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Managed care, deficit financing, and aggregate health care expenditure in the United States: A cointegration analysis

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Abstract

We applied a battery of cointegration tests comprising those of Johansen and Juselius [19], Phillips and Hansen [35], and Engle and Granger [6], to model aggregate health care expenditure using 1960–96 US data. The existence of a stable long-run economic relationship or cointegration is confirmed, in the United States, between aggregate health care expenditure and real GDP, population age distribution, managed care enrollment, number of practicing physicians, and government deficits. The evidence of cointegration among these variables, chosen on the theoretical basis of prior studies, implies that while they are individually non-stationary in levels, together they are highly correlated and move, in the long run to form an economic equilibrium relationship of US aggregate health care expenditure. More specifically, and for the first time in this line of inquiry, (i) managed care enrollment is found to be negatively associated with the level of health care spending, (ii) supply disinduced demand effects of physicians tend to moderate health expenditure, and (iii) government deficit financing is positively

related to health care spending. The observed sign and magnitude of the income coefficient are consistent with health care being a luxury good.

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References

[1] G.F. Anderson and J.-P. Poullier, Health spending, access and outcomes: Trends in Industrialized countries, Health Affairs (1999) 178–192.

[2] D.M. Cutler, The cost and financing of health care, American Economic Review (1995) 33–34.

[3] S.L. Decker and K. Hempstead, HMO penetration and quality of care: The case of breast cancer, Journal of Health Care Finance 26(1) (1999) 18–32.

[4] D.N. DeJong, J.C. Nankervis, N.E. Saving and C.H. Whiteman, Integration versus trend stationarity in macroeconomic time series, Econometrica 60 (1992) 423–431.

[5] F.X. Diebold and G.D. Rudebush, On the power of Dickey-Fuller tests against fractional alternatives, Economics Letters 35 (1991) 155–160.

[6] R.F. Engle and C.W.J. Granger, Co-integration and error-correction: Representation, estimation and testing, Econometrica (1987) 251–276.

[7] B.J. Fox, L.L. Taylor and M.K. Yücel, America's health care problem: An economic perspective, Federal Reserve Bank of Dallas Economic Review, III Qtr. (1993) 21–31.

[8] W.A. Fuller, *Introduction to Statistical Inference* (Wiley, New York, 1996).

[9] U.G. Gerdtham, J. Søgaard, F. Andersson and B. Jünsson, An econometric analysis of health care expenditure: A cross-section study of the OECD

countries, Journal of Health Economics (1992) 63–84.

[10] U.G. Gerdtham, J. Søgaard, F. Andersson and B. Jünsson, A pooled cross section analysis of the health care expenditures of the OECD countries, in: *Health Economics Worldwide*, eds. P. Zweifel and H. Frech (Kluwer, Dordrecht, The Netherlands, 1990).

[11] T.E. Getzen, Macroeconomics and health care spending: The policy implications of delayed response, in: *Readings in Public Policy*, ed. J.M. Pgodzinski (Blackwell Business, 1995).

[12] J. Gonzalo and T.-H. Lee, Pitfalls in testing for long-run relationships, Journal of Econometrics 86(1) (1998) 129–154.

[13] H. Hansen and K. Juselius, *CATS in RATS - Cointegration Analysis Time Series* (Estima, IL, 1995).

[14] P. Hansen and A. King, Health care expenditure and GDP: Panel data unit rot test results - comment, Journal of Health Economics 17 (1998) 377–381.

[15] P. Hansen and A. King, The determinates of health care expenditure: A cointegration approach, Journal of Health Economics 15 (1996) 127–137.

[16] C. Hargreaves, A review of methods of estimating cointegrating relationships, in: *Nonstationary Time Series Analysis and Cointegration*, ed. C. Hargreaves (Oxford University Press, Oxford, UK, 1992).

[17] J. Henderson, *Health Economics and Policy* (Southwestern Publishing, Cincinnati, 1999).

[18] T. Hitiris and J. Posnett, The determinants and effects of health expenditure in developing countries, Journal of Health Economics (1992) 173–181.

[19] S. Johansen and K. Juselius, Maximum likelihood estimation and inference on cointe-gration - with applications to the demand for money, Oxford Bulletin of Economics and Statistics (1990) 169–210.

[20] B. Jünsson and U.-G. Gerdtham, Health care systems internationally, in: *Handbook of Health Economics*, Vol. 1A, eds. A.J. Culyer and J.P. Newhouse (North-Holland, 2000) pp. 11–53.

[21] G. Karatzas, On the effect of income and relative price on the demand for health care - the EEC evidence: A comment, Applied Economics (1992) 1251–1253.

[22] A. King and P. Hansen, Aggregate health care expenditure in the United States: Evidence from cointegration tests: A comment, Applied Economics Letters 3 (1996) 37–39.

[23] D. Kwiatkowski, P.C.B. Phillips, P. Schmidt and Y. Shin, Testing the null hypothesis of stationarity against the alternative of a unit root, Journal of Econometrics 1 (1992) 159–178.

[24] R.E. Leu, The public-private mix and international health care costs, in: *Public and Private Health Services*, eds. A.J. Culyer and B. Jonsson (Basil Blackwell, Oxford 1986).

[25] K.R. Levit et al., National health spending trends, 1960-1993, Health Affairs (1994) 14–31.

[26] W.G. Manning et al., Health insurance and the demand for medical care,

American Economic Review (1987) 251–277.

[27] S.K. McCoskey and T.M. Selden, Health care expenditures and GDP: Panel data unit root test results, Journal of Health Economics 17 (1998) 369–376.

[28] N.R.V. Murthy and V. Ukpolo, Aggregate health care expenditure in the United States: New results, Applied Economics Letters 2 (1995) 419–421.

[29] J.P. Newhouse, Medical care expenditure: A cross-national survey, Journal of Human Resources 12 (1977) 115–125.

[30] J.P. Newhouse, Cross-national differences in health spending: What do they mean?, Journal of Health Economics 6 (1987) 159–162.

[31] A. Okunade and C. Suraratdecha, Health expenditure inertia in the OECD countries: A heterogeneous analysis, Health Care Management Science 3(1) (2000) 31–42.

[32] Organization for Economic Co-operation and Development, *Health Care Systems in Transition: The Search for Efficiency* (Paris, 1990).

[33] Organization for Economic Cooperation and Development, *OECD Health Data 98* (Washington, 1998).

[34] M.H. Pesaran and B. Pesaran, *MICROFIT 4.0* (Oxford University Press, Oxford, 1997).

[35] P.C.B. Phillips and B.E. Hansen, Statistical inference in instrumental variables regression I(1) process, Review of Economic Studies (1990) 99–125.

[36] P. Phillips and P. Perron, Testing for a unit root in time series regression, Biometrica (1988) 335–346.

[37] S. Smith, M. Freeland, S. Heffler and D. McKusick, The Health Expenditures Projection Team, 1998. The next ten years of health spending: What does the future hold?, Health Affairs 17 (1998) 128–140.

[38] US Government Printing Office, *Economic Report of the President, 1998* (Washington, DC, 1998).

[39] US Bureau of the Census, *Statistical Abstract of the United States* (various years).

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