YVES ARRIGHI

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FONCTIONS

Depuis Nov. 2014	**Chercheur Postdoctoral**, Université Paris-Descartes, Sorbonne Paris Cité, LIRAES
2013-2014	**Ingénieur de recherche**, Aix-Marseille Université (AMU), Inserm UMR 912
2010- 2013	**Allocataire de recherche**, AMU, Aix-Marseille School of Economics (AMSE), Groupement de Recherche en Economie Quantitative d'Aix-Marseille (GREQAM)
2009 – 2010	**Ingénieur de recherche**, AMU, Inserm UMR 912
2008	**Stagiaire**, University of Glasgow, Section of Public Health & Health Policy
2007	**Stagiaire**, AMU, Inserm UMR 912

TITRES UNIVERSITAIRES

2014	**Qualification** aux fonctions de Maître de Conférence, CNU, Section 05 (rapporteurs : Hervé Blanchard (Perpignan) et Jean-Michel Josselin (Rennes 1))
2010-2013	**Doctorat en Sciences Economiques**, sous la direction de Bruno Ventelou et d'Alain Trannoy, Aix Marseille Université, soutenu le 13/12/2013.
	Titre : *Four Essays in the Economics of Health Policies*
	Membres du Jury : Andrew Clark (Paris School of Economics(PSE)), Pierre-Yves Geoffard (PSE), Jean-Paul Moatti (AMU), Owen O'Donnell (Rotterdam), Alain Trannoy (AMU), Bruno Ventelou (AMU)
2005-2008	**Diplôme d'ingénieur** de l'Ecole Nationale de la Statistique et de l'Analyse de l'Information (ENSAI), Rennes. Spécialité: Économie de la santé.
2003-2005	**DEUG** en Sciences Economiques et de Gestion, AMU, Mention Bien.
	Classe Préparatoire aux Grandes Ecoles, ENS Cachan D2, Lycée Jean-Perrin, Marseille.

LANGUES

Anglais (bilingue), Allemand (scolaire)

COMPETENCES INFORMATIQUES

Avancées	SAS, Stata, SPSS, HLM, MS Excel
Notions	SPAD, R, Gauss, Matlab, MySQL, VBA

ACTIVITES DE RECHERCHE

Une présentation analytique des travaux est présentée en fin de document

Domaines : Economie de la santé, Démographie, Econométrie appliquée.

Thèmes : Inégalités de santé, Relation Santé-Développement, Evaluation des politiques de santé, VIH-SIDA, Vieillissement, Dépendance.

Techniques : Microsimulation, Chaînes de Markov, Modèles Hiérarchiques.

Données : Demographic & Health Surveys, World Health Survey, Handicap Santé Ménages, SHARE, Enquête Santé-Protection Sociale, Global Price Reporting Mechanism.

PUBLICATIONS (REVUES A COMITE DE LECTURE)

2015 To count or not to count deaths: Reranking effects in health distribution evaluation**,** avec M. Abu-Zaineh et B. Ventelou. *Health Economics 24 (2) : 193-205*

2012 The macroeconomic consequences of renouncing to universal access to antiretroviral treatment for HIV in Africa: a Microsimulation model. Avec B. Ventelou, R. Greener, E. Lamontagne, P.M. Carrieri et J.P. Moatti*. PLoS ONE 7(4): e34101*

2010 The life cycle of general practitioners' professional motivations: The case of prevention, avec Y. Videau, P. Batifoulier, M. Gadreau et B. Ventelou. *Revue d'Épidémiologie et de Santé Publique 58 (5) p 301-311*

DOCUMENTS DE TRAVAIL

- Healthcare Policies, Chronic Conditions and the Wealth of Nations. The case of HIV/AIDS Programs in Africa using Microsimulation Techniques. Avec B. Ventelou
- Health Systems, Socioeconomic Status, Health Status and Access to Care in Childhood. Results from the World Health Survey.
- The non-take-up of long-term care benefit in France: a pecuniary motive? Avec B. Davin, B. Ventelou et A.Trannoy
- Affordability of HIV/AIDS treatment in developing countries: an analysis of ARV drug price determinants. Avec L. Sagaon-Teyssier, B. Domgo Nguimfack et J.P. Moatti
- Assymetrical influence of income adequacy on upward-downward shifts in disability status: A markov transition approach using SHARE data. Avec N. Sirven et T. Rapp

ACTIVITE DE RAPPORTEUR

Rapporteur pour PLoS ONE et Social Science & Medicine

PROJETS DE RECHERCHE

Commission EU	Projet SPRINT-T : Analyse économique de la fragilité, avec T.Rapp et N. Sirven (Université Paris Descartes), en collaboration avec l'Université Catholique du Sacré Cœur (Rome) ; depuis Nov. 2014
UNITAID	Projet "Global Data Exchange for Market Intelligence Information", avec L. Sagaon et J.P. Moatti (AMU), en collaboration avec l'OMS (départements AMDS et IT), FIND et IQLS ; 2011-13
ONUSIDA	Evaluation de l'impact des politiques de lute contre le VIH/SIDA, avec B. Ventelou ; 2009-10
MiRe DREES	Etude des déterminants de la demande d'APA, avec A. Trannoy, C. Garcia Penalosa, B. Ventelou et B. Davin ; 2009-10

CONFÉRENCES

- Self-Assessed Health, Income, Income Inequality & Deprivation in Scotland & England: a further examination of the "Scottish Effect": HESG (Manchester, Royaume-Uni, Jan. 2009)
- How many HIV-infected Lives will the Financial Crisis Affect? AIDS Impact (Gaborone, Botswana, Sept. 2009) ; AIID Conference (Amsterdam, Déc. 2009).
- Un Effet Prix dans la Demande d'APA? DREES, Paris, Jan. 2010.
- To count or not to count deaths: Reranking effects in health distribution evaluation: Health Financing (Clermont Ferrand, Mai 2011); ECINEQ (Catania, Italie, Juil. 2011) ; Journées Maurice Marchand des économistes de la Santé (Marseille, Mars 2012)
- Healthcare Policies, Chronic Conditions and the Wealth of Nations. The case of HIV/AIDS Programs in Africa using Microsimulation Techniques: Health, Inequality, Development (Darmstadt, Juin 2012)
- Affordability of HIV/AIDS treatment in developing countries: an analysis of ARV drug price determinants. International AIDS conference (Washington DC, USA, Juil. 2012 et Kuala Lumpur, Malaysia, Juil. 2013)
- Assymetrical influence of income adequacy on upward-downward shifts in disability status: A markov transition approach using SHARE data : Fragilité du sujet âgé (Paris, Mars 2015), iHEA (Milan, Juil. 2015)

ACTIVITES D'ENSEIGNEMENT

ENSEIGNEMENTS

2014-2015	Economie des Marchés, L1 Economie-Gestion, Université Paris Descartes, 40h TD, cours de T. Rapp. Conception du sujet d'examen et participation au Jury.

ENCADREMENTS

Mai- Juil. 2013	J. Latourelle (Mémoire de 2ème année ENSAI)
Juil.-Août 2010	Y. Serbouti (Stage de M1 Informatique)

PRESENTATION ANALYTIQUE DES TRAVAUX

Les articles signalés par un astérisque seront présentés lors d'une éventuelle audition

PUBLICATIONS

- * To count or not to count deaths: Reranking effects in health distribution evaluation, avec M. Abu-Zaineh et B.Ventelou. *Health Economics 24 (2) : 193-205*

Abstract: Populations' structures and sizes can be a result of healthcare policy decisions. We use a two-period theoretical framework and a dynamic microsimulation model to examine the consequences of this assertion on the appraisal of alternative health policy options. Results show that standard welfare-in-health measures are sensitive to changes in populations' sizes, in that taking into account the (virtual) existence of the dead can alter the ranking of policy options. Disregarding differences in the survivals induced by alternative policies can bias programmes' ranking in favour of less live-saving policies. The paper alerts on the risk of policy misranking by the use of ex-post cross-sectional analyses, neglecting deaths occurring in the past as well as counterfactual deaths in alternative policy scenarios.

- * The macroeconomic consequences of renouncing to universal access to antiretroviral treatment for HIV in Africa: a Microsimulation model. Avec B. Ventelou, R. Greener, E. Lamontagne, P.M. Carrieri et J.P. Moatti. *PLoS ONE 7(4): e34101*

Abstract: Previous economic literature on the cost-effectiveness of antiretroviral treatment (ART) programs has been mainly focused on the microeconomic consequences of alternative use of resources devoted to the fight against the HIV pandemic. We rather aim at forecasting the consequences of alternative scenarios for the macroeconomic performance of countries. We used a micro-simulation model based on individuals aged 15–49 selected from nationally representative surveys (DHS for Cameroon, Tanzania and Swaziland) to compare alternative scenarios : 1-freezing of ART programs to current levels of access, 2- universal access (scaling up to 100% coverage by 2015, with two variants defining ART eligibility according to previous or current WHO guidelines). We introduced an "artificial" ageing process by programming methods. Individuals could evolve through different health states: HIV negative, HIV positive (with different stages of the syndrome). Scenarios of ART procurement determine this dynamics.

Increased levels of ART coverage result in decreasing HIV incidence and related mortality. Universal access to ART has a positive impact on workers' productivity; the evaluations performed for Swaziland and Cameroon show that universal access would imply net cost-savings at the scale of the society, when the full macroeconomic consequences are introduced in the calculations. In Tanzania, ART access programs imply a net cost for the economy, but 70% of costs are covered by GDP gains at the 2034 horizon, even in the extended coverage option promoted by WHO guidelines initiating ART at levels of 350 cc/mm3 CD4 cell counts. Universal Access ART scaling-up strategies, which are more costly in the short term, remain the best economic choice in the long term.

- The life cycle of general practitioners' professional motivations: The case of prevention, avec Y. Videau, P. Batifoulier, M. Gadreau et B. Ventelou. *Revue d'Épidémiologie et de Santé Publique 58 (5) p 301-311*

Abstract: La littérature économique fait désormais une large place à l'analyse des « motivations professionnelles », examinant notamment les possibles effets d'éviction entre motivations extrinsèques et intrinsèques. Le présent article propose de transposer ces questions dans le champ des professions de santé, où l'enjeu du juste dosage dans le recours aux politiques de paiement à la performance par le décideur public est particulièrement présent.
À partir d'un panel de 528 médecins généralistes libéraux de la région « Provence-Alpes-Côte-d'Azur » en France, nous proposons une décomposition statistique interindividuelle entre motivations extrinsèques et intrinsèques dans le domaine des actions de prévention, pour ensuite déterminer, à l'aide d'un modèle Tobit, les principales variables explicatives de la part des motivations intrinsèques dans les motivations totales des médecins.
La part des motivations intrinsèques est relativement plus importante chez les médecins pratiquant les tarifs conventionnés. L'effet significatif de l'âge suit une courbe en U qui peut être interprétée comme le résultat d'un « cycle de vie des motivations médicales » et/ou comme celui d'un effet génération.
La nature transversale des données ne permet pas de conclure quant à la part de l'évolution du rapport motivations intrinsèques/motivations extrinsèques directement liée à un effet génération ou à un effet « cycle de vie ». Cependant, nos résultats amènent à s'interroger sur la pertinence de recourir de manière uniforme au dispositif du paiement à la performance : les générations ou tranches d'âge moins sensibles aux motivations extrinsèques sont susceptibles d'être plus réceptives à l'introduction d'autres modes de rémunération, moins « agressifs envers les motivations intrinsèques » (la capitation ou le salariat) ou à d'autres mécanismes de régulation, comme par exemple les guides de bonne pratique.

DOCUMENTS DE TRAVAIL

- Healthcare Policies, Chronic Conditions and the Wealth of Nations. The case of HIV/AIDS Programs in Africa using Microsimulation Techniques. Avec B. Ventelou

Abstract: Thanks to modern medicine, developing countries are currently experiencing an epidemiological transition (diseases becoming chronic), similar to which high-income countries experienced in the 20th century. This paper aims at quantifying the effect of healthcare programs on macroeconomic performances in the context of developing countries experiencing epidemiological transitions. It is widely accepted in the literature that curative programs result in production gains among ill-health workers. However, curative programs have the additional effect of modifying both the size and the composition of the working population by increasing the ratio of chronically-ill individuals. This macro-epidemiological phenomenon could attenuate or even outweigh the positive effect of an increase in production. Indeed, following the chronicization of illness, the population size increases, while the average productivity may not.
The paper attempts to evaluate the magnitude of this epidemiological effect in the context of programs for access to antiretroviral treatments against HIV in three sub-Saharan African countries. Forecasts of an individual's health status, depending on whether he or she has access to medication, are generated using a discrete-time microsimulation model. We use microsimulation models in order to generate a "virtual case" (as if the adverse epidemiological effect did not exist), which allows decomposing the total impact of the HIV-medicines program into two analytically different effects: positive and negative. We find that the positive effect of drugs procurement outweighs the negative epidemiological effect. Of course, this approach is only an indicator of financial solvability and in no way should constitute a decision-making criterion on the ethical necessity of access to health care.

- Health Systems, Socioeconomic Status, Health Status and Access to Care in Childhood. Results from the World Health Survey.

Abstract: Using micro data from fifty countries (WHO World Health Survey), the paper aims at understanding the pattern of the relationship between child health, children's access to care and both socioeconomic background, measured by parental education, and relative socioeconomic status (SES), measured by a composite index of household wealth. Across the globe, poorer children are substantially more likely to experience (multiple) symptoms of illness and are less likely to receive care when needed. A strong relationship between (child) health and socioeconomic status is firmly established. The contribution of the paper is to present evidence on how this gradient differs across countries. The gradient is stronger in lower income and less healthy countries. There is little or no evidence from low and middle income countries that the gradient strengthens as children age, at least up to the age of six observed in the data used. There is some indication that the wealth gradient in both child health and access to health care varies with the aggregate supply of health care in the country, the means of financing health care, and the existence of a health insurance scheme.

- The non-take-up of long-term care benefit in France: a pecuniary motive? Avec B. Davin, B. Ventelou et A.Trannoy

Abstract: With ageing populations, European countries face difficult challenges. In 2002, France implemented a public allowance program (APA) offering financial support for long-term care (LTC) of the disabled elderly. Although currently granted to 1.2 million people, it is suspected that some of those eligible do not claim it (non-take-up). This has also been observed for other social benefits. The granting of APA is a decentralized process, with 96 County Councils managing it and wide room for interpretation induces spatial heterogeneity in the practical implementation of the program. This creates the conditions for a "natural experiment", providing the opportunity to study demand for APA in relation to variations in County Councils' "generosity" in terms of both eligibility and copayment rate for LTC (i.e. level of APA they award at the individual level). Using a national health survey and administrative data in a multilevel model controlling for geographical, cultural and political differences between counties, results show that claiming for APA is associated with "generosity" of County Councils. Where the percentage of County Council APA (copayment) is lower, eligible individuals tend to apply less for the allowance. This rational cost-benefit decision can have strong implications for the well-being of the elderly and their relatives.

- Affordability of HIV/AIDS treatment in developing countries: an analysis of ARV drug price determinants. Avec L. Sagaon-Teyssier, B. Domgo Nguimfack et J.P. Moatti

Abstract: Although prices for first-line drugs fell during the last years, affordability remains a critical issue in developing countries. The number of people living with HIV/AIDS requiring newer drugs increases as result of failure to first-line treatment and WHO guidelines. The study aims to offer a landscape of the ARV global market situation through the analysis of transactional data of antiretroviral prices between 2003 and 2012 and associated factors; and the evolution of prices throughout the life-cycle of initial patents. A better knowledge of the functioning of the global market may help to implement more cost-effective management of ARV procurement.

Adult antiretroviral procurement from the Global Price Reporting Mechanism (GPRM/WHO) was used. Separate regressions were estimated for originator and generic segments. Logarithm of yearly dose prices was regressed on years, geographical region, quantities, Gross National Income per capita (GNIpc), number of suppliers, therapeutic-line, drug-age, and years before/after initial patent expiration at purchase year. Generic transactions before initial patent expiration correspond to drugs produced and sold/purchased under license.
Econometric analysis demonstrates that originator prices are 60%($p< 0.001$) higher than generics. Statistical tests confirm that both segments should be analyzed separately as prices react differently to explanatory factors. Sub-Saharan countries pay the highest generic prices: for example, 19%($p< 0.001$) higher than Europe-and-Central-Asia; and 9%($p< 0.001$) higher than South-Asia. Originator and generic prices evolve differently throughout the life-cycle of initial patents. Generics (originator) procured 18 years before expiration of initial patents are in average 186%(42%) more expensive than generics (originator) whose patent just expired. After expiration of the initial patent, originator and generic prices increase at same pace.
Procurement policies should account for the different functioning of originator and generic segments. The important price-differentials between geographical regions highlight different strategies adopted by originator and generic manufacturers. Where patent protection is concerned, high prices may impair the delivery of higher quality treatment in developing countries. Fluctuation of generic prices of drugs under license demonstrates that patent protection may also impair the delivery of newer generics depending on whether license is granted at the beginning of the patent life-cycle or later.

- * Assymetrical influence of income adequacy on upward-downward shifts in disability status: A markov transition approach using SHARE data. Avec N. Sirven et T. Rapp

Recent studies on the demand for long-term care emphasised the role of frailty as a specific precursor of disability besides chronic diseases. Frailty is defined as a vulnerable health status resulting from a multisystem reduction in older people's reserve capacity (e.g. nutritional deficiency). This medical concept is brought here in an economic framework in order to examine the determinants of the disablement process and to investigate the role social policies may play in preventing disability, maintaining or even improving life quality among elders.
Using panel micro-data from the Survey on Health, Ageing, and Retirement in Europe (SHARE), respondents aged 50+ from 13 European countries were categorised as "robust", "frail" or "disabled" on the basis of five physiologic and six ADL criteria. Over the four regular waves of data, the determinants of the transition probabilities between Markovian health states are analysed by 2-level multinomial Logit models with random intercept. The initial health status was considered as the reference state for the subsequent wave of data. Individual controls include socioeconomic status, social capital, lifestyle (incl. nutrition), and demographic characteristics. Each transition probability is partially predicted by an intercept that varies across countries.
Out of the 24,000 individuals who were surveyed at least two times over the first three regular waves of SHARE, more than 40% of interviewees experienced at least one transition. In 2007 (respectively 2011), 30% (36% resp.) individuals that were classified as robust in 2004 (2007 resp.) became frail. The probability that frail individuals become robust (respectively disable) in the subsequent wave approximates 29% (resp. 6%). More than 60% of disabled elders did not experience reversal pathways. These numbers are subject to a considerable geographical variation. For instance, respondents from Spain and Poland were found to experience more transitions from "robust" to "frail" and from "frail" to "disabled" than interviewees from The Netherlands, Switzerland and Northern Europe.
Across Europe, poorer and less educated elders are substantially more likely to experience transitions to states of greater severity. The socioeconomic gradients in health recovery are steeper than those observed for health status worsening. Social capital is found to be a strong determinant of future health status. Interestingly, being involved in associations prevents downward movements within the Markov chain, whereas practicing sport enhances chances of health improvements. Compared to non-drinkers, alcohol-consumers, who also have better nutritional habitudes, are less likely to become frail or disabled.

REFERENCES

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