



contributions to economic  
analysis

**Daniel Slottje and Rusty Tchernis**  
Editors

**Current Issues  
in Health Economics**

# CURRENT ISSUES IN HEALTH ECONOMICS

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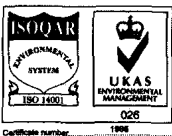
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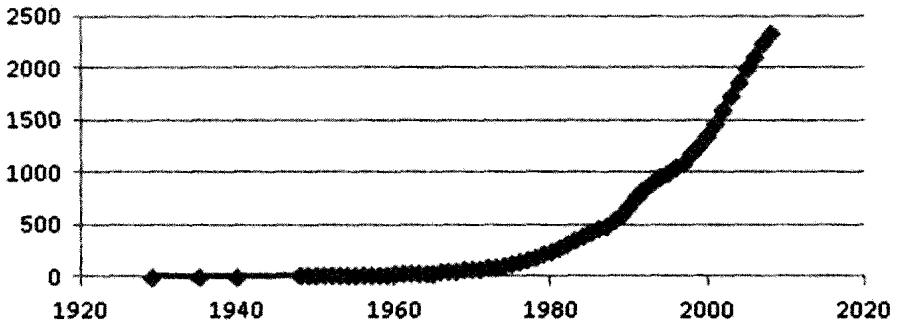
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## *Introduction*

In March 2010, President Obama signed into law the most broad and sweeping reform of health care in U.S. history. This was done at a time when aggregate medical expenses are significantly higher than they have ever been:

**Aggregate National Health Care Expenditures,  
1929-2008 (billions)**



Sources: *Datapedia of the United States 1790-2005 2nd ed.* Bernan, Lanham, MD. Web. Accessed from <http://www.mindfully.org/Health/Health-Expenditures-1929-1997.htm> on July 22, 2010 and

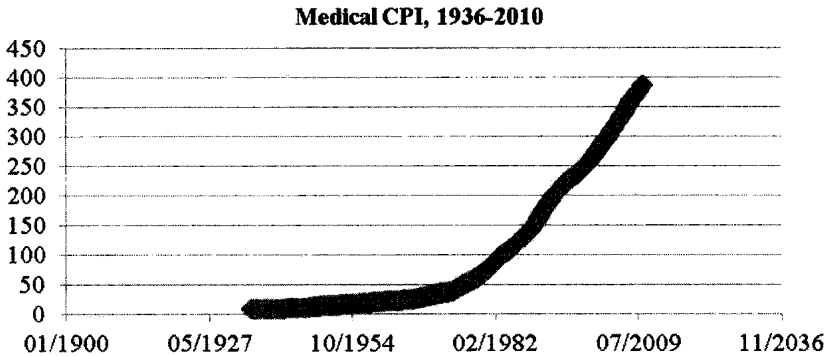
*Historical National Health Expenditure Data.* Centers for Medicare and Medicaid Services. <https://www.cms.gov/NationalHealthExpendData/downloads/tables.pdf> Accessed July 27, 2010.

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Decade (number of observations)	Average annual spending (billions)
2000s (9)	1,854.3
1990s (10)	969.4
1980s (10)	413.1
1970s(10)	128.9
1960s (10)	41.5
1950s (10)	18.0
1940s (3)	8.7
1930s (1)	2.9
1920s (1)	3.6

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The average aggregate medical expenditure from 2000 to 2008 was 1.85 trillion dollars per year. In addition, the medical portion of the consumer price index (CPI) shows a higher price level of medical care than ever before. It is unlikely that quality of care has risen at the same rate (the medical CPI is almost eight times as high as it was in 1976), so it is very possible that consumers are paying more for each effective unit of medical care.



Source: *Databases, Tables, & Calculators by Subject*. United States Bureau of Labor Statistics. <http://data.bls.gov/PDQ/servlet/SurveyOutputServlet>. Accessed July 22, 2010.

The purpose of this book is to analyze the effect of policy on national health status and to expand the knowledge base regarding the economics of health care. Many of the issues pertaining to health care are fundamentally economic issues, from universal coverage and waste issues to aggregate supply of health care professionals and the pricing of pharmaceuticals. This book will provide, in one place, theoretical and empirical research on a wide variety of issues in medical economics.

In Chapter 1, Dr. Patricia M. Anderson of Dartmouth College, Dr. Kristin Butcher of Wellesley College, and Dr. Diane Schanzenbach of the University of Chicago collaborate to state that, given the large amount of time that children spend in school, public health policy makers tend to focus on schools as an important battleground in the fight against childhood obesity. The question of interest is whether the school environment is currently a contributing factor to the increase in childhood obesity, and whether changes in school policies could help curb the increase. It is important to realize that fundamentally, obesity is the result of an energy imbalance – more calories are consumed than are burned. It is possible for the school environment to have an effect on either side of this equation. Of interest, then, is whether being in school is beneficial or detrimental to children's weight outcomes overall, as well as identifying what policies may be affecting the energy balance equation. Discussion suggests that some school environments are worse than others – that is, that

schools with lower quality lunches, more junk food, and more accountability pressure are likely to produce fatter children. It may still be the case, though, that being in school is better than being out of school – it will depend on what the alternative is.

In this chapter, Drs. Anderson, Butcher, and Schanzenbach review their (and other's) research on the role of school policy (and school in general) on childhood obesity. Their aim is to synthesize this literature and provide interpretation and context for readers new to the area of school policy and childhood obesity. Using the simple idea of energy balance, they simulate the impact of various policies, by making straightforward assumptions about the changes in activity levels or caloric intake implied by each policy. They implement a model of basal metabolic rate, and metabolic equivalent intensities of activity, and then use the fact that an excess of 7,500 calories adds a kilogram of weight, to simulate the potential effect of a range of policies. Seemingly, small changes in policy may well result in noticeable changes in the weight distribution of children.

In Chapter 2, Dr. Michael Grossman of the City University of New York and NBER, Dr. Sara Markowitz of Emory University and NBER, and Dr. Ryan Conrad of the City University of New York address alcohol policies and their effect on child mistreatment. The purpose of this chapter is to empirically estimate the propensity for alcohol-related policies to influence rates of child abuse and neglect. The alcohol regulations of interest include beer, wine, and liquor taxes, drunk driving laws, and areas “dry” for beer. Using a national database on incidents of child abuse and neglect, they estimate the effects of alcohol control policies in reducing child abuse measured as the number of children with confirmed or suspected reports of child maltreatment and the number of children who die as a result of abuse or neglect. Results indicate that higher excise taxes on alcohol may be effective in reducing the incidence of child maltreatment.

In Chapter 3, Dr. Resul Cesur of Georgia State University, Dr. Chris M. Herbst of Arizona State University, and Dr. Erdal Tekin of Georgia State University and NBER analyze the impact of child care utilization on school-age children's body mass index (BMI). They state that childhood obesity rates in the United States have increased dramatically over the past three decades. The growing use of non-parental child care has raised awareness among health care professionals and policy makers of the critical role that these settings play in shaping children's eating and activity habits. However, little empirical research focuses on the relationship between child care utilization and children's weight outcomes. Drawing on rich data from the Kindergarten Cohort of the Early Childhood Longitudinal Study (ECLS-K), this chapter makes a number of contributions to existing research in this area. First, we exploit the longitudinal data structure in the ECLS-K to construct a multiperiod panel of children, with information on BMI and child care attendance observed during the fall of kindergarten and the spring of first, third, fifth, and eighth grades. Second,



they specify and estimate a fixed effects quantile regression (FEQR) model that both differences out time-invariant unobserved heterogeneity and allows them to address the possibility that non-parental care has heterogeneous effects on children's weight at different points in the BMI distribution. Finally, they consider different parameterizations of child care utilization, including participation in various modes of child care as well as measures of the intensity of participation (e.g., hours).

In Chapter 4, Dr. W. David Bradford of the University of Georgia observes that time preferences are considered a fundamental characteristic of economic behavior. Dynamic models of utility maximization have strong predictions about the effects of different rates of discounting on individual behavior. In general, we expect that higher rates of discounting lead an individual to more strongly shift consumption of economic goods to the present and economic bads to the future, relative to a person with lower rates of preference for the present. While time preferences are clearly a fundamental of economic behavior, economists devote surprisingly little attention to understanding their origins. Some of the earliest modern theoretical work on the subject was conducted by Paul Samuelson. He proposed a discount factor that indicates a strength of preference for the present over the future. For several decades after Samuelson's work, his model of discounted utility was the standard conceptual basis for economists' understanding of intertemporal choice. Since this time, some – though by no means a great deal of – additional research has been conducted to explore what factors might contribute to the individual's level of discounting. Becker and Mulligan propose a theoretical model of how individuals' time preferences change. This research has direct implications for the expected relationships between (1) important choices a person makes/constraints a person faces and (2) the strength of their discounting of the future.

While some progress has been made in understanding how time preferences might be endogenized, and substantial effort has been devoted to exploring the impact of time preferences on many aspects of economic life, surprisingly little attention has been paid to the effect of time preferences on health and health care – despite the fact that many aspects of health care reflect strongly time-dependent choices. Individual rates of discounting may affect many aspects of health choice. Conceptual models of optimal insurance design often explicitly incorporate individual time preferences (through the introduction of a discount rate) and implicitly incorporate risk preferences (through the shape of the instantaneous utility function being maximized). Empirically, however, relatively little is known about how individual-level time and risk preferences affect selection of insurance types with varying degrees of riskiness and expected future net medical costs. This chapter presents a survey of what is known about the role of time preferences in health-related choices, ranging from risky behaviors (smoking and illicit drug use), to preventative health care, to insurance choice. In addition, original research is presented on health care

and health insurance effects of discounting. Finally, the chapter highlights promising areas for future research.

In Chapter 5, Dr. James Marton of Georgia State University, Dr. Cynthia S. Searcy of Georgia State University, and Dr. Jennifer Ghandhi of the University of Alabama question if certain types of children are differentially affected by children's health insurance premiums. Concern over the presence of inequity within the State Children's Health Insurance Program (SCHIP) has motivated studies involving demographic characteristics of SCHIP enrollees, particularly racial disparities among children enrolled in the program. Minority children are more likely to disenroll from SCHIP than their white counterparts, but it is unclear whether these children leave public coverage altogether or whether they simply move into other categories of public coverage. Some worry that increases in cost sharing might worsen racial inequity within SCHIP. Our purpose is to examine the differential short-run effects on children based on sociodemographic characteristics after the introduction of a \$20 monthly family premium in Kentucky's SCHIP (KCHIP 3) in late 2003. Drs. Marton and Ghandhi employ a competing risks model (Marton *et al.*, 2009) in order to differentiate between exits to other forms of public coverage and exits to no public coverage. The original model shows that non-white children were 32% more likely to exit within each of the first three months after the premium increase than white children ( $p < 0.01$ ). The competing hazard model allows them to see that non-white children were 52% more likely to exit public coverage than their white counterparts ( $p < 0.01$ ). The implication is that minority children are more likely to become uninsured than white children, suggesting that the policy change adversely affects non-whites.

In Chapter 6, Carolina C. Felix and Dr. David E. Frisvold of Emory University looks at early childhood education as an investment in health. He states that there is a growing body of evidence that suggests that early childhood socioeconomic conditions have lasting economic consequences, reinforcing and sustaining disparities in health and education. Head Start is the principal federally funded program through which the United States invests directly in the human capital of disadvantaged preschool children. This chapter focuses on whether participation in the Head Start program influences health behaviors, including smoking and drug use, in adolescence. To address this question, Dr. Frisvold begins by reviewing the literature on the relationship between early childhood circumstances and long-run health outcomes. Although there is an extensive body of research on the impact of Head Start participation, there has been little research on the impact on risky behaviors in adolescence.

The difficulty that arises in examining the effect of Head Start participation is that selection into Head Start is the result of choices made by parents and administrators. To examine the potential influence of selection due to observed characteristics and selection due to unobserved

characteristics, Dr. Frisvold follows the methodology developed by Altonji *et al.* (2005) to estimate the effect of Head Start participation. Their strategy is to use the amount of observed selection as a guide for the extent of unobserved selection. Dr. Frisvold uses this strategy to examine the impact of Head Start participation on smoking and drug use throughout adolescence and the extent to which varying degrees of selection on unobservables influence this relationship. To further understand the sources of any selection on unobservables, Dr. Frisvold gathers information on the required admissions criteria that Head Start centers use to determine which of the eligible children are offered admission in the center. Head Start centers are required to admit the most disadvantaged children using an established ranking, although the criteria used to determine who are the most disadvantaged can vary across centers. Dr. Frisvold uses data from Fragile Families and the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B) to attempt to narrow the bounds on the estimate of the impact of Head Start participation.

In Chapter 7, Dr. Gulcin Gumus of Florida International University and IZA, Dr. Jenny F. Homer of the University of Miami, and Dr. Michael T. French discuss the impact of universal helmet laws on motorcycle riding and safety. They observe that in 2007, 5,154 motorcyclists were killed and approximately 103,000 were injured in the United States. Although motorcycles accounted for only 3 percent of registered vehicles at that time, motorcyclists were involved in 13 percent of all traffic fatalities. Studies clearly demonstrate that universal helmet laws can reduce the likelihood of being killed or severely injured in a crash. Nevertheless, helmet policies vary across states. As of February 2009, 20 states had universal helmet laws requiring all riders to wear a helmet, 27 had partial helmet laws for some riders, and 3 did not have a helmet law.

Drs. Gumus, Homer, and French further investigate the effectiveness of such policies by focusing on their long-term impact and their effect on motorcycle use. Using state-level longitudinal data for 1975–2005, they estimate how the adoption and repeal of universal helmet laws influence motorcycle safety. In an effort to address the potential endogeneity of adoption or repeal of helmet laws, they use a dynamic specification that includes leads and lags of the helmet law adoptions and repeals. Their results confirm earlier findings that adoption of universal helmet laws prevents fatalities, whereas repeals lead to increases in fatality rates. They also show that the effects of both adoption and repeal persist much past the year the states enact or repeal such laws. In addition, they provide evidence that helmet laws operate in the intended manner such that they reduce fatalities mainly by improving safety rather than by reducing motorcycle riding. These findings have key public health implications for states that may be considering changes to their existing motorcycle helmet policies.

In Chapter 8, Dr. Jason M. Fletcher of Yale University attempts to account for racial and ethnic disparities in children's overweight status at

two years of age. Dr. Fletcher observes that recent research has suggested the presence of large racial/ethnic differences in young children. This chapter examines whether family factors other than race/ethnicity explain these large racial/ethnic differences in overweight status of young children. Additionally, this chapter examines previously undocumented determinants of early childhood overweight status. Dr. Fletcher uses longitudinal nationally representative sample of children born in 2001 (ECLS-B). Participants come from diverse socioeconomic and racial/ethnic backgrounds with oversamples of twins, low and very low birth weight children, and minority groups. Multivariate logistic regression analyses are used, and data are weighted to account for the survey design of the data set.

Dr. Fletcher finds evidence that although there are large racial/ethnic differences in the prevalence of being overweight as early as two years of age, these differences can be accounted for by controlling for a small set of family characteristics, including marital status and whether English is the primary language spoken at home. This chapter also presents new findings on the determinants of early childhood overweight status. For example, evidence suggests that parental activities with their young children, such as playing chasing games and walking/playing outside, are associated with lower odds of early overweight status. Dr. Fletcher concludes that family factors other than race/ethnicity may account for the large racial/ethnic differences in early childhood overweight status that have been found in previous research. Health investments in young children targeted to children from single-parent households and from households with low English language skills may be efficient. He also states that additional research is required to examine the mechanisms that confer high overweight rates on children from single-family and non-native households.

In Chapter 9, Dr. Jasmina Spasojevic discusses the results of a natural experiment on the effects of education on adult health in Sweden. Dr. Spasojevic states that understanding health determinants and their mechanisms affecting health is an important social policy issue. Empirical tests in the health literature abound with the undisputed finding that the number of years of formal schooling completed is the most important correlate of good health. There is less consensus as to whether this correlation reflects a causal relationship of more schooling to better health. This chapter capitalizes on a unique social experiment – the 1950 Swedish comprehensive school reform that was implemented in stages and by municipal areas. Consequently, people born between 1945 and 1955 went through two different school systems (one of which required at least one more year of schooling). This chapter uses the instrumental variables (IV) technique to estimate formal schooling's causal effect on adult health in Sweden. The instrumental variable for degree of education (schooling) generated from compulsory school reform yields a consistent estimate of education's causal impact on health as measured by an index of bad health and of BMI in the healthy range. Dr. Spasojevic finds that the additional

schooling generated by Sweden's compulsory school reform produces improved adult health (controlling for cohort and county effects, family background characteristics, and individual income).

In Chapter 10, Dr. McCarthy presents a survey of the economics of the pharmaceutical industry. With expenditures totaling \$227 billion in 2007, prescription drug purchases are a growing portion of the total medical expenditure, and as this industry continues to grow, prescription drugs will continue to be a critical part of the larger health care industry. In this chapter, Dr. McCarthy focuses on the role of R&D and marketing, the determinants (and complications) of prescription drug pricing, and various aspects of consumer behavior specific to the pharmaceutical industry, such as prescription drug regulation, the patient's interaction with the physician, and insurance coverage. This chapter also provides background in areas not often considered in the economics literature, such as the role of pharmacy benefit managers in prescription drug prices and the differentiation between alternative measures of prescription drug prices. As is evident from this chapter, the prescription drug industry is complex and much of the research in this industry remains inconclusive.

In Chapter 11, the final chapter of this volume, Drs. Joe Hirschberg and Jenny Lye of University of Melbourne discuss effects of the smoking bans in gaming venues. The authors show that, while the effects of smoking bans on smoking might seem obvious, other effects could be less intuitive if smokers are more likely than non-smokers to frequent gaming venues. The authors use data from gaming venues in Victoria, Australia, and examine the consequences of the smoking ban on gaming expenditures and tax revenues.

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