firm relative to frontier in each period. Another possibility is to treat the panel as a single cross-section (each firm in each period being considered as an independent observation, pooling the observations altogether). Under this approach, a single frontier is computed, and the relative efficiency of each firm in each period is calculated by reference to this single frontier.

One case where DEA has featured in the regulated sector is that of OFWAT, the regulator of English and Welsh water companies.<sup>3</sup> DEA study was also proposed by Berg *et al.* [2005] in order to assess the privatization effectiveness of Ukrainian electricity distribution companies.

## 2.3 Model specification and Data

### 2.3.1 Frontier Analysis

Our data consists of a panel of 31 Poland's distribution utilities over a 3-year period from 2001 to 2003 (after eliminating 2. utilities for which data quality

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<sup>3</sup>See Thanassoulis [2001].

was insufficient) . The original data set is mainly based on the information from Polish Power Transmission and Distribution Association. The "Amadeus" executive reports from *Bureau van Dijk* have been used to complete the data. The following variables are going to be used in the estimation : electricity sales (in MWh), number of employees (in vertical integrated firms we use only employees in the distribution activity), total distribution lines (in kilometers), total transformer capacity (in kVA), service area (in square kilometers) and number of customers in the service area. The summary statistics are presented in Table 1. In all cases the sample size is equal to 93 observations.

TAB. 2.1 – Summary Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Electricity sales (in <i>MWh</i> )	2964695	1604648	101259	9396781
Number of employees	1327	671	137	2711
Distribution lines (in <i>km</i> )	21465	10377	8267	42226
Transformer capacity (in <i>kVA</i> )	2667	1298	795	6257
Service area (in <i>km<sup>2</sup></i> )	9492	60612	486	27229
Number of customers	474058	22426	178000	1096900

In this paper we use a stochastic frontier model for panel data. This theoretical framework has been subject of great body of literature.<sup>4</sup> For the Poland's electricity distribution utilities we propose a Cobb-Douglas production function which can be written as :

$$Y_{it} = \beta_0 + X_{1it}\beta_1 + X_{2it}\beta_2 + X_{3it}\beta_3 + A_1\beta_{A1} + A_2\beta_{A2} + v_{it} - u_{it} \quad (2.5)$$

<sup>4</sup>See Kumbhakar and Lovell [2000] and Greene [2002] for some recent developments. A stochastic frontier panel data models applied for efficiency measures of electric distribution utilities have been used in Farsi and Filippini [2003] and Estache and *al.* [2002]. However, no performance studies of Polish electric distribution companies have been managed yet.



where  $Y$  indicates the natural logarithm of electricity sales,  $X_1$  is the natural logarithm of the number of permanent employees,  $X_2$  is the natural logarithm of distribution network,  $X_3$  is the natural logarithm of transformer capacity,  $A_1$  is the natural logarithm of the service area and  $A_2$  is the natural logarithm of customer density. The technological efficiency is specified as time constant, which is rather realistic regarding a relatively short time of analysis.

### 2.3.2 DEA Specification

For our DEA computations, the data source is the same as in the case of the frontier analysis. Since we have panel data, we have chosen to calculate the efficiency of each firm in each period. The result scores are the averages of yearly scores. In our DEA runs, the input-output mix that had been used is presented in table 2 :

TAB. 2.2 – DEA model

<b>Inputs</b>	<b>Outputs</b>
Number of employees	Electricity sales
Distribution network	Number of customers
Transformer capacity	

The choice of variables made here follows the general consensus found in the current literature.<sup>5</sup> Although comparison of some alternative modeling could yield additional insights, we believe that the choice of variables is rather convincing.

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<sup>5</sup>For an exhaustive literature review see Estache et *al.* [2002].

## 2.4 Estimation Results

This section presents and discusses the estimation results. The maximum likelihood estimates of the stochastic frontier production model defined in equation (5) were obtained using STATA. Table 3. presents the stochastic frontier estimates. All the parameters are significant at the 5 per cent level indicating a good explanatory power of the variables included in the model. The coefficient on  $\gamma$  implies that 98,25% of the two components disturbance term is represented by technical inefficiency effects. Since the coefficients of the production function do not have any direct interpretation, we calculate the elasticities of output with respect to each of the inputs. Transformer capacity is the input with the highest production elasticity of about 0,52 followed by distribution lines at 0,40. Furthermore, we cannot reject the null hypothesis that labor elasticity equals 0. Surprisingly, estimated coefficients of the environmental variables do not have the expected signs. The consumers density has a negative effect on sales, which means that as the number of consumers rises (*ceteris paribus*), energy delivered goes down. Service area has also a negative sign, since given consumer density it is playing an input role.

Finally, we have computed the efficiency scores for each utility, which are presented in table 4. below. We were surprised by the efficiency scores' interval which ranges from 32 to 99%. If a firm has an efficiency index of 0.65 for instance (which is the mean value in our study), it means that it could produce the same level of output using 65% of its current inputs. For the regulatory purposes this means that the price-cap should be based on 65% of current expenditures, not 100%. With this approach, only the firms reaching 100 % of efficiency would be allowed to recover

TAB. 2.3 – Stochastic production frontier estimation

<b>Variable</b>	<b>Estimate</b>
<b><i>Production function</i></b>	
Constant	13,27598 (0,001011)
Ln employees	0,0152997 (0,0023873)
Ln net	0,5444592 (0,0000136)
Ln capacity	1,224893 (0,0000014)
Ln area	-0,4347432 (0,005636)
Ln customers	-0,6882361 (0,002168)
$\gamma$	0,98255214
<b><i>Average production elasticities</i></b>	
Employees	0,0776
Net	0,4041
Capacity	0,5276
Area	-0,4146
Customers	-0,9358

\*standard errors in the parentheses

their opportunity cost of capital while the others would have lower rates of return. We have also computed the DEA efficiency scores using DEA Solver Pro 4.0 software (see tab.6).

In this case, the efficiency scores' interval ranges from 32% to 100% (which is our reference level utility). These results differ, however, from our frontier measure. Clearly, we find two quite efficient firms under frontier approach performing poorly within DEA specification. This problem is particularly serious when the performance studies should serve as a decision making tool for the regulation authority. In attempt to establish the conditions under which different efficiency me-

TAB. 2.4 – Average technical efficiency scores by utility for the period 2001-2003

Utility	Frontier Efficiency scores	Rank
ENEA SA Zakład Główny w Poznaniu	0,9027	3.
ENEA SA Zakład Główny w Bydgoszczy	0,8067	7.
ENEA SA Zakład Główny w Gorzowie Wlkp	0,4639	29.
ENEA SA Zakład Główny w Szczecinie	0,7720	10.
ENEA SA Zakład Główny w Zielonej Gorze	0,6651	13.
ENERGIA PRO Koncern Energetyczny SA oddział w Jeleniej Gorze	0,5888	21.
ENERGIA PRO Koncern Energetyczny SA oddział w Legnicy	0,9909	1.
ENERGIA PRO Koncern Energetyczny SA oddział w Opolu	0,6426	16.
ENERGIA PRO Koncern Energetyczny SA oddział w Walbrzychu	0,5282	25.
ENERGIA PRO Koncern Energetyczny SA oddział we Wrocławiu	0,6612	15.
ENION SA oddział Bielsko-Biala	0,5466	23.
ENION SA oddział w Bedzynie	0,4786	27.
ENION SA oddział w Częstochowie	0,7024	11.
ENION SA oddział w Krakowie	0,6888	12.
ENION SA oddział w Tarnowie	0,3773	30.
Gornoslaski Zakład Energetyczny SA	0,5905	20.
ENERGA SA oddział w Elblagu	0,6107	19.
ENERGA SA oddział w Gdańsku	0,6623	14.
ENERGA SA oddział w Koszalinie	0,4714	28.
ENERGA SA oddział w Olsztynie	0,6272	17.
ENERGA SA oddział w Płocku	0,6271	18.
ENERGA SA oddział w Toruniu	0,7790	9.
Lubelskie Zakłady Energetyczne "LUBZEL" SA	0,8159	6.
Lodzki Zakład Energetyczny SA	0,4873	26.
Rzeszowski Zakład Energetyczny SA	0,5645	22.
STOEN SA	0,3295	31.
Zakład Energetyczny Białystok SA	0,8187	5.
Zakład Energetyczny Łódź-Teren SA	0,7870	8.
Zakład Energetyczny Warszawa-Teren SA	0,8916	4.
Zamojska Korporacja Energetyczna SA	0,5308	24.
Zakłady Energetyczne Okręgu Radomsko-Kieleckiego SA	0,9228	2.

thodologies are most useful to regulatory authorities, Bauer et *al.*[1998] propose a set of consistency conditions which, if met, would avoid the choice between approaches. The efficiency estimates derived from the different approaches should be consistent in their efficiency levels, rankings, and identification of best and worst firms, consistent over time. Specifically, Bauer's consistency conditions are :

TAB. 2.5 – Average technical efficiency scores by utility for the period 2001-2003

Utility	DEA Efficiency scores	Rank
ENEA SA Zakład Główny w Poznaniu	0,9861	3.
ENEA SA Zakład Główny w Bydgoszczy	0,6424	7.
ENEA SA Zakład Główny w Gorzowie Wlkp	0,3437	29.
ENEA SA Zakład Główny w Szczecinie	0,5301	11.
ENEA SA Zakład Główny w Zielonej Gorze	0,4752	15.
ENERGIA PRO Koncern Energetyczny SA oddział w Jeleniej Gorze	0,4226	19.
ENERGIA PRO Koncern Energetyczny SA oddział w Legnicy	0,9907	2.
ENERGIA PRO Koncern Energetyczny SA oddział w Opolu	0,4716	16.
ENERGIA PRO Koncern Energetyczny SA oddział w Walbrzychu	0,3990	22.
ENERGIA PRO Koncern Energetyczny SA oddział we Wrocławiu	0,4671	17.
ENION SA oddział Bielsko-Biala	0,3883	23.
ENION SA oddział w Bedzinie	0,3524	27.
ENION SA oddział w Częstochowie	0,4873	13.
ENION SA oddział w Krakowie	0,4929	12.
ENION SA oddział w Tarnowie	0,3305	30.
Gornoslaski Zakład Energetyczny SA	0,0,5522	9.
ENERGA SA oddział w Elblagu	0,3763	24.
ENERGA SA oddział w Gdańsku	0,4771	14.
ENERGA SA oddział w Koszalinie	0,3512	28.
ENERGA SA oddział w Olsztynie	0,5413	10.
ENERGA SA oddział w Płocku	0,4280	18.
ENERGA SA oddział w Toruniu	0,5735	8.
Lubelskie Zakłady Energetyczne "LUBZEL" SA	0,9409	5.
Lódzki Zakład Energetyczny SA	0,3739	25.
Rzeszowski Zakład Energetyczny SA	0,4107	20.
STOEN SA	0,3228	31.
Zakład Energetyczny Białystok SA	0,7251	6.
Zakład Energetyczny Łódź-Teren SA	0,3555	26.
Zakład Energetyczny Warszawa-Teren SA	0,9837	4.
Zamojska Korporacja Energetyczna SA	0,4012	21.
Zakłady Energetyczne Okręgu Radomsko-Kieleckiego SA	1	1.

- (i) the efficiency scores generated by the different approaches should have comparable means and other distributional properties ;
- (ii) the different approaches should rank the firms in the approximately the same order ;
- (iii) all of the useful approaches should demonstrate reasonable stability over time, i.e., consistently tend to identify the same firms as relatively efficient

or inefficient in different years, rather than varying markedly from one year to the next.

In order to check-up the quality of our estimates we have proceeded to evaluate them under three Bauer's conditions. Regarding the statistical properties of both frontier and DEA approaches, the Wilcoxon test was carried out to contrast the null hypothesis that both frontier and DEA distributions are the same. The result indicates that we can reject the null hypothesis at any level above 1,77%, which indicates that the first consistency condition is not met. This result is not particular to our study, but rather general in the applied literature, and it could help in explaining why regulators tend not to translate efficiency measures into expected cost reductions. If the levels of efficiency are not consistent across the different methods of estimation, it is still possible that these methods generate similar rankings of firms by their efficiency scores. Therefore, we proceeded to run the Spearman's ranking correlation test between pairs of scores. The correlation between frontier-DEA scores is positive and significantly different from zero (the null hypothesis of zero correlation is rejected). Table 6 reports efficiency scores distribution and the results of test mentioned above. Regarding the third Bauer's

TAB. 2.6 – Comparison of the distributions efficiency measures across methods

<b>Approach</b>	<b>Frontier</b>	<b>DEA</b>	
Mean	0,6561	0,5361	
Median	0,6494	0,4716	
Deviation	0,1636	0,2204	
Maximum	0,9901	1	
Minimum	0,3295	0,3228	
Sample	31	31	
<b>Test</b>	<b>Statistics</b>	<b>p-value</b>	<b>Decision</b>
Wilcoxon	$z$ -statistics= 2,371	0,0177	Reject $H_0$
Spearman	Spearman's $\rho$ = 0,6828	0,003	Reject $H_0$

condition, we do not include the econometric approaches because we have made a hypothesis of technical efficiency being constant over time.

We insist on the fact that the efficiency scores are not consistent across utilities within the same holding groups. It can be explained by a slack of management convergence within a given group in a quite short time. One should remember that the holding member groups were merged under regional, not size criterion. Finally, in order to conclude our analysis, excepting two outlier firms, the efficiency scores ranged in both upper and lower quartile classify the same best and worst performing utilities.

## 2.5 Conclusion

In this chapter we have shown that technical efficiency measures as a benchmarking method can be used for regulatory purposes. However, benchmarking should be seen as signals rather than definitive indicators. The right choice of benchmark can minimize the number of times that a misleading sign is sent to regulator.

Of course the results, as well as the methodologies can be contested by operators. But, as it was stressed by Estache *et al.*[2002] *"this is a normal situation, as long as regulation is the game played between regulators and operators and as long as this game is biased in favor of operators since they control much of the information"*. We are hoping that this study can be helpful for Poland's ERA, which can be inspired to use efficiency methods as a complementary regulation tool.

We regret that this study have been managed for 2001-2003 period only, but we

could not risk any approximation for doubtful data. Unfortunately, detailed information on distribution utilities companies is not available. This is the reason why we could not proceed on cost frontier estimation, which has a bigger explanatory power than production frontier method. This study, however, tries to reduce the informational problem resulted from the EU enlargement in the way it fills-in a part of the gap of rather underdeveloped academic and empirical studies regarding Eastern European countries.<sup>6</sup>

In spite of the two different approaches used, our study is pretty consistent in the way it establishes a clear rank of best and worst performers. For the regulators it can be used as an additional instrument that reduces the information asymmetry.

## **2.6 Additional issue : Public service of electricity**

For half a century governments have considered electricity as a public service. They still do. In the European Union, Article 3.2 of the Electricity Directive, which came into force 19 February 1999, declares that

“Member States may impose on undertakings operating in the electricity sector, in the general economic interest, public service obligations which may relate to security, including security of supply, regularity, quality and price of supplies and to environmental protection”.

In the United States, the activities of electricity companies are supervised by agencies of state governments explicitly called Public Service Commissions or Public

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<sup>6</sup>The necessity of managing empirical studies in the Eastern EU members countries was underlined at the 6th *SESSA* conference “*Implementing the internal market of electricity : proposals and time-tables*”.



Utility Commissions<sup>7</sup>. In most countries outside OECD, electricity remains explicitly a branch of government, either national, regional or local - a service the government provides, with varying success, to the public under its jurisdiction.

As we know, in the 1990s, however, governments both inside and outside the OECD have begun to liberalize their electricity systems. They may allow independent generation; sell the electricity assets previously owned by government to private investors (including foreign); establish a regulatory agency to some extent independent of government; require separate accounts for generation, transmission, distribution and supply to users; break up and restructure systems previously integrated, into separate bodies for generation, transmission, distribution and supply to users; and introduce competition between different generators and different suppliers, possibly across national borders. In spite of all this upheaval governments continue to regard electricity as a public service. In practice, however, liberalization is drastically altering the policy levers by which government can direct the public service dimension of electricity.

### **2.6.1 Electricity service : liberal and universal ?**

If electricity is a public service, all of the public should feel equally entitled to benefit from it. On a traditional monopoly system, the usual arrangement is a pattern of invisible cross-subsidies, mandated directly or indirectly by government, between categories of customer cheaper or more expensive to supply. In particular, government may mandate provision of electricity to the poor, and to rural areas where users are more widely dispersed and network connections therefore more costly. The tariff may have a “postage-stamp” structure, in which all users of a

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<sup>7</sup>In the “Le Robert & Collins” Dictionary “utility” means “public service”.

given category, such as households, pay the same price per unit of electricity, no matter where they are on the system or how much they cost to supply. Some governments subsidize the poor directly, by the “fuel supplements” that help them to pay their electricity bills.

Liberalization, and in particular the introduction of competition, may jeopardize such arrangements. In a market context, in which sellers of electricity compete to win contracts with buyers who can choose between different sellers, some customers are more desirable than others. Customers who are cheap to supply, use a lot of electricity at a fairly steady rate, and pay their bills promptly and thus are the most attractive. They will find sellers eager to do their business and will be offered the most advantageous terms. At the other end of scale of desirability are thinly scattered customers in remote areas, and those in poor neighborhoods. In a competitive market they have little bargaining power. As suppliers quickly pick the most desirable customers, the least desired ones get pushed to the back of the queue.

In a traditional electricity system, one corollary of the monopoly is the obligation of supply. The government mandates the supplier to deliver all electricity required by all users in his service area. When electricity is liberalized, this obligation becomes hard to pin down and may vanish entirely. A network operator, whose activities still constitute a monopoly, may be subject to government regulation that imposes an obligation to connect all potential users in the service area to the network. The cost of the connection, however, may fall on the user, especially in a remote area, and may be substantial. Moreover, a connection alone does not entitle a user to take electricity from the network; the user must also contract with supplier to buy electricity and pay for it. If he does not pay, he may be disconnected.

In the transition to full liberalization, so long as all the competing interests involved are making enough money to keep them happy, these unresolved tensions may remain below the surface. However, some companies in liberalized contexts are already facing shareholder discontent, collapse of market value and takeovers. Bankruptcy is no longer inconceivable. As competition intensifies, margins tighten and profits shrink. Companies may become less willing to deliver services that do not contribute adequately to accounts and balance sheets. The consequence would be a growing challenge to governments that continue to view universal provision of the benefits of electricity as an issue of social policy. Outside the OCDE, failure of universal provision has long been the factor in political unrest. In EU countries, where universal provision is now widely taken for granted, any weakening could cause major trouble for governments.

## 2.7 Appendix

TAB. 2.7 – "The BEST" and "The WORST" Utilities

The Best Performers	The Worst Performers
Zakłady Energetyczne Okregu Radomsko-Kieleckiego SA	STOEN SA
ENERGIA PRO Koncern Energetyczny SA oddział w Legnicy	ENION SA oddział w Tarnowie
ENEA SA Zakład Główny w Poznaniu	ENEA SA Zakład Główny w Gorzowie Wlkp
Zakład Energetyczny Warszawa-Teren SA	ENION SA oddział w Bedzinie
Lubelskie Zakłady Energetyczne "LUBZEL SA"	ENERGA SA oddział w Koszalinie

## References

- AGRELL P. J., BOGETOF P., TIND J. [2005], "DEA and Dynamic Yardstick Competition in Scandinavian Electricity Distribution", *Journal of Productivity Analysis*, 23, 173-201
- AIGNER P., LOVELL C. A. K., SCHMIDT P. [1977], "Formulation and Estimation of Stochastic Frontier Production Function Models", *Journal of Econometrics*, 6, 21-37
- BATTESE G. E., COELLI T. J. [1992], "Frontier Production Function, Technical Efficiency and Panel Data : with application to Paddy Farmers in India", *Journal of Productivity Analysis*, 3, 153-169
- BATTESE G. E., COELLI T. J. [1995], "A Model for Technical Inefficiency Effects in Stochastic Frontier Production Function for Panel Data", *Empirical Economics*, 20, 325-332
- BAUER P., BERGER A., FERRIER G., HUMPHREY D. [1998], "Consistency Conditions for Regulatory Analysis of Financial Institutions : A comparison of Frontier Efficiency Methods", *Journal of Economics and Business*, 50, 85-114
- BERG S., LIN C., TSAPLIN V. [2005], "Regulation of State-Owned and Privatized Utilities : Ukraine Electricity Distribution Company Performance", *Unpublished Manuscript (February 1, 2005)*, Public Utility Research Center, University of Florida
- BISHOP P., BRAND S. [2003], "The Efficiency of Museums : A Stochastic Frontier Production Function Approach", *Applied Economics*, 35, 1853-1858

- BRADA J. C., KING A. E., MA C. Y. [1997], "Industrial Economics of Transition : Determinants of Enterprise Efficiency in Czechoslovakia and Hungary", *Oxford Economic Papers*, 49, pp. 327-354
- CHARNES A., COOPER W. W., RHODES E. [1978], "Measuring Efficiency of Decision Making Units", *European Journal of Operational Research*, 2, 429-444
- CHARNES A., COOPER W. W., LEVIN A. Y., SEIFORD L. M. [1994], "Data Envelopment Analysis. Theory, methodology and Applications", *Kluwer Academic Publishers*, Boston
- COELLI T., PRASADA RAO D., BATTESE G. E. [1998], "An Introduction to Efficiency and Productivity Analysis", *Kluwer Academic Publishers*, Boston
- COELLI T., PERELMAN S. [2000], "Technical Efficiency of European Railways : a Distance Function Approach", *Applied Economics*, 32, 1967-1976
- COOPER W. W., SEIFORD L. M., ZHU J. [2004], "Handbook on Data Envelopment Analysis", *Springer*
- CULLMANN A., HIRSCHHAUSEN, VON CH. [2007], "Dynamic Efficiency Analysis of Polish Electricity Distribution Utilities - Is Transition Efficiency Enhancing?", *Efficiency Analysis Working Papers WP-EA-05*, Dresden University of Technology
- CULLMANN A., APFELBECK J., HIRSCHHAUSEN, VON C. [2006], "Efficiency Analysis of East European Electricity Distribution in Transition", *DIW Discussion Paper 553*, Berlin, DIW Berlin
- EBRD [1996], "Transition Report : Building an Infrastructure for Transition and Promoting Savings", London

- EBRD [2004], "Transition Report : Infrastructure", London
- ESTACHE A., ROSSI M. A., RUZZIER C. A. [2002], "The Case for International Coordination of Electricity Regulation : Evidence from the Measurement of Efficiency in South America", *World Bank Policy Research Working Paper*, nr. 2907
- FARSI M., FILIPPINI M. [2003], "Regulation and Measuring Cost Efficiency with Panel Data Models : Application to Electricity Distribution Utilities", *CEPE Working Paper Nr. 19*
- FILIPPINI M., HROVATIN N., ZORIC J. [2004] "Regulation of the Slovenian Electricity Distribution Companies", *Energy Policy*, 32, pp. 335-344
- FUNKE M., RAHN J. [2002], "How Efficient is The East German Economy ?", *Economics of Transition*, 10,(1), pp.201-223
- GREENE W. [2002], "Alternative Panel Data Estimators for Stochastic Frontier Models", *Unpublished manuscript (September 1, 2002)*, Department of Economics, New York University
- HALPERN L., KOROSI G. [2001], "Efficiency and Market Structure in the Hungarian Corporate Sector", *Economics of Transition*, 9,(3), pp. 559-592
- HAUNER D. [2005], "Explaining Efficiency Differences Among Large German and Austrian Banks", *Applied Economics*, 37, 969-980
- HORVATH III S. [2004] "Electricity Regulation 2004", *Dewey Ballantine*, Warsaw
- JAMASB T., POLLIT M. [2001], "Benchmarking and Regulation : International Electricity Experience", *Utilities Policy*, 9, 107-130

- JAMASB T., POLLIT M. [2003], "International Benchmarking and Yardstick Regulation : An Application to European Electricity Distribution Utilities", *Energy Policy*, 31, 1609-1622
- JONES D., KLINEDINST M., ROCK C. [1998], "Productive Efficiency During Transition : Evidence from Bulgarian Panel Data", *Journal of Comparative Economics*, 26, pp.446-464
- KOCENDA E., CABELKA S. [1999], "Liberalization in the Energy Sector in the CEE-Countries : Transition and Growth", *Osteuropa-Wirtschaft*, 44/1, pp. 196-225
- KOOP G., OSIEWALSKI J., STEEL M. F. J. [2000], "A stochastic Frontier Analysis of Output Level and Growth in Poland and Western Economies", *Economics of Planning*, 33, pp. 185-202
- KUMBAKHAR S., LOVELL C. A. K. [2000], "Stochastic Frontier Analysis", Cambridge University Press
- LATRUFFE L., BALCOME K., DAVIDOVA S., ZAWALINSKA K. [2004], "Determinants of technical Efficiency of Crop and Livestock Farms in Poland", *Applied Economics*, 36, 1255-1263
- MIZALA A., ROMAGUERA P., FARREN D. [2002], "The Technical Efficiency of Sools in Chile", *Applied Economics*, 34, 1533-1552
- MEUSEN W., VAN DEN BROECK J. [1977], "Efficiency Estimation from Cobb Douglas Production Functions with Composed Error", *International Economic Review*, 18, 435-444
- NEWBERY, D.M. [1994], "Restructuring and Privatizing electric Utilities in Eastern Europe", *Economics of Transition*, 2,(3), pp. 291-316

- PIESSE J. [2000], "A Stochastic Frontier Approach to Firm level Efficiency, Technological Change, and productivity During the Early Transition in Hungary", *Journal of Comparative Economics*, 28, pp. 473-501
- STEINMAN L., ZWEIFEL P. [2003], "On the (In)Efficiency of Swiss Hospitals", *Applied Economics*, 35, 361-370
- STERN J. [1994], "Economic Regulation in Central and Eastern Europe", *Economics of Transition*, 2,(3), pp. 391-397
- STERN J., DAVIS J.R. [1998], "Economic Reform of the Electricity Industries of Central and Eastern Europe", *Economics of Transition*, 6, (2), pp. 427-460
- THANASSOULIS E. [2001], "Introduction to the Theory and Application of Data Envelopment Analysis - A Foundation Text with Integrated Software", *Springer*
- TSEKOURAS K. D., SKURAS D. [2005], "Productive Efficiency, Allocative Efficiency and Exports : An Examination of Alternative Hypotheses for the Greek Cement Industry", *Applied Economics*, 37, 279-291
- URI N. D. [2001], "Technical Efficiency, Allocative Efficiency, and the Implementation of a Price Cap Plan in Telecommunications in the United States", *Journal of Applied Economics*, 4, 163-186



## Chapitre 3

# Why It Is So Hard? A History of Highway Concession Contracts in Poland

### 3.1 Introduction

Among economists, there is a consensus concerning the need to improve infrastructure, especially in the transport sector, which is seen as a necessary condition for successful economic growth. However, in the case of a few, rather successful transition countries, the problem of a poor transport infrastructure has not yet been resolved. The best example is Poland, where the quality of its transport infrastructure constitutes an important barrier to the country's development, especially in the context of European integration. Although the total length of the roads is relatively high, Poland lacks the minimum required standard of density of highways and expressways. In order to overcome this unfortunate situation, the

State authorities have decided to launch the “Infrastructure - A Key to Development” program, formulating radical changes in the law as well as new methods of financing infrastructure projects. The core concept of the government’s program was to turn to the private sector to provide infrastructure improvements, basically highways. One motivation was very limited tax resources, which led the State borrowing as much as it could from development banks and private capital markets. A second motivation was the hope that the private sector - motivated by profit - would be more efficient than the State. The adopted solution was a Public-Private Partnership (PPP) concept, in the form of long-term concession contracts.

In this chapter we investigate the reasons why highway construction projects have been delayed. We argue that some aspects of this unfortunate situation could have been avoided if the predictions of Transaction Cost (TCT), as well as Incomplete Contract (ICT) Theories had been taken into consideration. By taking as an example the concession allocation for the first section of the A2 highway (supposed to link the eastern and western parts of the country) we explain why this project has partially failed. We enumerate some - in our opinion - blatant errors by both public and private parties. We especially focus on the control issue, as contract execution yielded flagrant deficiencies. For each step of the A2 PPP agreement we indicate at least one possible solution, as they became evident from a theoretical point of view. To conclude, we propose a brief confrontation of the lessons to be learned for the future, especially as the new government program for land infrastructure has recently been published.<sup>1</sup>

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<sup>1</sup>“Program Budowy Autostrad i Drog Ekspresowych w Latach 2006-2013” : national plan for the construction of highways and expressways published by the Ministry of Infrastructure January 19, 2006.

## 3.2 The genesis of highway construction in Poland

In Europe, the very first highways were built in Germany and Italy between the two World Wars. Those construction projects were undertaken to combat unemployment, although in Germany the highway construction plans had a very pronounced military flavor. In Poland, the first Polish Road Congress (Lvov, 1937) proposed a highway network of 4000-6000 km (Despiney et al. [2000]). This proposition was amended two years later, establishing a plan for 4700 km of highways with following priorities :

- Warsaw-Poznan-Poland's western frontier,
- Gdynia-Bydgoszcz-Lodz-Katowice,
- Katowice-Cracow-Lvov,
- Warsaw-Lublin-Lvov-Poland's eastern frontier,
- Pulawy-Sandomierz-Przemysl.

Unfortunately, this project was never realized because of the high construction costs, an extremely low level of car ownership and - the most important factor - the start of the 2<sup>nd</sup> World War. After the War, because of the frontier change of about 250 km from East to West, Poland inherited 140 km of highways built by the Germans. During the socialist era, there were only 117 km of highway-like roads built, as well as 342 km of expressways. The relatively low level of cars to the kilometer (in 1957 : 20 cars/km in Germany, 18 cars/km in France and only 3 cars/km in Poland) meant that the central planners paid much less attention to the road infrastructure issue. In spite of the fact that Poland had signed some CO-

MECON co-operation agreements concerning the development and modernization of the Moscow-Warsaw-Berlin road linkage, the preparation for construction only started in 1980, as the necessity of this axis became indispensable for the organization of the Olympic Games in Moscow. At that time, the project of the future A2 highway was initiated and necessary land was bought by the State. However, the construction process was frustrated until the mid nineties, when the increase in lorry traffic became a serious problem.

### 3.3 Project schedule

Everybody who has ever been to Poland surely remembers its poor transportation network. In the early 90's, numerous ideas for financing highway construction were proposed. None of them, however, were applied. A short time later, the Polish government proposed the "National Plan for Highway Construction" based upon a PPP method. The government was encouraged by the World Bank's "private participation in infrastructure" policy. Indeed, by 1996, the project draft had been prepared. The program was launched in early 1997 within the first successful concession auction bidding. In 2001, public opinion was shocked by the Supreme Chamber of Control report revealing that in 1998-2000 0 km of highways were built in the four PPP concession schemes.<sup>2</sup> After a stormy period in Parliament and media, followed by some ministers' dismissal, no reconstruction project emerged. Therefore, one may ask, how could this happen?

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<sup>2</sup>Najwyższa Izba Kontroli (NIK) - supreme state audit body. Its status is regulated by the Constitution of April 1997 and by the NIK Act of 23 December 1994.

## 3.4 The attribution problem

### 3.4.1 The story

Under the Polish law on toll highways<sup>3</sup> the building and exploitation of an highway requires a limited three-step auction process, which leads to the objective selection of the best concessionaire. The winning company for the A2 highway was “Autostrada Wielkopolska SA”<sup>4</sup>. Following the winning tender, the Concession Agreement was signed. As the concessionaire, “Autostrada Wielkopolska SA” was initially bound to build and operate the first section of the A2 Highway from Swiecko to Konin (the first segment of 148,7 km<sup>2</sup>). Furthermore, “Autostrada Wielkopolska SA” did not become the owner of the A2; it ensured the performance of the Concession Agreement for the term of 40 years, that is by 2037. The land on which the highway is built remains the property of the State Treasury and the Company pays an annual rent to the State. The party to the Concession Agreement on behalf of the Polish government is the Minister of Infrastructure, while the body responsible for its implementation is the Highway Construction and Exploitation Agency. In order to meet its obligation under the Concession Agreement, a Development Company was established - “A2 Bau Development GmbH”(founded by the shareholders of “AWSA” : “Strabag AG” and “NCC international AB”) which is responsible for the construction, and the operating company - “Autostrada Eksploatacja SA”(founded by the shareholders of “AWSA” : “Transroute International

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<sup>3</sup>1994 Toll Highways Act. The Act provides a legal framework for the construction of highways (procedures for location of the highways, acquisition of property on which the highways are to be built, tender proceedings, concessions for the construction and operation of highways). The Act also regulates financial issues related to the construction of highways.

<sup>4</sup>“Autostrada Wielkopolska SA”, the first Polish special purpose entity incorporated in 1993 was founded in 1994 with the goal of financing, building and operating the A2 Toll Highway. Its capital is made up with Polish and foreign shareholders’ funds.

SA”, “Kulczyk Holding SA” and “Strabag AG”). In order to ensure proper performance under the contracts, in strict compliance with Polish law and the provisions of the Project Agreements, the parties to the concession : the Minister of Infrastructure and the Concessionaire, appointed an Independent Engineer - “WS Atkins” from the UK, whose duty was to supervise the design process, the construction and operation of the highway, as well as to oversee for the proper execution and adequate quality of the work. Though on first sight the contractual clauses seemed to be clear and sound, their interpretation and implementation were baffling.

### **3.4.2 What went wrong ?**

As we have already mentioned, once the Concession agreement was signed, a three-year period of astonishing inactivity in the construction process took place. After analyzing the Concession contract, some issues remain, at least, doubtful. Therefore, it seems clear that :

- The Concessionaire did not fulfill the definitive “commencement deadline for the first segment ”, stipulated in the Concession contract for March 10, 1999. This situation resulted from the lack of financial closure for the project. Indeed, some contract clauses were too lax, especially those concerning the issue of risk distribution between the Concessionaire and the State. Particularly, there were no clauses making clear the State’s guarantees given

to the Concessionaire for credit with investment banks <sup>5</sup>. As a result, the Concessionaire was not able to finalize his financial project.

- The other side of the same coin reveals that the auction jury members (the State Agency) were (at least should be) in perfect possession of information on the financial situation of the bidders, as required for the tender. Besides some restrictions on shareholders' equity, there were some other legal obligations such as minimum fund gathering by the Concessionaire <sup>6</sup>. Therefore, two possibilities emerge : either the jury members were incompetent, or the contracting offer was incomplete.

### 3.4.3 What are the theoretical suggestions ?

When we look at the theory, some crucial questions must be clarified. Logically, one may ask whether a “perfect auction” exists. Surely, the trivial response is “no”, but that does not explain some procedural errors. As highlighted by Williamson

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<sup>5</sup>The Concessionaire was perfectly sure that (taking into consideration its equity weakness) he would not be able to build without the State's guarantees for credits. This is the best example of the Concessionaire's opportunism which is seen in his public statement stressing that

“...based on the analysis of the toll revenues generated so far showing slight excess over the assumed levels, it may be said that there is no risk that the State Treasury guarantee will be exercised”.

<sup>6</sup>At the level of 100% coverage of the first segment. The final Financial Plan for the first section was settled down in 2000 (!) and annexed to the initial Concession Agreement. The lump sum contract price for the investment was agreed at EUR 875 million (EUR 637.5 million excluding indirect costs). The funds required to meet the foregoing costs came from three major sources :

- i** equity coming from the Concessionaire's shareholders accounting for more than 27% of the total development cost ;
- ii** loans in the form of the bond issue and supplier credit ;
- iii** Senior Loan ;
- iv** the loan from the European Investment Bank (never granted).

[1976], the effectiveness of franchise bidding firstly depends on the ability of the franchisor to characterize the service he wants to put to tender. Yvrande-Billon [2005] explains that an adequate service specification is important in franchising, first as a basis for competition in the bidding process and, secondly, to set the benchmarks for evaluating bids. Therefore, it is important for the franchisor to refine his call for tender as much as possible. If he fails, the costs of bidding may increase and applicants may not be interested in the auction, discouraged by the high uncertainty of the project. Furthermore, as mentioned in Bajari et al.[2003], a vague description of the subject matter of auction may lead to adverse selection and end by selection of the most opportunistic candidate. If the call for tender is incomplete and investment is complex, the auction process may result in choosing the bidder who can exploit the contractual blanks and thus may make the most of the fact that the contract in question is likely to fail. A potential danger of this situation consists in the opportunistic anticipation of a renegotiation of contract by the auction winner, who may benefit from the financial compensation stipulated in avoidance clauses.

Another problem with the auction process is intrinsic to the nature of concession agreements. For instance Posner [1972] stresses that

“[p.113]...the concession method deprives the franchise system of one of its most attractive features, ease of administration, since when the franchise is awarded to the higher bidder the process of choosing among applicants involves a minimum of administrative machinery and official discretion”.



Indeed, the simplicity of the auction process could be preserved only if the concession concerned less complex investment. In the case of infrastructure concessions, one should remember that a highway concession in the PPP scheme typically covers the financing, building and operating of a road. Thus, is there a tenable means of anticipating for all factors? And, similarly, is there a solution for internalizing the plurality of states of nature that might occur?

With respect to the transaction cost economics framework, in the case of an undoubtedly incomplete long term contract, the extreme importance of the ex ante stage, that is the auction process, become obvious. It follows that in the ex ante stage it should be anticipated by the franchisor that contract renegotiation will inevitably occur. Summarizing, it appears that the contract incompleteness should be taken into consideration at the very beginning of the project.

On the other hand, one could imagine how difficult it is to decide ex ante what has to be done ex post. We fully agree with Crocker and Masten [1996] who argue that, as the transaction becomes more complex or uncertain, contracts are likely to become more

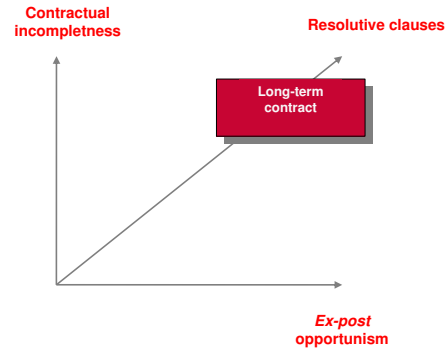
“...’rational’ in character. Rather than attempting to lay out a detailed specification of the terms of the agreement, relational contracts attempt simply to establish the process through which future terms of trade will be determined<sup>7</sup>, or, to establish, in effect, a constitution governing the ongoing relationships”(Goldberg [1976], p.428).

In Figure 1, we have depicted an example of the “optimal” long-term contract. It is shown that the most adapted contract anticipates for contingencies not covered by the agreement and the manner of resolving them.

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<sup>7</sup>p.9

FIG. 3.1 – Long-term contract



Some remarks have to be made concerning the State guarantees for credit by the Concessionaire. Because of the high risk associated with highway franchises, lenders (investment banks) have refused to grant loans to the Concessionaire unless the government guarantees the debt. Engel et al.[2001] qualify this situation as an usual pitfall for the State. Firstly, guarantees reduce the incentives for lenders

to screen projects and monitor their performance. A second danger concerns the overestimation of demand such that the Concessionaire could not face significant losses if traffic turns out to be below expectations, that is to say, the whole investment might become a “white elephant”. In addition we argue that bailing out the Concessionaire stands against the idea of PPP, where the State is rather looking to be free of financial commitment, as its Treasury cannot afford the investment alone. Therefore, we are pointing out that the liability of the State<sup>8</sup> in the case of the investment fiasco is excessive.

#### 3.4.4 What should have been done ?

We are trying here to enumerate some propositions in order to avoid an impasse situation in the future. We do not claim a “miracle” solution. Nevertheless, it seems that the call for tender *needs to be more explicit* in that the financing structure and risk sharing ought to be specified<sup>9</sup>. In our opinion, the weakness of Polish equities constituted a sufficient incentive to broaden the call for tender. A strong start-up capital mixed with the know-how of foreign investors (capital groups) would have accelerated the construction. But, paradoxically, foreign investors could not have felt attracted by the blanks in the project and the low chances of taking money out. Therefore, a preliminary independent financial audit should always be welcomed. Finally, the presence of clear and precise avoidance or retraction (annulation) clauses not only smoothes bilateral relations but also creates an atmosphere of trust.

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<sup>8</sup>By “the liability” we mean all legal responsibilities of the State excepting the statutory ones, such as being the the party to the Concession agreement or the land owner.

<sup>9</sup>This can be done by simulating a least-present-value-of-revenue (LPVR) auction. For details see Engel et al.[2002]

## 3.5 The supervision problem

### 3.5.1 The story

The Ministry of Infrastructure entrusted the supervision of highway construction to The Highways Construction and Exploitation Agency (HCEA). This is a common example of delegation of authority, as The Head of Agency accomplishes public management and supervision tasks on behalf of the Government. We notify that The Head of Agency is directly subordinate to his administrative superior, and thus, supposed to execute his decisions. In the case of the A2 Concession, however, the coordination between those two institutions was not as smooth and efficient as it should have been.

As we remember from the previous section, the construction of the first segment of the A2 did not start because of the lack of financial closure. In order to avoid this unfortunate situation in the future, the Concession Agreement was annexed, providing a new deadline for financial closure. Furthermore, there were some new clauses setting forth the possibility of cancellation once the deadline was passed. The new deadline was scheduled for the end of July, and, unfortunately, was also missed. In this case, the Concession Agreement should have been cancelled by the State. But it did not happen. In spite of the Ministry of Infrastructure's wish to cancel, the Director of HCEA promoted his own vision of problem resolution, wanting to spread the Concession Agreement over a new consortium. This free-rider behavior was tolerated by The Minister of Infrastructure, who surely knew that - from the legal point of view - a kind of substitution of the Concession part was not possible (a new auction would have been required). Furthermore, the incorporation idea was a disaster, as the Concessionaire (AW SA) would never agree to

integrate with another firm, as it was not interested in sharing profits. It is also important to mention that the contract renegotiation feasibility studies ordered by the HCEA cannot be considered as objective, since the audit provider company (PriceWaterhouseCoopers) was formerly hired by the AW SA as a consultant body to negotiate the initial Concession Agreement.

### 3.5.2 What are the theoretical suggestions ?

In the face of the story above, one can imagine that the public agency is a haven for inefficiency. However, this is a very simplistic view of reality. Generally, the “bureaucratic” inefficiencies (as we think they should be called) result from the lack of coordination in the decision-making process. In the TCT, the governance structure mainly depends on the asset specificity (nature of investment), degree of uncertainty and type of transaction (and its frequency)<sup>10</sup>. Therefore, in our case, “internalization” of Concession management and its follow-up in the form of hierarchy was appropriate. The problems rather come from misunderstanding of the authority-hierarchy relation. It should be remembered that

“ we can talk about hierarchical relations between the subsets of participants A and B when the subset B refers to the subset A’s goals rather than to its own in decision-making process and subordinates to A’s decision in the case of conflict”. (Guillaume [1972])

When we turn to analyze the situation between the public agency (The Highways Construction and Exploitation Agency) and its superior (The Ministry of Infrastructure) we can ascertain the lack of *acceptance* and *validation* of hierarchy

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<sup>10</sup>For an exhaustive review of organizational theory see Ménard [1996].

by the public agency. There were two reasons for non-execution of the superior's decision : firstly, the conflict of goals, and secondly, the acquiescence to insubordination. The latter results from the absence of a control mechanism. Furthermore, the control procedures undertaken by the superior and thus aimed at the subordinates are necessary for the execution of the decisions. It follows that the inefficiency of the State in the Concession-managing process was a direct consequence of the "weak" coercive mechanism. It is important to add that an efficient control procedure depends on an adequate span of control<sup>11</sup>. As we have already mentioned, the superior's decisions were ignored by the intermediary link in the hierarchical chain, namely the Minister's Secretary General. In spite of the fact that the hierarchical structure was simple, and thus the span of control limited (only one intermediary level), serious inefficiencies resulted.

The lack of control regarding the final subordinate - the Concessionaire (and the party of agreement at the same time!) had also contributed to the investment fiasco. By adapting the initial Calvo-Wellisz [1978] model to the grantor-concessionaire relation, we will show the extreme importance of supervision.

Primarily, we assume that the concessionaire's utility index ( $U$ ) depends on its future profit<sup>12</sup> ( $\Pi$ ), and effort ( $e$ ) :

$$U = u(\Pi) - v(e), \quad (3.1)$$

$$\Pi \geq 0, 0 \leq e \leq 1,$$

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<sup>11</sup>The span of control (SOC) is a simple managerial construct which identifies or regulates the amount of direct supervision that exists between a superior and his direct subordinates within an organization. For further readings see Yassine [2005]

<sup>12</sup>We assume that this is the present value of future tool incomes, and may be approximately given as LPVR.

and  $u' \geq 0$ ,  $v' \geq 0$ ,  $u'' \leq 0$ ,  $v'' \geq 0$ . If  $e = 1$ , the concessionaire is fully effective ; if  $e = 0$ , he is completely idle. The presence of a monitoring system implies that the supervision of the concessionaire's effort (i.e. progress of investment) is less costly than the direct measurement of his marginal product. Furthermore, effective supervision requires the imposition of penalties for substandard work. Let  $P$  be the probability of the concessionaire task being checked by his superior (i.e. The Highways Construction and Exploitation Agency). If the concessionaire is not checked, he is presumed to have made the maximum effort ( $e = 1$ ) and he is given a credit guarantee  $g$  (measured in units of future discounted toll revenue). On the other hand, if the concessionaire's real performance is checked, his level of effort  $e$  is revealed and he gets only a part of credit guarantee  $eg$ , involving a penalty equal to  $(1 - e)g$ . Assuming profit equals guarantee of credit attribution, expected utility,  $\gamma$ , associated with selecting a level of effort equal to  $e$  is given by :

$$\gamma = P[u(eg) - v(e)] + (1 - P)[u(g) - v(e)] \quad (3.2)$$

In his turn, the concessionaire chooses  $e$  in order to maximize his welfare and defines

$$\Gamma(P, g) = \max_{0 \leq e \leq 1} \gamma \quad (3.3)$$

For simplicity, we also assume that there exists a unique  $e$  associated with (3) and denote it

$$e = E(P, g) \quad (3.4)$$

Thus, it is easy to see that

$$\frac{\partial E}{\partial P} \geq 0 \quad (3.5)$$

and

$$\frac{\partial E}{\partial g} \geq 0 \cup \frac{\partial E}{\partial g} < 0 \quad (3.6)$$

**Proposition 1** *The implementation of a supervision scheme increases the level of effort of the supervisee. At the same time, one cannot be sure whether application of penalties in the case of substandard work has a negative or positive impact on the supervisee's performance. It is important to say that the very awareness of being checked works as an incentive mechanism, as each and every supervisee prefers not to be checked. It follows that for a supervisor, providing a spontaneous and random check seems to be the optimal solution.*

**Proof 1** *(Immediate)*

For any function  $E(\Delta)$ , we know that  $e \geq 0$ ,  $P > 0$  and  $g \geq 0$ . In order to define the sign of partial derivatives of  $E(\Delta)$ , we simply apply their definition formulas.

$$E'_P(P_0, g_0) = \frac{\partial E}{\partial P}(P_0, g_0) = \lim_{P \rightarrow P_0} \underbrace{\frac{\overbrace{E(P, g_0)}^{\geq 0} - \overbrace{E(P_0, g_0)}^{=0}}{\underbrace{P - P_0}_{> 0}}}_{\geq 0}$$

$$E'_g(P_0, g_0) = \frac{\partial E}{\partial g}(P_0, g_0) = \lim_{g \rightarrow g_0} \underbrace{\frac{E(P_0, g) - E(P_0, g_0)}{g - g_0}}_{\text{sign undetermined}}$$

■



### 3.5.3 What should have been done ?

From now on it is clear, that the Concession agreement should have been *unilaterally* and *immediately cancelled* at the second financial closure deadline. The Infrastructure Ministry *should have ordered* its cancellation by his subordinate (i.e. Chief of The Highways Construction and Exploitation Agency). Tolerating the Concessionaire's inactivity brought about by two consecutive financial closures led to a contract renegotiation procedure (the renegotiation clauses added to the concession agreement constitute a brand new text, totally cancelling the initial one, so it is really difficult to call it a "rider"). Furthermore, the renegotiation process placed the State in a suppliant position. Finally, once the renegotiation had occurred, the State party *should not* have agreed to make the new text confidential, firstly, because the investment involved public expenditure and secondly, because the confidentiality excluded an independent audit.

## 3.6 Conclusion

In this chapter we have emphasized the most striking problems which affected the very early stages of a highway construction program in Poland. The PPP concept failed to become successful because of the errors committed during the auction process. In the case of the A2 highway concession, it seems that the pre-qualification step was skimped, making impossible to shortlist bidders with the required financial means and expertise. A way to avoid this kind of situation in the future is to strengthen the domestic capital market. Strong domestic finance is preferable, all else being equal, because it raises fewer political sensitivities and avoids the complications of exchange rate risks. At the other extreme, it appears

that more consideration should be given to the use of concession contracts that are shorter and simpler, so that they have a greater chance of being complete. It is also clear that the management of concession agreements should be simplified and monitoring schemes ought to be implemented in order to prevent a contractor's opportunistic and/or free-rider behavior. Finally, the State should be extremely careful while delegating authority : as we have seen, softening of subordination in the hierarchical chain may lead to bureaucratic pitfalls, depriving it from one of its more desirable features, such as ease of administration instead.

It is important to mention that the A2 highway construction is continuing, in spite of the renegotiation process, and one may expect that it will be possible to reach the German border by 2008. It seems that the government has learned its lesson and is keen to engage more budgetary sources in infrastructure projects. It has very strong monetary incentives to do so, as Poland will receive substantial aid from EU funds (the EU budget for 2007-2013 projects EUR 91 bn for Poland, roughly EUR 20 bn of which will be spent on road and highway construction). Nevertheless, extreme vigilance is required concerning its spending. The Ministry of Infrastructure's recent statement informs us that the "government's ambition" is to use all resources assigned for road construction, as in 2005 Poland had used only 63% of all funds available for this purpose. Finally, the recent experiments with a new financing system called "Special Purpose Issue" need to be watched, as the bureaucratic machinery is not very keen on recognizing its own errors.

## 3.7 Appendix A

### 3.7.1 Trans-European Networks

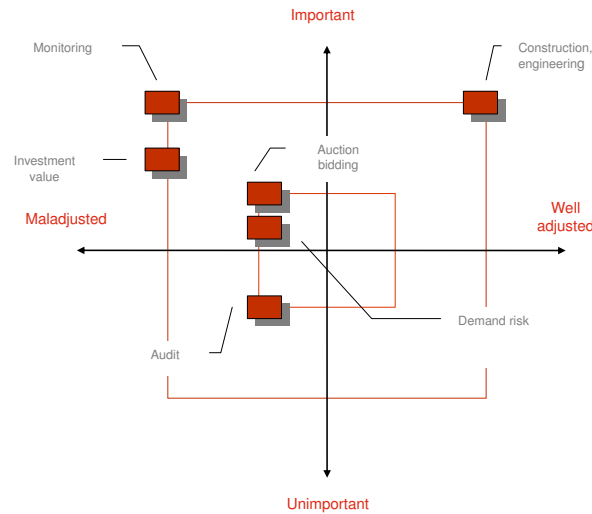
As stressed by the European Commission, transport infrastructure plays a key role in growth and regional convergence. This challenge is being faced at regional, local and European level, in the framework of the common transport policy and the trans-European transport network. In this respect, in April 2004, the European Parliament and Council identified 30 priority projects that represent an investment of EUR 225 billion by 2020. In July 2005, the Commission defined the political and technical coordination procedures for achieving the TEN-T, including the appointment of six European co-ordinators and the creation of an executive agency. From a regional policy point of view, this should play a major role in developing quality transport during the 2007-2013 period in accordance with the priority objectives proposed by the Commission, i.e. convergence, regional competitiveness and employment and territorial co-operation. Facing two recent enlargements, the European Commission has decided to target the North-South axis for the TEN-T project. Thus, the fast growing and anticipated west and eastbound exchange traffic seems to be underestimated.

In Poland the impression was that the New European Space of the 21<sup>st</sup> century would probably create a renaissance of the grand East - West or West - East trajectory, which had been destroyed by the Iron Curtain in the second half of the 20<sup>th</sup> century (Kuklinski [2002]). For Polish economists it was not excluded, that by the middle of the 21<sup>st</sup> century - the West - Eastern trajectory would be more important than the North -South - Eastern one. Certainly, the Belarus - Poland corridor is the most important for transit flows between Russia and the EU

(especially for eastbound transports) (Laurila [2001]). The large-scale European Investment Program started with the construction of the French TGV-East at the beginning of 2002. This project was considered by Poles as a confirmation of priority given to the West-East axis. The Great East Project was elaborated in 1994 by DATAR in the context of future Eastern enlargement of the EU. For the Central and Eastern Europe the TGV-project is very important. At regional level the hub of development will be created around the TGV stations (the struggle between Nancy, Metz and Strasbourg for the TGV trajectory is highly instructive).

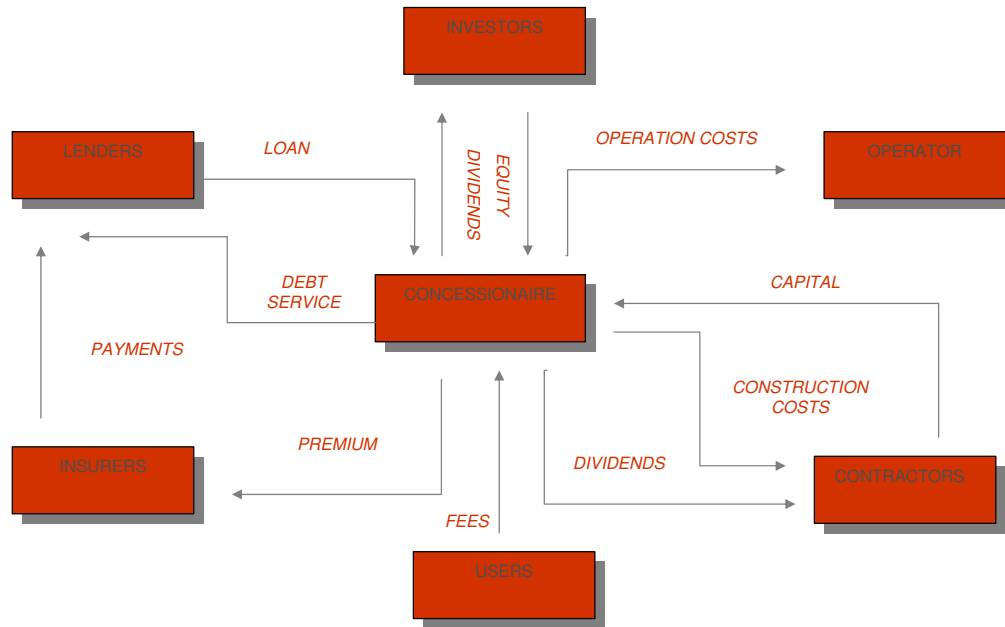
### 3.8 Appendix B

FIG. 3.2 – A2 Investment Appraisal



## 3.9 Appendix C

FIG. 3.3 – Financial flows in Concession agreement



## References

BAJARI P., MCMILLAN R., TADELIS S. [2003], "Auctions versus Negotiations in Procurement : An Empirical Analysis", *NBR working papers*, no.w9757, June

- CALVO G., WELLISZ S. [1978], "Supervision, Loss of Control and the Optimal size of the Firm", *Journal of Political Economy*, vol.86, 943-952
- CROCKER K.J., MASTEN S.E. [1996], "Regulation and Administered Contracts Revisited : Lessons from Transaction-Cost Economics for Public Utility Regulation", *Journal of Regulatory Economics*, vol.9, 5-39
- DESPINEY B., PASLAWSKI J. [2002], "Le developpement des transports polonais-l'une des priorites de la transition", *Galileu. Revista de economia e Direito*, vol.V, no.2
- ENGEL E., FISCHER R., GALETOVIS A. [1997], "Highway Franchising : Pitfalls and Opportunities", *American Economic Review*, vol.87, no.2, 68-72
- GOLDBERG V.P. [1976], "Regulation and Administered Contracts", *Bell Journal of Economics*, vol.7, no.2, 426-448
- GUILLAUME M. [1972], "Les modeles de la decision", Paris, PUF
- KUKLINSKI A. [2002], "Towards a New European Space. The Trajectory London-Paris-Moscow. An International Programme for the years 2002-2006. A memorandum", Warsaw
- LAURILA J. [2001], "Transit Transport Between Russia and the EU", *Russian Economic Trends*, no.2
- MENARD C. [1996], "Why Organizations Matter. A Journey Away from a Fairy Tale", *Atlantic Economic Journal*, vol.24, 281-300
- MINISTERSTWO TRANSPORTU I BUDOWNICTWA [2006], "Program Budowy Autostrad i Drog Ekspresowych w Latach 2006-2013" [http://www.mtib.gov.pl/pliki/aktualnosci\\_sg/2174/doc/prezentacja\\_strykow.pdf](http://www.mtib.gov.pl/pliki/aktualnosci_sg/2174/doc/prezentacja_strykow.pdf)

- NAJWYZSZA IZBA KONTROLI [2001], "Informacja o wynikach kontroli budowy autostrad w Polsce" [http://www.nik.gov.pl/wyniki\\_kontroli/dokumenty/2001023.pdf](http://www.nik.gov.pl/wyniki_kontroli/dokumenty/2001023.pdf)
- POSNER R.A. [1972], "The Appropriate Scope of Regulation in the Cable Television Industry", *The Bell journal of Economics and Management Science*, vol.3, no.1, 98-129
- WILLIAMSON O. E. [1976], "Franchise Bidding for Natural Monopolies - In General and with Respect to CATV", *Bell Journal of Economics*, vol.7, no.1, 73-104
- YASSINE A., GOLDBERG D., YU T.L. [2005], "Simple Models of hierarchical Organizations", *mimeo*
- YVRANDE-BILLON A. [2005], "The attribution Process of Delegation Contracts in the French Urban Transport Sector : Why is Competitive Tendering a Myth?", forthcoming *Annals of Public and Cooperative Economics*

# Chapitre 4

## The Demand for Private Health Care in Poland

### 4.1 Introduction

**H**EALTH is a public service almost by definition, though private insurance is expected to play a greater financing role. Finding the right balance between public and private health coverage and building the appropriate regulatory framework is an ongoing policy challenge. The background in all Central and Eastern European countries is similar - a rapidly deteriorating, underfunded, undermanaged and depersonalized health system struggling with rapidly increasing demand for services, hospital beds, physicians and other healthcare professionals. With this in mind, and with the emergence of a fast-growing middle class and an increase in personal and disposable income, the rapid growth of private supplementary health coverage is just a matter of time. Several transition countries are experimenting new solutions in order to satisfy health care needs of their citizens. They are trying



to settle down a mix of public/private medical services. However, reforming health system is not an easy affair, so a preliminary study of demand for private health is highly desirable.

In this chapter we look at the demand for public and private healthcare in Poland, as representative of a transition economy, one that under Socialist regime of the latter half of the 20<sup>th</sup> century was limited to just public healthcare by the government. Our idea is to focus on the demand on the ability for the public health care system to maintain its quality. Within such a study we therefore contribute to the debate on whether a strong private market for healthcare can co-exist with the traditional public health services in transitional economies.

Free and general access to health services, guaranteed since the constitution of 1952, has long been considered the foundation of Polish health system. Accordingly, the national budget of the government has historically been the main source of health financing. Total health expenditure in Poland, public and private, is reported to be between 5-6% of GDP which is quite similar to that of several other Est-European countries. It means that public spending on health care, as a percentage of GDP is rather similar to Romania or Bulgaria, who spend around 6% of GDP (non-member states of OECD), and is lower compared to West European countries like France, Germany and Sweden, where expenditure on health care has averaged between 8% to 11% of GDP<sup>1</sup>. Although 72% of funding comes from the public purse, the use of private health care services is rising. Increasing use of private health care in Poland is mainly generated by two factors : a general enrichment of population and rapidly growing “waiting lists” for specialistic care.

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<sup>1</sup>Source : “Projecting OECD health and long-term expenditures : What are the main drivers?”, Economics Department Working Paper 477, 2005

In addition, more and more companies are offering the private health insurance plans for their employees. Since mid-nineties, there has been a rapid growth of private health centers (middle-size towns, cities) and private hospitals and clinics (big cities).

This growth affects public provision in a number of ways. First, as the private sector operates alongside a public sector, this reduces the availability of free care, as long as labor in the national health care is also employed in the private sector, predominantly simultaneously. In the short run, a rapid expansion in private demand would reduce the availability of medical staff to the public sector and so reduce the quality of national health services. Propper [2000] underlines that an increase in the use of private services may be accompanied by a decrease in the support for, and willingness to pay, taxes for the public sector services. Second, since Poland's accession to the European Union and the possibility for Polish medical profession to work legally abroad, high wages have already attracted 4.3% of physicians registered in Poland (October 2006)<sup>2</sup>. Migration issue concerns especially extremely high skilled specialists, so in the big cities public specialistic emergency services become unavailable. In consequence, urgent specialistic help may only be found in private hospitals and clinics. That is why people become more and more eager to pay for additional medical insurance, which is seen as a guarantee of immediate and good quality medical help.

Growing demand for private health care affects the public provision in a way that it strengthens competition for medical services. The notion that private competition is a good idea rests on two key notions (Stockman [1981], Keane [2004]) :

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<sup>2</sup>Source : Polish Chamber of Physicians

(i) Choice is good. Public insurance is “one size fits all”, while private firms can provide plans better tailored to individual preferences. (ii) Competition among alternative plans will promote market efficiency, because plans will have to keep expenses down to survive in a competitive market place.

Although there has recently been a significant increase in the number of evaluative studies on public/private health provision, scarce empirical evidence exists on health care markets in transition countries. This is mainly because of the lack of systematic survey data on not only health care preferences, but more generally on living conditions of population in these countries. However, extremely rich literature on the link between public and private health sectors in the US and UK has been of great interest in terms of economic policies and individual choice and use of health care services.

Although some analysis have identified the importance of income in the use of private health services (Papadakis et al.[1987], Calnan et al.[1993], Propper [1989,1993]), this literature has not been able to establish whether the distinct economic and social profile of private sector users is simply due to individual fixed effects or whether changes in income or attitudes would increase private sector use. Propper [2000] was the first to investigate these issues and to examine the dynamics of private sector use (whether use is related to past demand, or whether current demand for one private service is accompanied by private demand for another). Economic efficiency of mixed public/private health insurance has also been treated (Besley [1989], Selden [1993], Blomqvist et al. [1997]), dealing with such issues as equity, adverse selection and administration of health care. Blomqvist [1997] results show that a mixed system in which consumers are allowed to have

supplementary private insurance in addition to a government plan is less efficient than the equilibrium in a purely private competitive market and it is also less efficient than an optimally designed governmental plan. Recent economic literature rises also a question of quality of medical services and its impact on the demand for private health care. For instance Hanson et al.[2004] use household data from Cyprus to estimate the effect of quality on patient's choice between public and private outpatient care. They find that patients' choice of provider is sensitive to quality, and that interpersonal quality (amount of time spent by the doctor with the patient, the courtesy and helpfulness of the doctor), and that interpersonal quality is more important than either technical quality or system-related factors. An interesting finding comes from Hoel and Saether [2003] paper. Investigation on waiting time for public health care came up with an astonishing ascertainment that patients choosing public care may be better off with waiting time than without. The reason is that waiting time induces patients with high waiting costs to choose private treatment, thus reducing the cost of public health care that everyone pays for. Finally, the work of Long et al.[2005] shows that having a supplementary health coverage in the US improves access to care, but only for low-income beneficiaries. In addition, Finkelstein [2004] finds that US Medicare coverage does not have substantial effects on coverage in residual private insurance markets.

In our study we focus on the dynamics of private sector use. Following Propper [2000] we estimate a model of health care services which takes into account the choice a potential user of care in Poland has among the private sector and the NHF (National Health Fund). It examines not only hospital and physician use but also the use of dental and other services based in community. The estimated

model allows past use to affect the present use of health services. The data set used is “Social diagnosis : objective and subjective quality of life in Poland” provided by Polish Council for Social Monitoring. This data set contains extremely rich and detailed information on living conditions of households (income, nutrition, housing conditions, education, health care) as well as the individual impressions on quality of life in Poland. Health care is the most extensive part of this data set, pertaining to households. It permits to determine how often the household members took advantage of health care services, in what form and in which health care units, who pays for medical treatment, what are the reasons for selection of specific health care units, what health care needs are unfulfilled due to financial reasons, how much money (excluding the health insurance premium) was spent by households from their own budgets on various expenses associated with health care within the previous 3 months, how the households assess their access to health care and how well they are informed of the rules of functioning of the health care system.

We start with a short description of financing health care in Poland. then economic model of demand for private health care is detailed and econometrically tested in section 3. Two following sections analyze the results. Finally, the last section concludes.

## 4.2 Financing health system and private health care in Poland

The national budget has historically been the main source of health care financing. The Ministry of Finance funded the health care system from the central budget, although other sources of financing began to be more significant after 1990. The government proportion of total health care funding has dropped throughout the 1990s as private sources have risen.

Since 1950s, the Polish State had provided universal access to health services. Health sector reforms in the 1990s have sought to maintain this commitment. The 1991 “Health Care Institutions Act” and subsequent regulations set out a range of basic therapy and cosmetic surgery. It also excluded some services in health resorts (spas), but those who are entitled to health care can still obtain free dental care and balneotherapy at these spas.

The 1997 “General Health Insurance Act”, introduced in January 1999, changed the system of financing. Funds then came from two main sources. First, the insurance funds financed the direct costs of health services to patients through contracts with service providers. Second, government budgets (state, voivodships or gminas) continued to finance public health services, the hospital costs of all health services, and specialist tertiary care services (such as organ transplants) and very expensive drugs (such as immunosuppressive drugs).

In the reformed health care system, the involvement of the state budget and self-government budgets in health care financing is very limited. Now expenditures from those budgets play only elementary role. In general, the public health targets health insurance premiums for specific groups of the population (the unemployed

receiving social security benefits, persons receiving social pensions, farmers, war veterans and others), and investments in public health care institutions are financed from those budgets. The major part of funds allocated for the implementation of health programmes is transferred to the National Health Fund. Funds from the state budget are used to cover the costs of health services provided in life threatening situations, in case of accidents to childbirth to persons who are not insured and thus do not pay health insurance premiums. The Minister of Health may give the consent for covering the costs of treatment or diagnostic procedures not available in the country to be performed abroad. The list of highly specialized procedures, financed from the budget of the Ministry of Health on the basis of contracts signed with service providers, has been cut down. The responsibility for contracting numerous procedures, formerly placed on that list, has been taken over by the National Health Fund and its branches.

In sum, a sick person can consult a general practitioner or a specialist in an outpatient clinic, receive hospital treatment and dental treatment, use ambulance and medical transport services. Patients need a referral if they want to receive hospital treatment or see a specialist, except for gynecologists, dermatologists, venereologists, oncologists, ophthalmologists, psychiatrists and dental surgeons. In the event of a sudden illness or accident, the patient can call for an ambulance or go directly to a hospital emergency room.

However, the public health service is contending with the shortage of funds. In spite of some health service establishments with ultramodern equipment, Poland has poorly equipped clinics filled with poor retirees waiting in long lines to see a doctor. As a result, patients who have money and do not want to wait for treatment increasingly choose subscription medical services or private healthcare

services, despite the fact that by doing so the patients cannot use the contribution they obligatory pay for health insurance because private health funds are still non-existent in Poland. Following in the footsteps of large multinational corporations, there are about 20 medical companies which offer medical services for a regular monthly fee appeared on the Polish market in the last decade. These include : Medcover, Damian Medical Center, Enel-Med Medical Center, Medycyna Rodzinna and Falck Medycyna Sp. z o.o.

The problem of Polish health care is predominantly the lack of funds which collides with societal expectation shaped by almost 50 years of communism, where a well staffed and free health service was one of the few tangible benefits of a system that otherwise produced economic chaos. Following Poland's entry into EU in 2004, Poles began to compare themselves to their neighbors in the West, and began to demand similar level of health care to Germany and France. Doctors also began to demand higher wages.

Since early nineties, subsequent governments have attempted to fix the system and make it more efficient, often producing even more confusion and disarray in the process. Government instability has not helped. Between 2001 and 2005, Poland had five health ministers.

In the 1990s, there was a move toward decentralization, with the creation of regional funds responsible for health spending. In 2002, the system was overturned and centralized, creating a National Health Fund (NHF) responsible for about 80% of public spending on health.

Although the NHF had been the brainchild of ex-communist left, Poland's new centre-right government promised that there would be no more health care revolutions, and that constant efforts would be made to improve the existing system.



Current Minister of Health is trying to deal with those complex problems at once. In addition to the salary increase, health-care spending overall is increasing by 5 billion zlotys next year to 41 billion, a difficult feat at a time when the government has promised that the deficit will not exceed 30 billion zlotys and the European Commission is criticizing the government's budget. Health-insurance contributions are also being increased from 8.75% to 9% of wages.

Minister's plan is to present a "basket" of health services to parliament this year, spelling out exactly what will be covered by the government. *"The essence of the basket is to tell society that not everything is free"* says the Minister.

## 4.3 The demand for private health

### 4.3.1 The economic model

In this paper we follow Propper [2000] model of demand where public and private care coexist. We use this framework to explore the impact of income, price and quality of the public alternative, and past use on the current demand for private health care. This model follows also Goddard et al. [1994] in allowing individuals to have three discrete choices (to use private care, to use public care and no medical care). These choices will be in turn affected by the costs and the quality of public care, and the costs and quality of private care.

For any individual, indexed by  $i$ , let  $V_i$  be the benefit of private health care and  $p_i$  be the cost relative to income). For simplicity, we assume that the clinical benefits of private care are the same as those arising from public care. It means that private care provision must have at least the quality of its public alternative

(otherwise no one would buy the service). Let this quality difference be represented by a single parameter  $\theta$ . It can be translated as waiting time, or more generally it includes other factors (such as the ability to choose the exact date and location of treatment). Each individual varies in his valuation of this quality by the parameter  $g_i$ . If  $\theta$  is thought as waiting time,  $g_i$  can be thought as the rate at which his health care benefit decreases, as the wait imposes costs on individuals in terms of lost earnings or further pain (Goddard et al.[1998]). The value of public treatment for individual  $i$  is  $V_i \exp(-g_i\theta)$ . Although public care has no user direct price, the individual bears the costs of access to public facilities ( $c_i$ ). It follows that the potential user is indifferent between private and public care when

$$V_i - V_i \exp(-g_i\theta) = p_i - c_i \quad (4.1)$$

and the individual is indifferent between private care and no care when

$$V_i = p_i \quad (4.2)$$

and, finally, the individual is indifferent between public care and no care when

$$V_i - V_i \exp(-g_i\theta) = c_i. \quad (4.3)$$

We see that when  $p_i$  decreases, the use of private services grows up, accompanied by a decrease in public care use and no care. When  $c_i$  diminishes, there will be the more and more individuals to prefer public care, reducing the use of private and no care. An increase in  $g_i$  and  $\theta$  will shift up the use of private health, reduce the use of public care and increase no care alternative. When  $V_i$  rises, the use of both,

private and public care increases.

Obviously, all these parameters will vary across individuals. Concerning  $V_i$ , different individuals with the same level of clinical need may nevertheless perceive that they would receive very different benefits from treatment, depending, for instance, on their social and economic circumstances. This parameter is likely to be influenced by the advice of doctors and other medical staff. It also reflects the health status of the individual (severity of illness, degree of his risk aversion). Taking  $\theta$  as waiting time,  $g_i$  is expected to be a positive function of income and employment conditions. When  $\theta$  is the quality of public care,  $g_i$  is the valuation of the quality of public services. This quality can of course vary between providers and between population groups. Costs of private and other alternatives of care vary, and may depend on the individual's income, medical insurance coverage, educational and cultural background. In particular, the relative cost of private health care is greater for the poor than for the rich.

The nature of medical care involves prices to be a function of past use of services. Literature underlines the importance of transaction costs affecting access to care. Costs of search affect not only patients but also health care providers. Moreover, information asymmetry makes that trust becomes a very important issue. As an individual makes an effort communicating his illness history, he may be less eager to renew this effort. Thus, he will less likely want to change doctor/health center. This is valid also for those individuals who have recently used, say, public care; having lower public care search costs, they will probably use it again. In sum, current use of health services highly depends on past experiences.

### 4.3.2 The econometric model

In order to model the choice that the individual makes between public, private and no care we define a set of binary variables to indicate which alternative  $j$  is chosen. Among three alternatives,  $j = 1$  stands for no care, while  $j = 2$  denotes public care and  $j = 3$  private care. With independent observations, the log-likelihood for a multinomial model (MNL) takes the form

$$\log L = \sum_{i=1}^n m_{ij} \log P_{ij}. \quad (4.4)$$

The MNL logit uses,

$$P_{ij} = \frac{\exp(x_i \beta_j)}{\sum_{m=1}^J \exp(x_i \beta_m)} \quad (4.5)$$

with a normalization that  $\beta_{j=1} = 0 \cup \beta_{j=2} = 0 \cup \beta_{j=3} = 0$ . The normalization reflects the fact that only relative probabilities can be identified, with respect to the base alternative. The valuation associated with each alternative can be derived from McFadden's random utility model. We define individual  $i$ 's utility from choice  $j$  as

$$U_{ij} = z_i \alpha_j + x_{ij} \beta + \epsilon_{ij} \quad (4.6)$$

where  $z$  denotes characteristics that vary across individuals but not across the choices, and  $x$  denotes characteristics that vary across the choices. The model assumes that individuals are aware of the unobservable characteristics  $\epsilon_{ij}$ , and the individual is assumed to choose the alternative that gives the maximum utility, so choices are based on net utilities ( $P(m_{ij} > m_{ki})$  for all  $m \neq j$ ). Typically the  $\epsilon_{ij}$  are assumed to be type I extreme value, which has the convenient property that the difference between two Extreme Value I variables has a logistic distribution.

Thus the statistical model that results from the choice of alternative is the MNL model :

$$P(m_i = j) = \frac{\exp(z_i\alpha_j + x_{ij}\beta)}{\sum_{k=1}^J \exp(z_i\alpha_k + x_{ik}\beta)} \quad (4.7)$$

where  $m_i$  is the observed choice of individual  $i$ .

The specific characteristics that will influence the choice the individual makes include income and education status, the costs of accessing each service (which will be a function of past use) and the perceived quality of health service (personal opinion on health service). Thus, the net valuation of alternative  $j$  will depend on :

$$m_{i,j}^* = f(X_i, m_{i,j_{t-1}}; \epsilon_{ij}), j = 1, 2, 3 \quad (4.8)$$

where  $X_i$  is a set of personal and socio-economic variables including income, and subjective impressions on health service provided,  $m_{i,j_{t-1}}$  is the use of alternative  $j$  in the last period, and  $\epsilon_{ij}$  is white noise.

The data base permits investigation on health care choice at three time points ( $s$ ). It means that the data allows us to evaluate the impact of past use of one service on another and the past use of one alternative on another. Allowing for “cross-service” and “cross-alternative” effects, the final form of the utility for alternative  $j$  of service  $s$  at time  $t$  is :

$$m_{ijt}^{s*} = \beta_0 X_{it} + \beta_1 m_{ij_{t-1}} + \beta_2 m_{ij'_{t-1}} + \beta_3 T + \epsilon_{ijt}, j = 1, 2, 3 \quad (4.9)$$

where  $m_{ijt}$  and  $m_{ij'_{t-1}}$  are vectors of past service use,  $j'$  is the other alternatives,  $T$  is a vector of time dummies, and  $\epsilon_{ijt}$  is white noise error.

### 4.3.3 The data

“Social diagnosis : objective and subjective quality of life in Poland” permits to define the use of three services : (i) first contact doctor, (ii) dental visit and (iii) inpatient stay. The survey collected the responses given by individuals from a representative sample. If the respondent used any of these services in year  $t$  and any of his use was private, he is recorded as having positive private use in year  $t$ . If he used any of these services and none of them was private, he is recorded as having positive public use in year  $t$ . If the respondent consulted a family doctor in year  $t$  and any of consultation was privately paid, he is recorded as having positive doctor use in year  $t$ . If none of these consultation was privately paid, he is recorded as having positive public doctor use in year  $t$ . Similarly, if the respondent had dental care and any of that care was private, he is recorded as having private dental care. If he consulted a dentist, and none of the visit was private, he is recorded as having public dental care. The last category is inpatient hospital stay. If this stay is paid out-of-pocket, the respondent is recorded as having a private stay. If the stay was not privately paid for, he is recorded as a public hospital user.

Although the survey questions were very precise, an astute analysis of the data reveals however that one has to be extremely careful while interpreting the responses. The reason is that people think a given service as private only when they have to additionally pay for. It means that public/private health service provision is thought as having rather financing than ownership division. Thus, one has to be considerate while assessing opinions that public medical protection cares less about patients than the private one does. People take as public only those health

services which are publicly financed. They exclude therefore health units which are privately owned and provide health services contracted by National Health Fund.

## **4.4 Factors influencing the demand for private/public healthcare**

A multinomial logit model (MNL) of the use of public and private care is estimated. The data base permits to estimate our model for two waves (2003 and 2005). The table 1 presents results for three sets of services in 2003 and two sets of services in 2005. The results for the use of any care for two periods prove that the coefficients are well defined and indicate significant differences between users of the different alternatives. The results for the use of any care show that users of private care in both waves share some demographic characteristics. Women were less likely to demand private health in 2003, whereas they were more likely to do so in 2005. Educational attainment is positively associated with the private sector use, but, as time goes by, its influence becomes insignificant. Previous analysis of public health services use have found a positive association between public use and education, which is sometimes seen as the evidence of middle class capture of the welfare state. Surprisingly, being unemployed was positively associated with general use of private health services in 2003, while it turned to be negatively associated with that use in 2005. In our opinion, this result reflects the general preference of Poles to additionally pay for immediate health care and thus to overcome barriers in access to health services (waiting lists), no matter the price. Income, as expected, influences more the demand for private health services, and that for both waves.

We find no clear evidence that smokers are less likely to use any medical service, as it was claimed in literature. In the case of “first contact” family doctor, there is a strong preference for private services, and it becomes stronger for those who benefited from employer-paid family health-care packages. The same is true for dental visits, with a “youth effect” being, however, less pronounced. Private dental visits were, in general, preferable comparing to public alternative. This is rather an obvious finding, as long as the variety of free public dental intervention is extremely limited in Poland (excepting free check-ups for children). This private dental care preference, conditional on age, did not depend on income. When it turns to analyze inpatient healthcare provision preferences, conditional on being hospitalized, older people were more likely to choose public institutions, whereas high-skilled or high-educated active individuals living in big cities favored private hospital care.

Although the results indicate a strong association between lagged and current use, they vary not only between two survey ways, but between sets of services as well. In 2003, overall private use was positively associated with either public or private use in past period, whereas in 2005, surprisingly, past private use is negatively associated with current public use. Further, for 2003 and 2005 survey, the estimated effect of past use of services in the same sector (“the same-sector” effect) is substantially larger than the estimated effect of past use of services in the other sector. For example, taking the 2005 survey, the marginal effect of of lagged use of exclusively public services on current use of public sector is 0.061 while the effect of lagged use of private sector services on current use of the public care is  $-0.049$ . The “same-/cross-sector” effects for lagged private care are  $-0.058$  and  $0.086$  respectively (table 2).



TAB. 4.1 – Multinomial logit estimates of healthcare provider choice

	Any service use				Doctor visit				Inpatient stay				Dental	
	private care		public care		private care		public care		private care		public care		private care	
	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005	2003	2005
Income	0.000** (0.000)	0.000** (0.000)	-0.000** (0.000)	0.000 (0.000)	0.000** (0.000)	0.000** (0.000)	0.000 (0.000)	-0.000 (0.000)	0.001 (0.001)	-0.000 (0.000)	0.001 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Age	-0.013** (0.003)	-0.004 (0.002)	-0.018** (0.002)	-0.005** (0.002)	-0.021** (0.004)	-0.006* (0.002)	-0.021** (0.004)	-0.005* (0.002)	0.001 (0.033)	-0.009* (0.004)	-0.030 (0.028)	-0.009** (0.003)	-0.028** (0.004)	-0.028** (0.004)
Gender (man=1)	-0.823** (0.081)	0.095 (0.084)	-0.569** (0.064)	0.160* (0.065)	-0.984** (0.148)	0.014 (0.086)	-0.567** (0.140)	0.105 (0.002)	-0.176 (1.025)	0.060 (0.141)	-1.034 (0.886)	0.191 (0.107)	-1.048** (0.142)	-1.048** (0.142)
Education	0.133** (0.014)	0.001 (0.003)	0.007 (0.012)	-0.000 (0.003)	0.101** (0.025)	0.013* (0.006)	-0.036 (0.024)	0.003 (0.005)	-0.003 (0.190)	0.030* (0.014)	-0.093 (0.165)	0.020 (0.013)	0.170** (0.013)	0.170** (0.024)
Jobless	0.304* (0.130)	-0.097 (0.142)	0.011 (0.094)	0.111 (0.102)	0.350 (0.260)	-0.059 (0.150)	0.185 (0.229)	0.114 (0.109)	-0.230 (1.501)	-0.093 (0.247)	0.238 (1.369)	0.236 (0.172)	0.033 (0.230)	0.033 (0.230)
Smoker	0.032 (0.089)	-0.181* (0.092)	0.053 (0.070)	-0.020 (0.070)	0.226 (0.174)	-0.059 (0.098)	0.395* (0.162)	-0.020 (0.074)	-0.208 (1.047)	-0.101 (0.162)	-0.077 (0.897)	0.223 (0.118)	0.162 (0.164)	0.162 (0.164)
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HC appreciation, barriers in access Effectiveness of reforms	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
public use t-1	0.854** (0.101)	0.113 (0.093)	0.860** (0.077)	0.285** (0.072)	0.124 (0.197)	-0.089 (0.202)	0.171 (0.185)	0.231 (0.190)	0.135 (1.198)	-0.004 (0.668)	1.353 (1.153)	0.423 (0.615)	-0.086 (0.288)	-0.086 (0.288)
private use t-1	1.347** (0.103)	0.537** (0.090)	0.261** (0.095)	-0.010 (0.075)	0.619* (0.265)	0.758** (0.095)	0.062 (0.226)	0.130 (0.082)	<i>dropped</i>	0.666 (0.342)	<i>dropped</i>	-0.292 (0.332)	0.701 (0.666)	0.701 (0.666)
Sample size	5725	5066	2725	5066	1328	4667	1328	4667	1038	1914	1038	1914	1468	1468

\*significant at 10% level

\*\*significant at 5% level

TAB. 4.2 – Multinomial logit estimates of marginal effects of public and private use (2005 wave)

	Any service use	
	private care dy/dx	public care dy/dx
Income	0.000** (0.000)	-7.40e-06 (0.001)
Age	-0.002 (0.003)	-0.009* (0.004)
Gender	0.001 (0.011)	0.031* (0.014)
Education	0.002 (0.003)	-0.001 (0.005)
Jobless	-0.022 (0.017)	0.035 (0.023)
Smoker	-0.024* (0.011)	0.009 (0.015)
Healthcare appreciation, barriers in access	Yes	Yes
Effectiveness of reforms	Yes	Yes
public use t-1	-0.058 (0.012)	0.061** (0.016)
private use t-1	0.086** (0.013)	0.049** (0.016)

\*significant at 10% level  
\*\* significant at 5% level

The MNL model assumes that its outcomes are independent of all other alternatives. This is IIA property (Independence from Irrelevant Alternatives). Many scholars are finding more and more of a problem with the MNL model because it is so rare that we can be reasonably sure that the IIA actually holds. But in our situation, we strongly believe that the ratio of the probability of choosing private or public health services was affected by no care users' entry into the system - which seems unlikely, given the estimations we ran above. Nevertheless, we have decided to test this MNL model assumption. Most IIA tests involve the comparison of a model estimated using a full set of choice alternatives with a model estimated using a restricted set of choice alternatives. The logic behind the Hausman and McFadden [1984] test is that if the IIA property is valid, the parameters of the restricted set model should be “approximately the same” as those of the full choice

set model. A practical implementation issue associated with this test is that it requires the analyst to take the inverse of the difference between two closely related covariance matrices, which may be nearly singular. In many cases it does not work. We have therefore chosen to use Small and Hsiao's [1985] exact test for the IIA assumption. The basic idea of this test is that if the IIA assumption holds, the log-likelihood for the restricted choice set will not be too different from the log-likelihood computed over the restricted choice set using parameters obtained from the full choice set. The resulting test statistic is asymptotically chi-square distributed with degrees of freedom equal to the number of parameters. Table 3 presents the results.

TAB. 4.3 – Small-Hsiao test of IIA assumption

Omitted alternative	2003 wave, Any servic use						2005 wave, Any service use					
	lnL (full)	lnL (restricted)	chi2	df	p>chi2	Evidence	lnL (full)	lnL (restricted)	chi2	df	p>chi2	Evidence
private use	-1434.729	-1432.533	4.392	9	0.884	for H0	-1437.189	-1432.378	9.621	9	0.382	for H0
public use	-914.953	-911.169	7.567	9	0.578	for H0	-892.084	-887.313	9.541	9	0.389	for H0

H0 : Odds (outcome  $j$   
 versus outcome  $k$ )  
 are independent of other  
 alternatives

We detect no significant departure from IIA. It appears, thus, that the IIA assumption does hold for our model specification. Finally, the fact that our model assumes IIA for any single choice does not mean that would not affect the predictions of probabilities health care choice in the future.

## 4.5 Further discussion on health care preferences

We think that the most important result of our study is the general will of population to have access to immediate and good quality health. Indeed, income factor has very little influence on decision to use private health services in case of emergency or very specialistic intervention. In general, in emergency cases, people rather prefer being indebted or ask family for financial help than wait for medical help. Furthermore, one has to remember that even if public health services are theoretically free, healing with public sector becomes sometimes costly. For instance, if the inpatient stay requires a close watch over, the inmate has to pay all additional nurse duty. It is also more and more frequent that patients are invited to pay for some surgical materials, like fibres . Surgical fibres are of course provided by hospital, but their quality is often doubtful. There also exist some other inpatient voluntary payments like upgraded hospital canteen fee, for instance. On the other hand the “Social Diagnosis” reveals that informal payments and all other monetary or physical “acknowledgements” become less frequent (23% decrease in 2005 compared to 2003).

If private spending for health services is frequent, the demand for complementary health assurances should follow. Surprisingly, it is not the case. In 2005 as far as 42% of respondents were not interested in such care plans and another 44%

admitted they could not afford for due to financial problems. Among those who were interested in additionally paid medical plans, the majority claims the will to pay for this not more than 100 zloty. This derisory sum, however, cannot be sufficient to cover medical needs of each member of the family, and that even if each and every household pays its contribution. Furthermore, it was difficult to get information on private health care plans already bought. The reason for this is that people think “private medical assurance” even if it is their employer who pays for. Employer-paid medical assurances are popular in big cities and among executive and managerial staff and take part of standard complementary employment advantage packages. When it comes to analyze the additional payments in public sector, the fee for comfort-upgraded room seems to be the one and only legitimated, reasonable and publicly acceptable.

## **4.6 Conclusions**

This paper constitutes the very first attempt to assess the health care sector in the case of transition country. Our goal was to unravel the reasons why people are more likely to chose private or public sector while looking for health care. Contrary to previous studies on the demand for health care, we find that the health care provider choice is not strongly related to income. Of course, people constantly using private sector are richer, but we observe also a strong willingness to pay additionally for immediate and good quality health among people having rather moderate revenues. Private use is highly determined by educational status and other demographic characteristics (place of living). There is also an evidence

of association between past and present use of private health care. However, the relation is not as straightforward as before in the case of past and current use of public health care. Past private use is, in turn, negatively associated with current public use (“cross-sector effect”).

Our results indicate that people are not very keen about buying a complimentary medical assurance, and this even in public sector where the out-of-pocket payments are common obligation. A possible explication may be, on the one hand, the lack of information from insurance companies, and, on the other hand, no governmental policy incentives. The last reason is, in our opinion, the most important one. When financial sources for public health care are scarce, the government should try to change the common perception of public sector where everything is “for free”. In Poland the statement about totally free public health care does not hold anymore. Therefore, the co-payment system based on private assurances may become a long-term solution. Another possibility is the employer-beared complimentary medical assurance package, that should become more popular. But this only would be successful if employer’s charges, in general, diminish (tax relief, etc.)

Finally, in order to stop the huge outflow of physicians and other medical professionals, instead of increasing their salaries (which is not immediately feasible), the solution seems to be the obligation for freshly graduated doctors to exercise in Poland. This solution, undoubtedly questioned, is justified by the high cost of formation and training of newcomers in medical professions.

## References

- BESLEY T. [1989], "The Demand for Health Care and Health Insurance", *Oxford Review of Economic Policy*, 5 (1), 21-33
- BLOMQVIST A. [1997], "Monopolistic Competition and Supply-Side Cost Sharing in the Physician Services Market", UWO Department of Economics Working Papers 9705, University of Western Ontario, Department of Economics
- BLOMQVIST A., JOHANSSON P-O. [1997], "Economic efficiency and mixed public/private insurance", *Journal of Public Economics*, 66 (3), 505-516
- CALNAN M., CANT S., GABE J. [1993], "Going Private : Why People Pay for their Health Care", Oxford University Press, Oxford
- FINKELSTEIN A., [2004], "The interaction of partial public insurance programs and residual private insurance markets : evidence from the US Medicare program", *Journal of Health Economics*, 23, 1-14
- GODDARD J.A., MALEK M., TAVAKOLI M. [1994], "An Economic Model of the Market for Hospital Treatment of Non-Urgent Conditions", *Health Economics*, 4 (1), 41-56
- GODDARD J.A., SMITH P. [1994], "Equity of Access to Health Care", University of York Centre for Health Economics Discussion Paper
- HANSON K., YIP W. C., HSIAO W [1997], "The impact of quality on the demand for outpatient services in Cyprus", *Health Economics*, 13 (12), 1167-80.
- HOEL M., SÆTHER E.M. [2003], "Public health care with waiting time : the role of supplementary private health care", *Journal of Health Economics* , 22, 599-616



- KEANE M.P. [2004], "Modeling Health Insurance Choice Using the Heterogeneous Logit Model", Yale's University working paper
- LONG S.K., COUGHLIN T., KING J, [2005], "How Well Does Medicaid Work in Improving Access to Care?",
- PAPADAKIS E., TAYLOR-GOOBY P. [1987], "The Private Provision of Public Welfare : State, Market and Community", Wheatsheaf, Brighton
- PROPPER C. [1989], "An Econometric Analysis of the Demand for Private Health Insurance in England and Wales", *Applied Economics*, 21 (6), 777-792
- PROPPER C. [1993], "Constrained Choice Sets in the UK Demand for Private Medical Insurance", *Journal of Public Economics*, 51 (3), 287-307
- PROPPER C. [2000], "The Demand for Private Health Care in the UK", *Journal of Health Economics*, 19, 855-876
- SELDEN T. M. [1993], "Should The Government provide Catastrophic Insurance?", *Journal of Public Economics*, 51, 241-247
- STOCKMAN D.A. [1981], "Premises for Medical Marketplace", *Health Affairs*, 1, 5-18
- THE COUNCIL FOR SOCIAL MONITORING, "Social Diagnosis 2003 Objective and Subjective Quality of Life in Poland" [2003,2005],

# A Final Plea

*“I am convinced that what took place in Central Eastern Europe during the past decade and a half, is an unparalleled success story in history. I believe this, in spite of the fact that I am fully aware of the grief and disappointment it was associated with.”*

János Kornai [2005]

Presidential Address, International Economic Association, 14<sup>th</sup> World Congress, Marrakech, Morocco.

Presentation on August 29, 2005, p.20

**I**N this dissertation, we have managed a discussion on the state’s roles and involvement in transition countries. Once again, we wish to look back at the conclusions of our empirical studies.

The efficiency analysis of electricity distribution companies in Poland (chapter 2) permitted us to put some light on the regulatory challenges in transition countries. Thus, investigating the regulatory design, we question its accuracy, taking into account the informational gap between the regulatory agency and electricity distribution companies. Therefore, we have shown that efficiency studies might be helpful to improve the quality of regulation. At the same time, however, we claim that the benchmarking methods should rather be taken as technical tools than definitive indicators. The question of electricity distribution gave us also a chance to

broaden the discussion on public service obligations, as the related issues became more and more complex in the context of imminent energy sector liberalization.

The third chapter of this dissertation made possible to assess the state's involvement in the infrastructure provision schemes in a transitional environment. Following actions of the Polish state in the case of a PPP-type A2 highway concession agreement, we have shown that inappropriate contract design and the blatant errors during its execution could only yield as a pitfall. While analyzing this specific concession agreement, we have also revealed some deficiencies in authority delegation fulfilment and control-related issues in the case of a special purpose public agency. Therefore, we stress an extreme importance of any bureaucratic procedure, that should be simple and clear so as to bring the general ease of administration.

The last chapter has provided a reader with an empirical analysis of welfare state in transition. Our estimation of demand for private health care in Poland surprisingly reflects a growing interest in additionally paid health care services. While public health sector suffers from underfinancing and the outflow of staff, people seem to highly value private medical services that are of good quality and of immediate access. However, the government should put more effort in establishing of necessary conditions, that aim at building of an effective market of complementary medical assurance.

Briefly, in this dissertation, we have chosen an example of Poland to empirically investigate some issues that might illustrate our initial hypothesis claiming a gradual retreat of the state from its very basic, and in a way, constitutional functions. Within our case studies, we have proven that the state is playing a vital role in successful development efforts, but we have also recognized that the wrong

kind of state intervention can be highly detrimental. We have recognized that the scope and effectiveness of government activities, rather than simply the size of the government's budget or personnel, is the key issue.

In this concluding section we wish to focus on the more fundamental question, which underlines the discussion on challenges that are still relevant as we finish the second decade of transition. From our point of view, the possibly most difficult task for today is the accomplishment of the reform of the state to alleviate the chronic state failure of communism. An important first choice has been the nature of constitution - parliamentary or presidential rule. The next task was to rebuilt the state apparatus, which has turned out to be particularly cumbersome. What should be done now is the civil service reform and its serviceableness. In order to do so, a substantial renewal of cadres is necessary. This, in turn, may be helpful in a difficult fight against corruption. While only hardline communist claim that market reform has caused corruption, a common belief is that transition has boosted corruption. And a frequent liberal instinct is that the larger the government, the greater corruption. However, this statement is not really true, because the quality of the government is missing in this reasoning. That is why in this dissertation we have insisted on the quality, feasibility, simplicity, soundness, smoothness and coordination of governmental actions. It follows that given the weight of the public sector in a modern economy, its role in setting and implementing the rules of the game, its importance in providing law and order, it is easy to see that, for economic efficiency and dynamism, a well-functioning public sector is key. As we could see, in some transition economies, unfortunately, the quality of the public sector is deeply disappointing.

A careful reader has surely noticed that we dwelled extensively on the welfare state reforms. Focusing on health care services design we were highlighting difficulties in changing people's mentality, which - simplifying a little - means to tell the people that not everything is "for free". This is only one example of some researcher's view about post-socialist societies where people expect the state to continue its paternalistic behavior : expect the state to totally control pensions, family's provisions, jobs, health, and so on, as its communist forebear used to do. That is why we think that securing the understanding and support of society is vitally important if any welfare reform is to succeed. We have shown that Poles are interested in additional paying for medical services, but, surprisingly, they do not want medical assurances. The reason is that they know very little about such coverage for medical risks. And this is because the government failed to do its informational job.

Generally speaking, there is still scarce relevant information about people's expectations on the state's role in welfare reforms (the most interesting one is "*The Social Consequences of Transition*", conducted in the Czech Republic, Hungary, Poland, Slovakia and the former East Germany under the auspices of the Institute of Human Sciences in Vienna in 1995 and has, unfortunately not been updated since). In our opinion, such a pluridisciplinary study should take place, providing governments and international institutions with precious aid in formulating social policy goals. Of course, one can say that the result of election is the best reflection of nation's preferences, but it cannot be taken for granted in case of countries where participation rate rarely outruns 50%.

This lack of trust in democratic mechanisms, a gradually melting reliance on governmental actions is maybe the most striking paradox of late transition. People's deep belief that *"no matter who in power, it will not be better"* is very dangerous for the overall stability of transition process. It seems that Poles, Czechs or Hungarians just care less about their influence on public affairs. In majority, they are still perceiving the state as an extremely complicated machinery that remains austere for citizens. In addition, constant scandals "on the heights of power" do not favor the change of this unfortunate situation. To give an exemple, after the decentralization reform in Poland, people figured out that the new territorial design is rather incomprehensive, making some basic administrative procedures (passport request, car registration, etc.) more complicated. In that sense, the reform supposed to bring the state closer to citizens, has done the contrary, taking chance to make the red tape flourish. As a result, after all those years of changes, it did not change a lot in front of the public counter. And people are convinced that it is not going to change soon either.

Of course, we do notice some successful welfare reforms. Regarding pension reforms for instance, in most of the OECD- member and transition countries, much has been done to put the future finances of the pension system on a sustainable footing, especially limiting pathways to early retirement for favoured groups of workers. Spending on pensions is supposed to fall gradually, and the gross replacement rate from the public scheme should be about 60% of a given pensioner income while working. Complementary part would come from private individual accounts, based on primes from capital markets. However, there is still a risk that benefits will be lower for low earners after the reform. OECD's forecasts show that for

someone with half average earnings, for example, the net replacement rate (after taxes and contributions) will fall to 75%. Thus, there is a risk that the rebalancing of benefits away from low and middle earners towards high earners may come up with an increase in old-age poverty in the future or increased pressure on the social assistance system, thereby compromising the long-term fiscal gains.

And precisely, how to reconcile high rate of growth with both economic and social equilibrium is the main dilemma of late transition. In other words, the biggest challenge is how to reconcile fiscal discipline with the need to finance modernisation efforts and, in the same time, how to maintain some degree of social cohesion. First, fiscal restraint is one of very few short-run instruments in the hands of the authorities to reduce the gap between savings and investments. As long as there is no institutions developed enough to stimulate private saving, which is a time-consuming process linked to welfare reforms, and as long as the wave of investments does not produce more exports, there will be a strong pressure to reduce budget deficit or, indeed, to have a surplus. At the same time, public funds have to be provided to co-finance industrial restructuring, modernizing infrastructure and improving natural environment. Also, it is necessary that the structural funds from the EU match domestic component. Fundamental reforms of the expenditure side of the budget coupled with drastic cuts where inessential, are the only way how these two exigences can be reconciled. Recent experiences show, however, that when you undertake a deep reform, as it happened with health sector or local government, prospective gains in efficiency are preceded by increased costs. You have to invest first, and only later you can reap the benefits.

Second, fast growth does not automatically solve acute social problems. Excessive income disparities, regional differences and poverty have to be tackled, or the situation may get out of hand. Fiscal austerity makes it all but impossible to try to build a generous welfare-state-type social policy. On the other hand, there will always be a pressure to better streamline expenditures, eliminate waste and restrict the spending programs to the very basic level. Such prudence may be salutary, as poverty and social exclusion has never been properly addressed, nor solved, by careless spending behavior. However, intelligent methods of fighting poverty might be used. These are, in our opinion, massive investment in education, particularly in rural areas and support for small and medium enterprises (SME). Poverty is linked to unemployment, and jobs are created almost exclusively in the SME sector. Lack of education makes people unemployable, even if demand for labor is rising. Thus, the recipe seems obvious. It requires certain budgetary support and knowledge how to spend public money in a most efficient way.

Summing up, transition has so far brought great achievements. Unprecedented success for some, justified hopes for many others, but also disappointment for the least fortunate.

Far from being exhaustive, we wish that this dissertation would provide readers with better understanding of late transition period. Even if our thoughts are based on one transition country, we strongly believe that our conclusions are relevant in case of others. And because we are convinced that there is still much to explore, we would like to extend this study, at least in a threefold way.

Clearly, concerning welfare reforms, one would like to investigate the dynamics of labor markets and migration issue after the last two EU enlargements.



Some clarifications about migration, employment, remittances need to be done, at least in order to fight against misleading facts and opinions. In our future research work, we would like to put some light on the coercive attributes of the state, that are judiciary and penology. Once again, we believe that economic analysis might be helpful in reforming institutions, making judges, prosecutors, attorneys and guard's work more efficient and valuable. This, in turn, would positively influence public spending. Finally, economic literature tells little about restructuring of sunset industries. This issue, however, cannot be forgotten, being a very important nexus of social cohesion.

COMMENT CONCILIER SERVICE PUBLIC ET CONCURRENCE ?  
ESSAIS SUR LE RÔLE DE L'ÉTAT DURANT LA TRANSITION

**Résumé**

Cette thèse étudie la question de la place qu'occupe l'Etat dans les pays de l'ancien bloc socialiste, et ce à l'aube de la troisième décennie des réformes. En retenant l'exemple polonais pour apprécier concrètement ce que l'on peut déjà pressentir comme des nouvelles responsabilités de l'Etat, nous avons choisi d'analyser l'efficacité de l'action publique sous trois perspectives, chacune d'entre elles correspondant à un chapitre. Dans quelle mesure l'Etat entraîne-t-il une redéfinition de la regulation d'activités économique? Quel rôle joue-t-il dans la fourniture des biens publics? Comment s'y prend-t-il pour achever les réformes sociales? La nouvelle configuration économique et sociale amplifie certains dysfonctionnements inhérents au système transitoire tout en introduisant de nouvelles distorsions, comme l'illustre pertinemment le secteur public en Pologne. Cette thèse analyse certains aspects des interactions entre deux sphères, publique et privée, à la lumière des changements profonds qui accompagnent la nouvelle donne.

**Discipline** : Sciences économiques

**Mots-clés** : Economie de la transition, Economie publique

HOW TO RECONCILE PUBLIC SERVICE AND COMPETITION ?  
ESSAYS ON THE STATE'S BEHAVIOR DURING A SYSTEMIC TRANSITION

**Abstract**

This thesis investigates a question of a place for the state in the post-socialist countries during the period of late transition. Taking a Polish example, we analyze the effectiveness of public actions from three angles, each one being a chapter. To what extent the state redefines the regulation of economic activities? What part does the state play in the public goods provision? How does the state draw to a close hard social reforms? A new economic and social context underlines some issues inherent to the transition system, while creating new distortions, as shown by the public sector in Poland. This thesis aims at analyzing some aspects of interactions between public and private spaces, in the light of changes that go along with the new order.

**Discipline** : Economics

**Keywords** : Transition economics, public economics

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