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**DATE:** August 27, 2012

**TO:** Kathleen Sebelius, Secretary  
United States Department of Health and Human Services

**FROM:** Ernst Berndt, Ph.D.  
Chair, Medicare Economic Index Technical Advisory Panel

**SUBJECT:** Final Report from the Medicare Economic Index Technical Advisory Panel

Dear Secretary Sebelius:

Enclosed for your review is the final report of the Medicare Economic Index (MEI) Technical Advisory Panel (Panel). The Panel conducted a technical review of the MEI, including the inputs, input weights, price-measurement proxies, and productivity adjustment. After assessing the relevance and accuracy of these inputs to current physician practices, the Panel drafted its recommendations.

For your reference, below are all Federal Register Rules and Notices related to the Panel:

- [CMS-1503-P] July 13, 2010 – The Centers for Medicare & Medicaid Services (CMS) proposes to convene a technical advisory panel to review all aspects of the MEI (75 FR 40093)
- [CMS-1503-FC] November 29, 2010 – CMS confirms that a technical advisory panel will review all aspects of the MEI (75 FR 73270)
- [CMS-8049-N] October 7, 2011 – CMS announces the establishment of the Panel and requests nominations for members (76 FR 62415)
- [CMS-8050-N] May 4, 2012 – CMS announces the members of the Panel and that the first public meeting of the Panel will be May 21, 2012 (77 FR 26553)
- [CMS-8051-N] June 8, 2012 – CMS announces that the second public meeting of the Panel will be June 25, 2012 (77 FR 34050)
- [CMS-8052-N] June 29, 2012 – CMS announces that the third and final public meeting of the Panel will be July 11, 2012 (77 FR 38837)

The Panel charter expires on September 27, 2012. Please let me know before then should you have any questions concerning this final report and the process leading to its publication.

/s/

Ernst Berndt, Ph.D.  
Chair, Medicare Economic Index Technical Advisory Panel

Attachments: 1

cc:

Marilyn B. Tavenner  
Acting Administrator  
Centers for Medicare & Medicare Services

Richard S. Foster, F.S.A.  
Chief Actuary  
Office of the Actuary  
Centers for Medicare & Medicaid Services

# REPORT TO THE HHS SECRETARY

## REVIEW OF THE MEDICARE ECONOMIC INDEX

DATE:  
AUGUST 2012

**Prepared by:**  
2012 Medicare Economic Index Technical Advisory Panel<sup>1</sup>

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<sup>1</sup> The views and opinions expressed in the Panel's report are those of the individual panelists and do not necessarily reflect the views and opinions of the institutions with which they are and have been affiliated.

## Contents

Foreword.....	0
Executive Summary.....	1
Overview of the CMS Medicare Economic Index (MEI).....	10
Chapter 1: Introduction.....	21
MEI History.....	21
Technical Advisory Panel.....	21
Finding 1.1:.....	22
Organization of Report.....	23
Chapter 2: Data Sources.....	24
Physician Practice Information Survey and Alternative Data Sources.....	24
Recommendation 2.1:.....	26
Recommendation 2.2:.....	27
Chapter 3: MEI Cost Components and Weights.....	28
Finding 3.1:.....	28
Physician Compensation.....	29
Recommendation 3.1:.....	30
Recommendation 3.2:.....	31
Practice Expenses.....	32
Recommendation 3.3:.....	32
Recommendation 3.4:.....	32
Finding 3.2:.....	33
Chapter 4: Proxies for the MEI Cost Components.....	34
Finding 4.1:.....	34
Physician Compensation.....	36
Recommendation 4.1:.....	36
Recommendation 4.2:.....	36
Recommendation 4.3:.....	38
Non-Physician Compensation.....	38
Recommendation 4.4:.....	40
Fixed Capital Expenses.....	41
Recommendation 4.5:.....	42
Moveable Capital Expenses.....	43

Finding 4.2:.....	43
Recommendation 4.6:.....	43
Professional Services Expenses.....	43
Recommendation 4.7:.....	43
Professional Liability Insurance.....	44
Finding 4.3:.....	44
Chapter 5: Productivity Adjustment.....	45
Finding 5.1:.....	45
Finding 5.2:.....	50
Chapter 6: Conclusion.....	51
Appendix A: Charter: Medicare Economic Index Technical Advisory Panel.....	52
Appendix B: TAP Member Biographical Sketches.....	55

## Foreword

The Medicare Economic Index (MEI) has been a critical element of the Medicare physician payment update mechanism for nearly four decades. Throughout this time, the MEI has served as the statutory “price” component for updating Medicare payment rates for physician services. (Other factors, such as the prior Medicare Volume Performance Standard and the current Sustainable Growth Rate formula, also affect payment updates through non-price considerations.) Current law continues to mandate use of the MEI as part of the determination of future physician payment updates. Consequently, it remains vital to have a precise measurement of the price growth associated with the goods and services that physicians require in order to provide care to Medicare beneficiaries.

Earlier this year, in our ongoing effort to construct and maintain contemporary and accurate price indexes under the law, CMS chartered an independent panel of technical experts under the Federal Advisory Committee Act to evaluate the MEI. The Medicare Economic Index Technical Advisory Panel consisted of five exceptionally qualified individuals who dedicated their expertise and their time to carefully review the index’s cost categories, the weights for these categories, the corresponding bases for measuring price growth in each category, and the MEI’s productivity adjustment.

The Panel’s findings and recommendations are described in this report and are based on objective technical factors and analyses. My staff and I are carefully studying each of the suggested changes and, where appropriate, will actively pursue their respective adoption through the rulemaking process. For cases in which the Panel’s recommendations require additional research, we will make every effort to follow through, subject to available resources. Based on the Office of the Actuary’s periodic data updates and the valuable input from the Panel, the MEI will continue to reflect the cost structure associated with the delivery of 21<sup>st</sup>-century medicine in physicians’ offices and appropriate measures of price growth and productivity gains.

I wish to extend my sincerest gratitude to Ernst Berndt, Ph.D., for his leadership in serving as the Panel’s chairman. Likewise, for all of their expert contributions in reviewing the MEI and preparing this report, I would like to express my great appreciation to Robert Berenson, M.D., Zachary Dyckman, Ph.D., Kurt Gillis, Ph.D., and Kathryn Kobe, M.A. The collective work of these *individuals* embodies the very meaning of public service.

Richard S. Foster, F.S.A.  
Chief Actuary  
Office of the Actuary  
Centers for Medicare & Medicaid Services

## EXECUTIVE SUMMARY

**INTRODUCTION:** The Medicare Economic Index (MEI) measures price changes in the inputs (goods and services) required to operate a self-employed physician practice in the United States. These inputs are aggregated into two broad categories – the physician’s own time and his or her practice expenses. The Centers for Medicare & Medicaid Services (CMS), the agency that administers the Medicare program, uses the MEI in the annual update of the fees paid to physicians and other clinical providers who are entitled to bill for services provided to Medicare beneficiaries under Part B of Medicare. The Office of the Actuary (OACT), within CMS, has the overall responsibility of maintaining and updating the MEI.

Periodically, CMS seeks advice from external experts on the input composition of the MEI, the data used to estimate the MEI’s cost components, and the price proxies used in the index.<sup>2</sup> In 2012, a Technical Advisory Panel (TAP) was assembled to provide such advice, including recommendations for technical improvements to the MEI. The Panel’s report contains a Foreword by the Chief Actuary of CMS and an Overview of the MEI prepared by OACT staff and furnished to the panelists before their first meeting. The report contains the Panel’s findings and recommendations in five chapters, followed by a brief concluding chapter. Findings and recommendations are numbered as Finding x.y and Recommendation x.z, where x is the chapter number.

The Panel’s deliberations were made in accordance with the Federal Advisory Committee Act (FACA). This means that the meetings were conducted in public and stakeholders were given the opportunity to share their evidence and views with panel members. Transcripts of the public meetings are available at <https://www.cms.gov/Regulations-and-Guidance/Guidance/FACA/MEITAP.html>.

The following five individuals comprised the 2012 MEI TAP:

- Ernst Berndt, Ph.D. (Chair), Professor of Applied Economics, Massachusetts Institute of Technology, Sloan School of Management
- Robert A. Berenson, M.D., Institute Fellow, Urban Institute
- Zachary Y. Dyckman, Ph.D., President, Dyckman & Associates
- Kurt D. Gillis, Ph.D., Senior Economist, American Medical Association
- Kathryn L. Kobe, M.A., Director, Price, Wage, and Productivity Analysis, Economic Consulting Services

The Panel conducted its meetings on May 21, June 25, and July 11, 2012. It produced eight findings and 13 recommendations for consideration by CMS. The analysis and reasoning supporting the findings and recommendations, which are presented below, are detailed in the full report.

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<sup>2</sup> The cost components, cost weights, and price proxies are shown on Exhibit 4.1 of the report.

In their early discussions of the form of the MEI, there was general consensus among the panelists for the continued use of the existing index formulation, leading to the following finding:

**Finding 1.1: The Panel concludes that the continued construction, implementation, and monitoring of the MEI as a fixed-weight index is appropriate, given the lack of evidence of significant substitution across input cost categories over time, as well as limitations associated with existing data sources on physician office expenses.<sup>3</sup>**

**DATA SOURCES:** The data requirements to estimate the MEI are substantial. First, it is necessary to divide overall expenses into the two broad categories of the physician's own time and practice expenses. Then, both broad categories need to be further subdivided into cost components and their respective weights. Third, data are needed to proxy the annual change in the prices of each of the MEI components. Finally, an appropriate source is needed to estimate multifactor productivity for the productivity adjustment.

The Panel initially discussed basic strategies for obtaining data to support the MEI, which has long relied on data collected by the American Medical Association (AMA) for the initial division of the MEI into the physician's own time and various practice expenses. That process continues today as, most recently, OACT incorporated data collected in the AMA's Physician Practice Information Survey (PPIS), which yielded data for 2006. The Panel discussed alternative data sources that could replace or augment the PPIS.

The Panel expressed considerable concern both for the representativeness of existing data and for the lack of data to support the MEI in the future, leading to the following recommendations:

**Recommendation 2.1: The Panel recommends the CMS Office of the Actuary research whether using self-employed physician data for the MEI cost weights continues to be the most appropriate approach. In particular, the Panel notes that in recent years there is a continuing trend toward larger, physician-owned practices as well as movement from physician-owned practices toward hospital-owned practices. However, it is unclear whether adequate data are available to reflect this shift in the MEI or whether the cost structure for employed physicians would be materially different from that for self-employed physicians. Accordingly, consideration of the availability and viability of specialty and geographically representative expense data for physicians in larger practices and physicians employed by hospitals and other business entities would be an important aspect of this research.**

**Recommendation 2.2: The Panel is concerned about the absence of a reliable, ongoing source of data for maintaining the MEI. Accordingly, the Panel recommends that OACT scan for and research additional data**

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<sup>3</sup>Cost weights are revised periodically. Current weights are based on 2006 expense data (collected in 2007 and 2008).

**sources that may allow for more frequent updates to the MEI's cost categories and their respective weights. Such data sources could include (but are not limited to) the following:**

- **The Medical Group Management Association's Cost Survey**
- **The Bureau of the Census' Services Annual Survey (including the possibility of adding questions to the survey)**
- **Pending feasibility, a CMS survey, possibly conducted jointly with the American Medical Association, that focuses exclusively on physician expenses as they relate to the MEI. The Panel notes that the lead time to conceive, develop, fund, and administer such a survey would likely be considerable.**
- **Alternatively, and again pending feasibility, CMS could obtain more robust data by means of detailed formal cost reports based on a methodologically sound sample of physician practices. It would be appropriate to reimburse selected practices for the expenses they would incur in preparing the cost reports. This approach would address many of the traditional concerns with voluntary surveys and thereby improve the basis for establishing cost weights for the MEI. Whether the degree of improvement would warrant the cost associated with the process would be an important consideration.**

The Panel is well aware that arranging for a new, ongoing source of data for the MEI is a time-consuming and expensive proposition. Nevertheless, the Panel suggests that OACT should pursue this course or demonstrate that new data would be unlikely to change MEI components and weights to a degree that would justify the added expense and effort.

**MEI COST COMPONENTS AND WEIGHTS:** The Panel was charged to review the MEI cost components and weights, based primarily on the 2006 PPIS data, and make recommendations for updating and improving them. A general discussion led to the following finding:

**Finding 3.1: The Panel finds that the current categorization of input costs in the MEI is reasonable, but recommends certain refinements and monitoring as noted below.**

The Panel believes the form of the MEI as a fixed-weight index that separates inputs into those associated with physician compensation and those associated with practice expenses is appropriate. However, the Panel has several concerns about specific MEI components.

The Panel's discussion initially focused on physician compensation and led to the following recommendation:

**Recommendation 3.1: The Panel recommends that OACT revise the Physician Wages and Salaries and Physician Benefits cost weights in the 2006-based MEI. OACT should determine the cost weights for wages and benefits to ensure they are consistent with the definitions in the Employment Cost Index (ECI). Specifically, OACT should consider**

**estimating the proportion of the Physician Wages and Salaries cost weight associated with physicians' retirement benefits and reclassifying that percentage into the Physician Benefits cost weight in order to be consistent with the costs included in the ECI for Wages and Salaries and the ECI for Benefits price proxies. Evaluation of the PPIS data determined that retirement benefits were included in the Physician Wages and Salaries cost weight while the associated price change is currently reflected in the ECI for Benefits.**

This recommendation is made in part to ensure that the category definitions used in the MEI are consistent with the definitions used in the price proxies that estimate price changes in MEI components.

The Panel noted there is a growing trend of non-physician clinicians, such as nurse practitioners and physician assistants, providing services to Medicare beneficiaries. The Panel was uncertain whether the current classification of non-physician clinician expenses in the MEI is consistent with how these providers are paid under the fee schedule, leading to the following recommendation:

**Recommendation 3.2: The Panel recommends that OACT evaluate the appropriate classification of the expenses associated with non-physician clinical staff who can bill Medicare independently. Among the factors OACT should consider are:**

- **Any definition of “physicians” that exists under current law in relation to the Medicare physician fee schedule and whether these definitions might limit OACT’s ability to make changes;**
- **Whether time for non-physician staff who can bill independently is included among the inputs to the practice expense Relative Value Unit (RVU) methodology under the Medicare physician fee schedule (in other words, is the treatment of this input under the practice expense RVU methodology consistent with that under the MEI?);**
- **Whether there is any evidence these staff do not spend the majority of their time providing “physician services” as defined by Medicare; and**
- **The extent to which those who can bill independently actually do so.**

In the MEI, practice expenses are divided into detailed cost categories, such as non-physician labor costs, rent, medical equipment, and other expenses. The Panel addressed numerous issues related to how the categories are defined and reported. These discussions led to the following recommendation:

**Recommendation 3.3: The Panel recommends that OACT create a new cost category entitled Professional Services that should consist of the All Other Services cost category (and its respective weight) and the Other Professional Expenses cost category (and its respective weight). The Panel further recommends that this category be disaggregated into**

**appropriate occupational categories consistent with the relevant price proxies.**

One issue in maintaining and updating the MEI is the degree of granularity needed in both the calculation and reporting of the MEI. The Panel determined that it might be prudent to collapse some of the non-labor practice expense categories with other categories for presentation purposes. The Panel's discussion of this issue led to the following recommendation:

**Recommendation 3.4: The Panel recommends that OACT report more aggregated costs under the Office Expenses cost category. In particular, reported costs associated with Rubber and Plastics, Chemicals, All Other Products, and Paper should be combined. However, the Panel believes that OACT should maintain separately the underlying details and calculations associated with these aggregated costs when applying price proxies and calculating the overall MEI and its subcomponents.**

A final issue the Panel addressed in its discussion of the MEI cost components was concern with practice expenses for prescription drugs, leading to the following finding:

**Finding 3.2: The Panel finds the current methodology of excluding all drug expenses, including non-separately billable drug expenses, from the calculation of the cost weights in the MEI is appropriate. The finding to continue to exclude non-separately billable drugs is based primarily on their relatively negligible costs.**

**PROXIES FOR THE MEI COST COMPONENTS:** Once the MEI cost categories are established, each cost category is matched to an appropriate price or wage variable, referred to as a "price proxy." A general discussion led to the following finding:

**Finding 4.1: The Panel finds the current price proxies used in the MEI are reasonable, but recommends certain refinements and monitoring as noted below.**

Since its inception, the MEI has utilized the Bureau of Labor Statistics' (BLS) data series on Average Hourly Earnings (AHE) for production and non-supervisory employees as the price proxy for Physician Wages and Salaries. AHEs are calculated by dividing gross payrolls for wages and salaries by total hours. The AHE proxy is representative of actual changes in hourly earnings for the nonfarm business economy, including shifts in employment mix. An alternative to an AHE concept is the BLS Employment Cost Index concept, which measures the rate of change in employee wage rates per hour worked. ECIs measure the pure rate of change in wages by industry and/or occupation and are not affected by shifts in employment mix across industries and occupations.

**Recommendation 4.1: The Panel recommends that OACT revise the price proxy associated with Physician Wages and Salaries from an Average Hourly Earnings concept to an Employment Cost Index concept.**

The Panel's discussion of alternative ECI measures led to the following recommendation:

**Recommendation 4.2:** The Panel recommends that CMS revise the price proxy associated with changes in Physician Wages and Salaries to use the Employment Cost Index for Wages and Salaries, Professional and Related, Private Industry. The Panel believes this change would maintain consistency with the guidance provided in the 1972 Senate Finance Committee report titled "Social Security Amendments of 1972," which stated that the index should reflect changes in practice expenses and "general earnings."<sup>4</sup> In the event this change would be determined not to meet the legal requirement that the index reflect "general earnings," the Panel recommends replacing the current proxy with the Employment Cost Index for Wages and Salaries, All Workers, Private Industry.

The second component of physician compensation is benefits, consisting of health insurance, pension contributions, and other non-wage forms of compensation. Since the Panel made a recommendation to change the wages and salary proxy to an ECI, the Panel believed it was important to also consider the price proxy that CMS employs for the Physician Benefits component of the MEI. The Panel believes, for consistency reasons, the price proxy selected should reflect the same characteristics in terms of worker skill mix and industry representation as the Wages and Salaries price proxy. These discussions led to the following recommendation:

**Recommendation 4.3:** The Panel recommends that any change in the price proxy for Physician Wages and Salaries be accompanied by the selection and incorporation of a Physician Benefits price proxy that is consistent with the Physician Wages and Salaries price proxy.

The Panel considered two alternatives to the current system of classifying non-physician wages and salaries utilizing the BLS' North American Industrial Classification System (NAICS), and after an extensive discussion concluded the following:

**Recommendation 4.4:** The Panel recommends the disaggregation of the Non-Physician Compensation costs to include an additional category for health-related workers. This disaggregation would allow for health-related workers to be separated from non-health-related workers. CMS should rely directly on PPIS data to estimate the health-related non-physician compensation cost weights. The non-health, non-physician wages should be further disaggregated based on the Current Population Survey and Occupational Employment Statistics data. The new health-related cost category should be proxied by the ECI, Wages and Salaries, Hospital (NAICS 622), which has an occupational mix that is reasonably close to that in physician offices. The Non-Physician Benefit category should be proxied by a composite benefit index reflecting the same relative occupation weights as the non-physician wages.

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<sup>4</sup> U.S. Senate, Committee on Finance, "Social Security Amendments of 1972," Report of the Committee on Finance United States Senate to Accompany H.R. 1, September 26, 1972, p. 191.

The rationale for this recommendation stems from a concern that trends in health-related worker compensation in physician offices may be different at times from trends in non-health worker compensation.

The cost category that consumes the largest share of Office Expenses, Fixed Capital, was the topic of considerable discussion, leading to the following recommendation:

**Recommendation 4.5:** The Panel recommends using the Producer Price Index for Lessors of Nonresidential Buildings (NAICS 53112) for the MEI Fixed Capital cost category as it represents the types of fixed capital expenses most likely faced by physicians. The Panel noted the volatility in the index, which is greater than the Consumer Price Index for Owners' Equivalent Rent of Residences. This relative volatility merits ongoing monitoring and evaluation of alternatives.

The Panel's recommendation is responsive to the general belief that trends in fixed capital expenses in physician offices should be more congruent with trends in business office space costs than residential costs. The volatility of the index is a source of concern and the basis of the Panel's advice that the recommended proxy and alternatives should continue to be evaluated.

Moveable Capital is a smaller percentage of the MEI than Fixed Capital, but the degree to which the price proxy, the PPI for Machinery and Equipment, accurately represents movable capital expenditures in physician offices is a concern. The Panel's examination of the apparent difference between physician offices and the broad industrial base of the proxy led to the following finding and recommendation:

**Finding 4.2:** The Panel finds the current price proxy used for Moveable Capital expenses, specifically the Producer Price Index for Machinery and Equipment, may not be representative of the types of movable capital purchases made in the production of physicians' services.

**Recommendation 4.6:** The Panel recommends CMS conduct research into and identify a more appropriate price proxy for Moveable Capital expenses. In particular, the Panel believes it is important that a proxy reflect price changes in the types of non-medical equipment purchased in the production of physicians' services, as well as the price changes associated with Information and Communication Technology expenses (including both hardware and software).

Earlier, the Panel recommended the creation of a new cost category, Professional Services, to capture the types of professional services (such as contract billing, legal, and accounting) purchased by physician practices. The Panel recognizes the new category would need to be accompanied by a new price proxy, as indicated in the following recommendation:

**Recommendation 4.7:** The Panel recommends price changes associated with the Professional Services category be proxied by an appropriate blend of Employment Cost Indexes that reflect the types of professional services purchased by physician offices.

The Panel believes it will be important for the MEI to accurately reflect a distribution of professional services, but leaves to CMS the task of identifying the appropriate ECIs to use and how to calculate weighted averages to arrive at an appropriate blend.

Unlike the other price proxies based on data from BLS and other public sources, the proxy for Professional Liability Insurance (PLI) is based on data collected directly by CMS from a sample of commercial insurance carriers. The Panel discussed alternative data sources for the PLI price proxy, including information available from BLS and through state insurance commissioners, and arrived at the following finding:

**Finding 4.3: The Panel finds the CMS-constructed professional liability insurance price index used to proxy changes in professional liability insurance premiums in the MEI represents the best currently available method for its intended purpose. The Panel also believes the pricing patterns of commercial carriers, as measured by the CMS PLI index, are influenced by the same driving forces as those observable in policies underwritten by physician-owned insurance entities; thus, the Panel believes the current index appropriately reflects the price changes in premiums throughout the industry.**

**PRODUCTIVITY ADJUSTMENT:** The fourth element of the MEI (along with cost categories, cost category weights, and price proxies) is an economy-wide productivity adjustment. If the 10-year moving average of economy-wide productivity change is positive in any year, as it usually is, the productivity adjustment reduces the effect of increases in input prices in the MEI (effectively converting the index from an input price index to an output price index). Absent a productivity adjustment in the MEI, physicians would be receiving increased payments resulting from both their ability to increase their individual outputs and the productivity gains already reflected in the wage proxies used in the index. Currently, the productivity adjustment in the MEI is based on changes in economy-wide productivity based on the rationale that the price proxy for physician income reflects changes in economy-wide wages. Implicitly, this assumes physicians can achieve the same level of productivity as the average general wage earner.

The Panel discussed the rationale for the MEI productivity adjustment and arrived at the following finding:

**Finding 5.1: The Panel reviewed the basis for the current economy-wide multifactor productivity adjustment (Private Nonfarm Business Multifactor Productivity) in the MEI and finds such an adjustment continues to be appropriate. This adjustment prevents “double counting” of the effects of productivity improvements, which would otherwise be reflected in both (i) the increase in compensation and other input price proxies underlying the MEI, and (ii) the growth in the number of physician services performed per unit of input resources, which results from advances in productivity by individual physician practices.**

The Panel also discussed at length the extent to which Private Nonfarm Business Multifactor Productivity is the appropriate productivity adjustment to the MEI. The Panel believes that,

conceptually, the economy-wide multifactor productivity (MFP) measure is consistent with the use of economy-wide compensation growth such that the following identity can be preserved:

$$\text{Input Price Growth} - \text{MFP Productivity Gains} = \text{Output Price Growth}$$

In the case of the MEI, the rates of change in the input prices associated with the MEI mostly reflect changes in economy-wide wage measures (though weighted by physician-specific cost weights); using an economy-wide MFP measure ensures that the output price growth would also approximate economy-wide rates of increase. The Panel agreed that as long as the economy-wide MFP measure continues to be a good approximation for physician-specific MFP, then it should be used by CMS. The Panel further agreed that if there comes a time when the two MFP measures diverge for a prolonged period of time, then the use of the economy-wide MFP should be reevaluated.

Having reviewed the evidence on alternative physician productivity measures and their relationship with the economy-wide MFP measure, the Panel arrived at the following finding:

**Finding 5.2: The Panel finds the measures of growth in physician-specific productivity are of interest for the purpose of comparing the structure of price increases for physician services versus other sectors of the economy. The Panel does not recommend using a physician-specific measure, but does believe that continued monitoring is appropriate. Use of physician-specific productivity growth to adjust economy-wide compensation growth in the MEI could introduce inconsistencies in the calculation of the MEI that could distort the results. The Panel concludes it is appropriate to continue to require that the accounting identity between input price growth, output price growth, and the productivity adjustment be maintained (as is approximated by the current version of the index).**

The Panel was reassured that the most recent trend in physician productivity growth tracked closely with economy-wide productivity growth.

**CONCLUSION:** The Panel generally approves of the structure of the MEI and the methodology used to calculate it. The components of the MEI discussed by the Panel — cost categories and weights, price proxies, and productivity adjustment — are appropriate elements of a fixed-weight index for gauging inflation in the inputs of running a medical practice over time. However, given the lack of availability of relatively current data on physician practice costs, the Panel has some concerns about the continued ability of the MEI to reflect changes in the future cost structure of running a physician's practice. In particular, careful monitoring is needed to ensure that the elements of the MEI keep up with changes in the ways in which medicine is organized and practiced in the United States. Achieving this objective will require CMS to conduct analyses to determine how to get the most benefit from resources available and potentially to develop new data sources for estimating the MEI in the future.

## Overview of the CMS Medicare Economic Index (MEI)<sup>5</sup>

### History of the MEI

The Medicare Economic Index (MEI) was required by § 224 of the 1972 amendments to the Social Security Act, which amended § 1843(b) (3), to provide for an economic index to be applied to prevailing charges. The section, as subsequently amended, provides that:

“In the case of physician services[,] the prevailing charge level determined for ... any 12 month period (beginning after June 30, 1973) ... may not exceed (in the aggregate) the level determined under [§ 1843(b)(3)(ii)] for the fiscal year ending June 30, 1973, or (with respect to physicians’ services furnished in a year after 1987) the level determined under this sentence ... for the previous year except to the extent that the Secretary finds, on the basis of appropriate economic index data, that such higher level is justified by year-to-year economic changes.”

The Senate Report on H.R. 1, which became the 1972 amendments, contains a substantial discussion of Congressional intent with respect to the MEI. The relevant 1972 Senate Finance Committee report<sup>6</sup> notes:

“That the prevailing charges recognized for a locality could be increased in fiscal year 1973 and in later years only to the extent justified by indexes reflecting changes in the operating expenses of physicians and in earnings levels...”

Thus, there is at least some direction to the agency to base the MEI on consideration of two factors: physicians’ expenses and earnings levels. The Committee Report continues to refine the expectations of the MEI:

“Initially, the Secretary would be expected to base the proposed economic indexes on presently available information on changes in expenses of practice and general earnings levels combined in a manner consistent with available data on the ratio of the expenses of practice to income from practice occurring among self-employed physicians as a group.”

Nonetheless, even the Senate report made clear that Congress anticipated that there could be changes and refinements in the MEI over time:

“It is, of course, contemplated under the bill that the Secretary would use, both initially and over the long run, the most refined indexes that can be developed.” *Id.* at 192, U.S.C.C.A.N. at 5073.

The “Customary-Prevailing-Reasonable” system for setting physician payments was replaced by a national Medicare fee schedule in 1992. However, there is no suggestion that Congress, in passing physician fee schedule legislation, contemplated CMS would change the MEI. The MEI

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<sup>5</sup> This document was prepared by CMS OACT staff and delivered to Panel members before their first meeting. It was modified slightly to conform to the format of this report.

<sup>6</sup> U.S. Senate, Committee on Finance, “Social Security Amendments of 1972,” Report of the Committee on Finance United States Senate to Accompany H.R. 1, September 26, 1972, p. 191.

provisions were not amended by the original fee schedule enactment or by any amendments since then.

The initial MEI was based on research conducted in 1973.<sup>7</sup> Beginning July 1, 1975, and continuing through today, the MEI has been a fixed-weight index, reflecting the weighted-average annual price change for various inputs needed to furnish physicians' services. The MEI is generally comprised of two major input categories: (1) the physician's own time and (2) the physician's practice expenses. The interpretation of the legislative mandate led to the conclusion that the MEI should be a broad index, along the lines of the Consumer Price Index (CPI) or the implicit Gross Domestic Product (GDP) deflator. Because economy-wide productivity is implicitly reflected in the CPI and GDP deflator, a productivity adjustment was explicitly included in the MEI to allow for the MEI to approximate an output price index.

Over the years, the MEI has been revised and rebased several times. The MEI was first published on June 16, 1975 (40 FR 25446), and became effective for services furnished beginning July 1, 1975. The original MEI had a base period of 1971. The structure of the original MEI remained essentially unchanged until the Calendar Year (CY) 1993 Physician Fee Schedule (PFS) final rule (57 FR 55896), in which a comprehensive rebasing and revision process was finalized with a 1989 base year. The new index was based, in part, on the recommendations from a meeting of experts held in March 1987. The MEI was again rebased in the CY 1999 PFS final rule (63 FR 58845), which moved the cost structure of the index from a 1989 base year to a 1996 base year.

The methodology for the productivity adjustment was revised in the CY 2003 PFS final rule (67 FR 80019) to reflect the percentage change in the 10-year moving average of economy-wide private nonfarm business multifactor productivity (applicable to the index in full). Prior to that, only the labor components of the index were adjusted by an economy-wide measure of labor productivity. The MEI was again rebased in the CY 2004 PFS final rule (68 FR 63239), which updated the cost structure of the index from a base year of 1996 to 2000. The MEI was last rebased for use in the CY 2011 PFS to reflect appropriate physicians' expenses in 2006 (<http://www.edocket.access.gpo.gov/2010/pdf/2010-27969.pdf>).

Notably, as the index has been rebased over time, data collected by the American Medical Association from self-employed physicians have shown that the proportion of the index associated with the physician's own time has decreased while the practice expense proportion has increased as growth in costs associated with inputs not related to physician compensation has outpaced growth in physicians compensation itself. For the 2006-based index, the physician's own time represents 48 percent of the index while, for the 1989-based index, the physician's own time represented 54 percent.

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<sup>7</sup> Dyckman, Zachary, "The Construction and Implementation of a Medicare Physician Fee Index," HCFA Issue Paper, August 1973.

## The Role of the MEI in the SGR Formula

The MEI was continued as part of Medicare Volume Performance Standard (MVPS) from 1992 to 1998 when the physician fee schedule was implemented and continued as part of the Sustainable Growth Rate (SGR) formula that replaced the MVPS system from 1999 forward.

Section 1848(f) of the Act, as amended by section 4503 of the Balanced Budget Act of 1997 (Pub. L. 105-33), enacted on August 5, 1997, replaced the MVPS with the SGR provision. Section 1848(f) (2) of the Act specifies the formula for establishing yearly SGR targets for physicians' services under Medicare. The use of SGR targets is intended to control the growth in aggregate Medicare expenditures for physicians' services.

The SGR targets are not direct limits on expenditures; that is, payments for services are not withheld if the SGR target is exceeded by actual expenditures. Rather, the fee schedule update, as specified in section 1848(d) (4) of the Act, is adjusted to reflect the comparison of actual expenditures to target expenditures. If expenditures exceed the target, the update is reduced. If expenditures are less than the target, the update is increased. Under the statute, the update for a year is determined by comparing cumulative actual expenditures to cumulative target expenditures (referred to as "allowed expenditures" in the statute) from April 1, 1996, through the end of the year preceding the year at issue. Target expenditures for each year are equal to target expenditures from the previous year increased by the SGR, which is a percentage figure computed by combining four factors specified below:

- (1) The estimated percentage annual change in fees (including changes in input prices) for physicians' services.
- (2) The estimated percentage annual change in the average number of Medicare fee-for-service beneficiaries.
- (3) The estimated 10-year average annual percentage change in real GDP per capita.
- (4) The estimated percentage change in expenditures due to changes in law or regulations.

The balance of the physician fee schedule update for a CY that sets the payment rate (also known as the conversion factor) is determined according to the statutory formula in section 1848(d)(4) by multiplying (i) the MEI and, (ii) the update adjustment factor, which is the factor that compares actual and target expenditures.<sup>8</sup>

Table 1 lists details regarding the 2006-based MEI, including its current cost categories, cost weights (or shares), and price proxies.

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<sup>8</sup>The conversion factor is a payment level based on this cumulative update formula. The MEI affects the SGR target rate of growth through factor (1), which is currently a weighted average of the MEI and the clinical laboratory fee schedule update. In practice, since 2003, legislation has overridden the actual updates required by this formula, making the MEI somewhat more relevant for the process of scoring current law and potential legislative changes than for updating actual payments over this period. As a result, when the 2013 conversion factor is set it will reflect the cumulative annual updating formula as well as any prior legislative impacts.

**Table 1 – Current 2006-based Medicare Economic Index**

Cost Categories	Price Proxies	Cost Weights 2006=100
<b>2006-based MEI</b>		<b>100.000</b>
Physician Compensation		48.266
Wages and Salaries	AHE Total Nonfarm Private for Production and Nonsupervisory Employees	43.880
Benefits	ECI - Benefits Total Nonfarm Private	4.386
Practice Expenses		51.734
Non-Physician Compensation		19.153
Non-Physician Wages		13.752
Professional and Technical Wages	ECI - Wages and Salaries: Private Professional and Technical	6.006
Managerial Wages	ECI - Wages and Salaries: Private Managerial	1.446
Clerical Wages	ECI - Wages and Salaries: Private Clerical	4.466
Services Wages	ECI - Wages and Salaries: Private Service	1.834
Non-Physician Benefits	ECI - Benefits: Private Blend	5.401
Other Practice Expenses		26.308
Office Expenses		20.035
Utilities	CPI U for Fuel and Utilities	1.266
Chemicals	PPI for Other Basic Organic Chemical Manufacturing	0.723
Paper	PPI for Converted Paper	0.657
Rubber and Plastics	PPI for Rubber and Plastics	0.598
Telephone	CPI U for Telephone Services	1.501
Postage	CPI U for Postage	0.898
All Other Services	ECI Compensation: Services Occupations	3.582
All Other Products	CPI U for All Items Less Food and Energy	0.500
Fixed Capital	CPI U for Owner's Equivalent Rent	8.957
Moveable Capital	PPI for Machinery and Equipment	1.353
Professional Liability Insurance	CMS - Professional Liability Physician Premiums	4.295
Medical Equipment	PPI Medical Instruments and Equipment	1.978
Medical Materials and Supplies	PPI Surgical Appliances and Supplies/ CPI U Medical Supplies	1.760
Other Professional Expenses	CPI U for All Items Less Food and Energy	4.513

1\ AHE - Average Hourly Earnings (<http://www.bls.gov/ces/>)

2\ ECI - Employment Cost Index (<http://www.bls.gov/ncs/ect/>)

3\ CPI U - Consumer Price Index (<http://www.bls.gov/cpi/>)

4\ PPI - Producer Price Index (<http://www.bls.gov/ppi/>)

Source: CMS/OACT

Below are the revisions made by CMS to the MEI when the index was rebased and revised from a 2000-based index to a 2006-based index:

- The Pharmaceutical cost category was excluded as pharmaceuticals are neither paid for under the PFS nor included in the definition of “physicians’ services” for purposes of calculating the physician update via the SGR system.<sup>9</sup>
- The index excluded expenses associated with separately billable supplies since these items are not paid for under the PFS. Our primary data source, the 2006 Physician Practice Information Survey, collected data on these costs enabling us to accurately remove them from the index.
- Ten new cost categories were included in order to disaggregate costs under the broader Office Expenses cost category.

As stated above, we last rebased and revised the MEI for the CY 2011 PFS rule to reflect a 2006 base year. Chart 1 and Table 2 provide comparisons of the growth rates of the 2006-based MEI (with prior to the productivity adjustment) to the CPI for Urban Wage Earners (CPI-U) for All Items, Excluding Food and Energy.

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<sup>9</sup> For more details see the CY 2010 PFS final rule with comment period (<http://www.edocket.access.gpo.gov/2010/pdf/2010-10814.pdf>; 74 FR 61961 through 61962).

**Chart 1 – Annual Growth in MEI, MEI Prior to Productivity Adjustment, and CPI-U All Items Less Food and Energy, 2000–2012**



1\ The CPI annual growth rates are aligned to the same period as the MEI updates; for example, the CY 2012 CPI growth reflects the annual growth in the CPI through June 2011.

2\The MEI updates using the 2006-based MEI structure and the 10-year moving average of Private Nonfarm Multifactor Productivity are only available for PFS Calendar Years 1999 through 2012.

Source: CMS/OACT

**Table 2 – Annual Growth Rates in 2006-based MEI, 2006-based MEI Prior to Productivity Adjustment, and CPI-U All Items Less Food and Energy, 2000 – 2012**

	<b>Medicare Economic Index</b>	<b>Medicare Economic Index Prior to Productivity Adjustment</b>	<b>CPI-U All Items Less Food and Energy</b>
CY 00	2.4	3.0	2.3
CY 01	2.4	3.2	2.2
CY 02	2.9	3.8	2.6
CY 03	2.4	3.5	2.6
CY 04	2.3	3.4	1.9
CY 05	1.8	3.1	1.4
CY 06	1.8	3.3	2.1
CY 07	1.6	3.2	2.2
CY 08	1.9	3.4	2.6
CY 09	1.6	3.1	2.3
CY 10	1.6	2.8	2.0
CY 11	0.6	1.6	1.4
CY 12	0.6	1.8	1.0
<b>Annual Average Growth</b>	1.8	3.0	2.0

Source: CMS/OACT

### **Cost Categories and Cost Category Weights**

The cost (or expense) categories in the index, along with their respective weights, are primarily derived from data collected in the 2006 American Medical Association Physician Practice Information Survey for self-employed physicians and selected self-employed non-medical doctor specialties.<sup>10</sup> This survey was conducted by the AMA; expense data collected were for 2006.<sup>11</sup> The AMA PPIS data were used to determine the expenditure weights in the MEI for all of the major cost categories, including Total Expenses, Physician Earnings, Physician Benefits, Employed Physician Payroll, Non-Physician Compensation, Office Expenses, Professional Liability Insurance, Medical Equipment, Medical Supplies, and Other Professional Expenses.

<sup>10</sup> Including optometrists, oral surgeons, podiatrists, and chiropractors consistent with the definition of the term “physician” in section 1861(r) of the Act.

<sup>11</sup> This was a one-time survey and it is unclear when or if these data will be collected at a future date. Prior to the 2006 MEI update, the cost shares were based on another AMA survey, the Socioeconomic Monitoring System (SMS) survey, that was periodically conducted by the AMA. However, 2001 was the last year in which data were collected in this survey.

The MEI cost categories for Non-Physician Compensation and Office Expenses were disaggregated into more detailed cost categories using multiple data sources. Those data sources are:

- 2002 Bureau of Economic Analysis (BEA) Benchmark Input-Output table (I/O)
- 2006 Bureau of the Census Current Population Survey (CPS)
- 2006 Bureau of Labor Statistics (BLS) Occupational Employment Survey (OES)
- 2006 BLS Employment Cost for Employee Compensation Survey (ECEC)
- 2006 Internal Revenue Service (IRS) Statistics of Income data (SOI)

### **Price Proxies**

For each detailed cost category, a price proxy is selected to approximate the price change associated with its components. Most of the price proxies are chosen from publicly available data sources, particularly those published by the Bureau of Labor Statistics, and are selected from one of the following five categories:

- Producer Price Indices (PPIs): PPIs measure the average change in prices received by domestic producers for their goods and services. These fixed-weight indexes are a measure of price change at the intermediate or final stage of production.
- Consumer Price Indices (CPIs): CPIs measure change in the prices of final goods and services bought by consumers. Like the PPIs, they are fixed-weight indexes.
- Average Hourly Earnings (AHEs): AHEs measure change in gross payrolls divided by total hours and are available both for all employees and for production and nonsupervisory workers for specific industries, as well as for the nonfarm business economy. They reflect shifts in employment mix and, thus, are representative of actual changes in hourly earnings for industries or for the nonfarm business economy.
- Employment Cost Indexes (ECIs) for Wages and Salaries: These ECIs measure the rate of change in employee wage rates per hour worked. These fixed-weight indexes are not affected by employment shifts among the aggregated industries or occupations and, thus, measure only the pure rate of change in wages by industry/occupation.
- ECIs for Employee Benefits: These ECIs measure the rate of change in employer costs of employee benefits, such as the employer's share of Social Security taxes, pension and other retirement plans, insurance benefits (life, health, disability, and accidental), and paid leave. Like ECIs for wages and salaries, the ECIs for employee benefits are not affected by employment shifts among the aggregated industries or occupations.

When selecting a price proxy for use in the MEI, the strengths and weaknesses of each proxy variable are evaluated using the following four criteria: relevance, reliability, timeliness of actual published data, and public availability.

The one exception to this rule is the CMS professional liability insurance (PLI) index, which is based on data collected and tracked by CMS. Each year, CMS solicits PLI premium data for physicians from a representative sample of commercial carriers. The professional liability price

proxy is intended to reflect the pure price change associated with malpractice premiums; thus, it does not include changes in the mix or level of liability coverage. This information is collected for every state by physician specialty and risk class and aggregated to compute a national total using counts of physicians by state and specialty as provided in the AMA publication, “Physician Characteristics and Distribution in the U.S.”

The latest estimates of the MEI increases, using the 2006-based index, are presented in Table 3, which includes the rate of change for each detailed cost category of the MEI.

**Table 3 - Annual Price Trends for MEI Components, 2000–2012**

Cost Category	Price Proxy	Weight	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
			'99Q2	'00Q2	'01Q2	'02Q2	'03Q2	'04Q2	'05Q2	'06Q2	'07Q2	'08Q2	'09Q2	'10Q2	'11Q2
MEI (Adjusted for Productivity)		100.000%	2.4	2.4	2.9	2.4	2.3	1.8	1.8	1.6	1.9	1.6	1.6	0.6	0.6
10-yr moving average BLS non-farm multifactor productivity		N/A	0.6	0.8	0.9	1.1	1.1	1.3	1.5	1.6	1.5	1.5	1.2	1.0	1.2
MEI (Prior to Productivity Adjustment)		100.000%	3.0	3.2	3.8	3.5	3.4	3.1	3.3	3.2	3.4	3.1	2.8	1.6	1.8
Physician Compensation		48.266%	3.6	3.8	4.1	3.3	3.2	2.5	2.8	3.3	3.9	3.8	3.4	2.5	2.3
Wages and Salaries	AHE Total Nonfarm Private for Production & Nonsupervisory Employees	43.880%	3.7	3.8	4.0	3.2	3.0	2.1	2.4	3.3	4.1	3.9	3.5	2.6	2.2
Benefits	ECI - Benefits - Private Industry Workers	4.386%	2.4	4.4	5.3	4.7	5.0	6.7	5.9	3.5	2.7	2.7	1.8	1.6	3.2
Practice Expenses		51.734%	2.4	2.7	3.4	3.7	3.5	3.8	3.9	3.1	2.8	2.5	2.2	0.7	1.4
Non-physician Compensation		19.153%	3.3	3.7	4.7	4.2	3.4	3.9	3.7	3.0	3.5	3.2	2.5	1.5	2.0
Non-physician Wages		13.752%	3.6	3.6	4.2	3.9	2.7	2.9	2.8	2.6	3.6	3.4	2.7	1.4	1.7
P&T Wages	ECI - Wages and Salaries - Professional and Technical (Private)	6.006%	3.6	3.3	4.4	3.8	2.4	3.2	3.2	2.9	4.0	3.5	2.7	1.2	1.7
Management	ECI - Wages and Salaries - Managers & Administrators (Private)	1.446%	4.0	4.6	3.8	4.1	3.6	3.4	2.1	1.9	3.3	3.4	2.4	1.2	1.9
Clerical	ECI - Wages and Salaries - Administrative Support including Clerical (Private)	4.466%	3.7	3.8	4.3	4.2	3.1	2.7	2.8	2.6	3.4	3.2	2.7	1.7	1.8
Services	ECI - Wages and Salaries - Service Occupations (Private)	1.834%	3.4	3.1	3.7	3.1	2.4	2.2	2.1	2.2	3.3	3.7	2.7	1.7	1.2
Non-physician Benefits	Composite Benefit Index	5.401%	2.4	4.2	6.0	5.1	5.4	6.7	6.1	4.0	3.4	2.9	2.1	1.6	2.9
Other Practice Expenses		26.308%	1.9	2.2	2.9	3.7	4.1	4.2	4.5	3.5	2.5	2.1	2.0	0.1	1.0
Professional Liability Insurance	CMS - Professional Liability Physician Premium Survey	4.295%	4.2	5.9	3.8	14.2	16.1	22.6	17.0	7.2	(0.1)	(2.7)	(3.6)	(2.9)	(1.1)
Medical Equipment	PPI - Medical Instruments and Equipment	1.978%	(0.5)	(1.0)	0.6	1.5	2.3	1.9	0.9	(0.0)	(0.3)	0.5	0.8	0.5	0.4
Office Expenses		20.035%	1.9	2.1	3.0	2.7	2.7	1.7	2.6	3.1	3.3	3.2	3.3	0.6	1.5
Utilities	CPI - Fuel and Other Utilities	1.266%	(1.6)	3.3	11.9	(1.8)	2.9	5.6	6.7	14.0	2.7	6.3	4.6	(3.1)	2.5
Chemicals	PPI - Other Basic Organic Chemical Manufacturing	0.723%	1.6	1.3	1.5	0.8	(0.1)	1.5	12.3	3.8	1.9	9.0	14.7	(2.6)	10.1
Paper	PPI - Converted Paper and Paperboard	0.657%	0.5	4.6	3.8	(0.4)	0.6	0.1	5.2	3.4	3.7	3.0	6.6	(0.2)	5.0
Rubber & Plastics	PPI - Rubber & Plastic Production	0.598%	(0.8)	1.3	2.8	(0.4)	1.6	2.0	5.6	8.1	3.0	2.8	5.7	(0.3)	5.2
Telephone	CPI - Telephone Services	1.501%	0.2	(1.0)	(1.0)	1.0	0.1	(2.6)	(2.1)	0.0	2.1	2.2	2.6	0.8	(0.7)
Postage	CPI - Postage	0.898%	1.5	1.5	1.6	3.0	10.5	-	-	2.7	3.1	3.8	3.9	4.7	2.6
All Other Services	ECI - Compensation - Service Occupations (Private)	3.582%	3.1	3.2	4.0	3.6	3.2	3.3	2.7	2.4	3.3	3.6	2.5	1.8	1.6
All Other Products	CPI - All Items Less Food and Energy	0.500%	2.3	2.2	2.6	2.6	1.9	1.4	2.1	2.2	2.6	2.3	2.0	1.4	1.0
Fixed Capital	CPI - Owner's Equivalent	8.957%	3.1	2.6	3.3	4.3	3.2	2.1	2.4	2.6	4.0	2.8	2.2	0.6	0.4
Moveable Capital	PPI - Machinery & Equipment	1.353%	(0.7)	(0.5)	0.0	(0.6)	(0.8)	(0.5)	1.0	1.3	2.2	0.5	2.4	0.1	0.4
Drugs and Supplies		1.760%	1.1	1.8	1.1	1.0	1.0	2.0	1.4	1.1	1.1	1.4	1.2	0.4	0.2
Medical supplies	Composite - PPI Surgical Appliances & CPI Medical Supplies	1.760%	1.1	1.8	1.1	1.0	1.0	2.0	1.4	1.1	1.1	1.4	1.2	0.4	0.2
Other Expenses		4.513%	2.3	2.2	2.6	2.6	1.9	1.4	2.1	2.2	2.6	2.3	2.0	1.4	1.0
All Other	CPI - All Items Less Food and Energy	4.513%	2.3	2.2	2.6	2.6	1.9	1.4	2.1	2.2	2.6	2.3	2.0	1.4	1.0

Source: CMS/OACT

## Productivity Adjustment

Originally, the rationale for the inclusion of an economy-wide productivity adjustment in the MEI was that the MEI included an economy-wide wage measure to proxy for price changes to physicians' incomes. Since wages, by definition, tend to reflect productivity improvements, adjusting for productivity growth in the MEI implicitly assumed that productivity growth for physicians equaled that of the average general wage earner. If physicians' productivity growth was greater than the rest of the economy, they kept these productivity gains as higher incomes. Absent this adjustment, productivity (in the form of the physician's own productivity in producing outputs and the productivity already reflected in the wage proxy used in the index) would be effectively double counted and the update would be biased upward.

Beginning in 2003, following a recommendation from a CMS/Medicare Payment Advisory Commission (Med PAC) co-sponsored expert advisory group, CMS changed the productivity adjustment in the formula to a 10-year moving average of private nonfarm business economy-wide multifactor productivity rather than the prior technique of applying a labor productivity adjustment to the labor portion of the MEI.

Finally, the physician payment system requires all factors that affect the payment update be reflected in the update formula. In this case, productivity is reflected in the MEI component of the physician fee schedule update. Once more, absent an adjustment for productivity, the system would be updating payments based only on the inputs used in providing services (input prices and volume and intensity of services) and would not reflect an expected increase in the efficiency with which those services could be provided.

In order to derive a stable measure that helps alleviate the influence of a peak (or a trough) of a business cycle, the productivity adjustment applied to the MEI is based on a 10-year moving average percent change in private nonfarm business multifactor productivity. Also, consistent with the statute, the productivity adjustment is based on the latest available historical private nonfarm business multifactor productivity data as measured and published by BLS.

As discussed in the two published articles regarding physician-specific productivity below, there is limited information available on physician-specific productivity:

- Fisher, C., "Multifactor Productivity in Physicians' Offices: An Exploratory Analysis," *HCFA Review* 29(2), pp. 15–32 (Winter 2007–2008). <http://www.cms.gov/Research-Statistics-Data-and-Systems/Research/HealthCareFinancingReview/Downloads/07-08Winterpg15.pdf>
- Newhouse, J.P., "Estimates of Physician Productivity: An Evaluation," *HCFA Review* 29(2), pp. 33–40 (Winter 2007–2008). <http://www.cms.gov/Research-Statistics-Data-and-Systems/Research/HealthCareFinancingReview/Downloads/07-08Winterpg33.pdf>

Using this research, CMS concluded at that time, as did the authors, that the use of a private, nonfarm business economy-wide MFP in the update formula specified in law was a reasonable choice. At the time of rebasing and revising the MEI in 2011, CMS determined the use of economy-wide MFP growth was still appropriate.

## Historical MEI Update Factors

The annual payment updates as determined by the SGR formula use available historical information at the time of publication of the final rule for any given year; thus, all MEI updates are based on historical data rather than a forecast. Typically, the historical data lag the update period by roughly six months. For example, the CY 2012 MEI update factor was mostly based on historical data through June 2011.<sup>12</sup> Table 4 below provides the MEI update factors that were used in determining the conversion factor from 2000 to 2012.

**Table 4 – MEI Update Factors as Published in the Physician Fee Schedule Regulations**

	<b>Medicare Economic Index Update Factors</b>
CY 00	2.4
CY 01	2.1
CY 02	2.6
CY 03	3.0
CY 04	2.9
CY 05	3.1
CY 06	2.8
CY 07	2.1
CY 08	1.8
CY 09	1.6
CY 10	1.2
CY 11	0.4
CY 12	0.6

The CY 11 and CY 12 MEI update factors were noticeably lower than in previous years. These lower updates are mainly attributable to the lower inflation associated with the physician's own time, professional liability insurance, and non-physician compensation.

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<sup>12</sup> The only exception was the 10-year multifactor productivity measure, which was based on data through December 2010.

## CHAPTER 1: INTRODUCTION

The Medicare Economic Index (MEI) measures price changes in the inputs (goods and services) required to operate a self-employed physician practice in the United States. These inputs are aggregated into two broad categories – the physician’s own time and his or her practice expenses. The Centers for Medicare & Medicaid Services (CMS), the agency that administers the Medicare program, uses the MEI in the annual update of the fees paid to physicians and other clinical providers who are entitled to bill for services provided to Medicare beneficiaries under Part B of Medicare. The Office of the Actuary (OACT), within CMS, has the overall responsibility of maintaining and updating the MEI.

### MEI History

As explained in the Overview section of this report, the MEI was required by § 224 of the 1972 amendments to the Social Security Act, which amended § 1843(b) (3). The index was first used to update physician fees in 1975. When the Physician Fee Schedule replaced the Customary-Prevailing-Reasonable method of setting fees in 1992, the updated mechanism continued to use the MEI as a major component. Consequently, the MEI has been used to update fees set by the Resource-Based Relative Value Scale, initially under the Medicare Volume Performance Standard system and subsequently under the Sustainable Growth Rate (SGR) system, which is currently in effect.<sup>13</sup>

Periodically, CMS seeks advice from external experts on the input composition of the MEI, the data used to estimate the MEI’s cost components, and the price proxies used in the index. In 2012, a Technical Advisory Panel (TAP) was assembled to provide such advice, including recommendations for technical improvements to the MEI.

### Technical Advisory Panel

The MEI Technical Advisory Panel Charter (see Appendix A) sets forth the following general responsibilities for the TAP:

“The Panel shall conduct a technical review of the Medicare Economic Index (MEI), including the inputs, input weights, price-measurement proxies, and productivity adjustment. The Panel will be asked to assess the relevance and accuracy of these inputs to current physician practices.”

The Charter further states:

“The Panel’s analysis and recommendations will be considered for future rulemaking to ensure that the MEI accurately and appropriately meets its intended statutory purpose.”

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<sup>13</sup> For 2003 through 2012, Congress legislatively overrode the negative updates that the SGR formula, which includes the MEI, otherwise would have required.

And finally:

“Following the technical review meeting(s), the Panel shall issue a report that summarizes its recommendations for the Medicare Economic Index.”

This report presents the Panel’s analyses, findings, and recommendations in response to the Charter’s guidance. The Panel’s deliberations were made in accordance with the Federal Advisory Committee Act (FACA). This means that the meetings were conducted in public and stakeholders were given the opportunity to share their evidence and views with panel members. Transcripts of the public meetings are available at <https://www.cms.gov/Regulations-and-Guidance/Guidance/FACA/MEITAP.html>.

The Panel is required to present its report to the Secretary of the Department of Health and Human Services (DHHS) no later than 11 months after the establishment of the Panel.

The CMS Administrator, having been delegated the authority to do so from the Secretary of HHS, selected the panelists to ensure a broad range of experience relevant to the MEI. The following five individuals comprised the 2012 MEI TAP:

- Ernst Berndt, Ph.D. (Chair), Professor of Applied Economics, Massachusetts Institute of Technology, Sloan School of Management
- Robert A. Berenson, M.D., Institute Fellow, Urban Institute
- Zachary Y. Dyckman, Ph.D., President, Dyckman & Associates
- Kurt D. Gillis, Ph.D., Senior Economist, American Medical Association
- Kathryn L. Kobe, M.A., Director, Price, Wage, and Productivity Analysis, Economic Consulting Services

Biographical sketches of the TAP members are included in Appendix B. The Panel conducted their meetings on May 21, June 25, and July 11, 2012.

## **Finding**

In their early discussions of the form of the MEI, there was general consensus among the panelists for the continued use of the existing index formulation, leading to the following finding:

**Finding 1.1: The Panel concludes that the continued construction, implementation, and monitoring of the MEI as a fixed-weight index is appropriate, given the lack of evidence of significant substitution across input cost categories over time, as well as limitations associated with existing data sources on physician office expenses.<sup>14</sup>**

The Panel believes the MEI is an important payment tool in the Medicare program and deserves ongoing attention to ensure it is accurate and cognizant of changes in the ways that medicine is practiced in the United States. One enduring issue is whether the index should be a fixed-weight,

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<sup>14</sup> Cost weights, based on 2006 expense data (collected in 2007 and 2008), are revised periodically.

Laspeyres-type index. The Panel concluded that there is not sufficient evidence that the proportions of costs the index's inputs represent vary enough over short periods of time, nor was there a frequent, consistent data source available, to warrant or support a change to an alternative type of index, such as a chain-weight index. Nevertheless, as will be discussed in subsequent chapters, the Panel also believes the data underlying the construction of the MEI should be updated and improved and be responsive to potential changes in medical practice patterns.

### **Organization of Report**

The remainder of this report is organized according to major topics of the MEI Panel's discussion. Chapter 2 focuses on data requirements and options to support the MEI in the future. Chapters 3 through 5 correspond to the four elements of the MEI: cost components and weights (Chapter 3), price proxies for the cost components (Chapter 4), and the productivity adjustment (Chapter 5). Each of these chapters has findings and recommendations with rationale statements explaining the basis for the Panel's decisions. The report concludes with a brief chapter (Chapter 6) stating the views of the Panel on the importance of the MEI to keep up with changes in the ways that medicine is practiced in the United States.

## CHAPTER 2: DATA SOURCES

The data requirements to estimate the MEI are substantial. First, it is necessary to divide overall expenses into the two broad categories of the physician's own time and practice expenses. Then, both broad categories need to be further subdivided into cost components and their respective weights. Third, data are needed to approximate the annual change in the prices of the MEI components. Finally, an appropriate source is needed to estimate multifactor productivity for the productivity adjustment. This chapter addresses basic strategies for obtaining data to support the MEI. Individual cost components, weights, input price measures, and the productivity adjustment are addressed in subsequent chapters.

### Physician Practice Information Survey and Alternative Data Sources

The MEI has long relied on data collected by the American Medical Association (AMA) for the initial division of the MEI into the physician's own time and various practice expenses. Those data provide the basis for the index's weights. That practice continues today as, most recently, OACT incorporated data collected in the AMA's Physician Practice Information Survey (PPIS).<sup>15</sup> The PPIS was a stratified survey of non-federal patient care providers conducted in 2007–2008, yielding data for 2006. The Panel's discussion of the PPIS centered on the following issues:

- Representativeness of the survey data across geographic areas and specialties.<sup>16</sup>
- The appropriateness of limiting the data used in the MEI to self-employed physicians.
- The vintage of the data in view of changes in physician practice patterns over time and shifts in expense composition, such as increased expenditures on information technology.

The Panel discussed alternative data sources that could replace or augment the PPIS for updating the MEI weights. One potential source is the Medical Group Management Association (MGMA), which conducts annual surveys of medical practice revenues and expenses. However, the MGMA surveys only group practices (at least three physicians) and the sample size is small. The Panel therefore questioned the degree to which MGMA data could be relied upon to represent revenues and expenses of all self-employed physicians. At the request of the Panel, OACT obtained 2007–2010 MGMA data and conducted numerous comparisons with the PPIS data. Exhibit 2-1 compares the cost weights derived from both sets of data using their single-specialty means. Comparisons of multispecialty means were not informative given differences between each sample's respective structure and weighting schemes.

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<sup>15</sup> The PPIS is also used in estimating the components of the Geographic Practice Cost Indices (GPCIs) and Relative Value Units (RVUs), each of which is used to determine payments for procedures.

<sup>16</sup> The Panel discussed the fact that there could be a significant difference in the distribution of practice expenses across different specialties because some specialties are much more capital intensive than others and some require substantially more support personnel than others. However, the purpose of the MEI is to reflect the national average cost distribution for physicians' offices and its associated price changes. Therefore, it is important that the index incorporates an accurate distribution across specialties and geographic areas.

**Exhibit 2-1: Comparison of Cost Shares Based on 2006 AMA PPIS and 2007 MGMA Cost Survey Data**

<b>Cost Category</b>	<b>PPIS Self-employed (percent)</b>	<b>MGMA Single Specialty Mean (percent)</b>	<b>PPIS - MGMA Single Specialty (differences)</b>
Physician Compensation	48.3%	48.7%	-0.4%
Wages and Salaries	43.9%	42.4%	1.5%
Benefits	4.4%	6.3%	-1.9%
Practice Expense	51.7%	51.3%	0.4%
Non-Physician Compensation	19.2%	27.9%	-8.7%
Non-Physician Wages	13.8%	23.1%	-9.3%
Non-Physician Benefits	5.4%	4.8%	0.6%
Office Expenses (Less All Other Services)	16.5%	10.2%	6.2%
Fixed Capital	9.0%	5.3%	3.7%
Moveable Capital	1.4%	1.8%	-0.4%
Other Office Expenses	6.1%	3.2%	2.9%
Professional Liability Insurance	4.3%	2.1%	2.2%
Medical Equipment	2.0%	1.2%	0.8%
Prescription Drugs	0.0%	0.0%	0.0%
Medical supplies	1.8%	1.4%	0.3%
Other Expenses including All Other Services	8.1%	8.4%	-0.3%

Source: CMS/OACT using 2006 AMA PPIS data and 2007 MGMA cost survey data.

The categories with the largest differences in the cost shares were the Non-Physician Compensation, Office Expenses (particularly Fixed Capital), and Professional Liability Insurance. Most of the differences in the cost shares were likely driven by the differences in survey characteristics of each sample. Specifically, the differences likely reflect variability in the units surveyed – practice type, specialty representativeness, and geographic representativeness.

The MGMA cost survey data represented costs for group practices while the AMA PPIS data represented costs for self-employed physicians or those able to report expenses at the individual level. It was noted that about 50 to 60 percent of the MGMA practices surveyed were owned by a hospital or an integrated delivery system, while about 30–40 percent were physician-owned practices.

Although the MGMA survey had a higher response rate from primary care physicians, it did not contain information from a wide range of specialties. Given this drawback, it was not clear whether the MGMA data could be reweighted to be representative of all specialties. In contrast, the AMA PPIS data were more inclusive of a wide range of specialties and were weighted accordingly to reflect the distribution of physician specialties at the national level.

Finally, the MGMA data were not geographically representative, with some regions having little or no representation in the data. Exhibit 2-2 compares the MGMA sample distribution of respondents by HHS regions with the universe counts of physicians by HHS region. In general, HHS regions 2 and 9 are notably underrepresented in the MGMA survey.

**Exhibit 2-2: Distribution of MGMA Sample Compared to Physician Universe by HHS Region**

<b>Region</b>	<b>States</b>	<b>MGMA %</b>	<b>Universe %</b>
1	CT, ME, MA, NH, RI, VT	3%	7%
2	NJ, NY, Puerto Rico, Virgin Isl.	1%	14%
3	DE, DC, MD, PA, VA, WV	17%	11%
4	AL, FL, GA, KY, MS, NC, SC, TN	32%	18%
5	IL, IN, MI, MN, OH, WI	9%	15%
6	AR, LA, NM, OK, TX	11%	10%
7	IA, KS, MO, NE	9%	4%
8	CO, MT, ND, SD, UT, WY	10%	3%
9	AZ, CA, HI, NV, Islands	2%	15%
10	AK, ID, OR, WA	6%	4%
	<b>Total</b>	<b>100%</b>	<b>100%</b>

Source: AMA 2007 physician counts by state and 2010 MGMA cost survey sample sizes by HHS region.

The Panel also considered the Census Bureau Service Annual Survey (SAS) as an alternative regular data source. However, SAS does not include data on physician net income, nor does it distinguish between physician and non-physician compensation. It is difficult to compare SAS data to PPIS data because the two surveys’ methods of categorizing expenses were, in many cases, inconsistent. The Panel was unaware of any other existing, publicly available data source that could be used to develop the MEI cost category weights.

**Recommendations**

The Panel discussed the language found in the aforementioned 1972 Senate Finance Committee Report referencing that the index would be based “initially” on data for self-employed physicians. The panelists reviewed anecdotal evidence that indicates fewer physicians are opening their own private practices while more are seeking employment in larger practices, or in hospitals. Although the Panel did not explicitly recommend against the continued use of self-employed physician data as the basis of the MEI, they did express considerable concern both for the representativeness of existing data and for the potential lack of data to support the MEI in the future, leading to the following recommendations:

**Recommendation 2.1: The Panel recommends the CMS Office of the Actuary research whether using self-employed physician data for the MEI cost weights continues to be the most appropriate approach. In particular, the Panel notes that in recent years there is a continuing trend toward larger, physician-owned practices as well as movement from physician-**

owned practices toward hospital-owned practices. However, it is unclear whether adequate data are available to reflect this shift in the MEI or whether the cost structure for employed physicians would be materially different from that for self-employed physicians. Accordingly, consideration of the availability and viability of specialty and geographically representative expense data for physicians in larger practices and physicians employed by hospitals and other business entities would be an important aspect of this research.

**Recommendation 2.2:** The Panel is concerned about the absence of a reliable, ongoing source of data for maintaining the MEI. Accordingly, the Panel recommends that OACT scan for and research additional data sources that may allow for more frequent updates to the MEI's cost categories and their respective weights. Such data sources could include (but are not limited to) the following:

- The Medical Group Management Association's Cost Survey
- The Bureau of the Census Services Annual Survey (including the possibility of adding questions to the survey)
- Pending feasibility, a CMS survey, possibly conducted jointly with the American Medical Association, that focuses exclusively on physician expenses as they relate to the MEI. The Panel notes that the lead time to conceive, develop, fund, and administer such a survey would likely be considerable.
- Alternatively, and again pending feasibility, CMS could obtain more robust data by means of detailed formal cost reports based on a methodologically sound sample of physician practices. It would be appropriate to reimburse selected practices for the expenses they would incur in preparing the cost reports. This approach would address many of the traditional concerns with voluntary surveys and thereby improve the basis for establishing cost weights for the MEI. Whether the degree of improvement would warrant the cost associated with the process would be an important consideration.

OACT faces the dual problem of being uncertain how representative the PPIS data were of practice patterns for the year the data were collected and whether the degree of representativeness is diminishing over time. Therefore, the Panel believes that OACT needs to research this issue to determine whether changes in practice patterns are being accompanied by changes in cost structures in medical practices. Such research could have a substantial influence on strategies for collecting data to support the MEI in the future.

The Panel is well aware that arranging for a new, ongoing source of data for the MEI is a time-consuming and expensive proposition. Adapting existing ongoing surveys to meet the needs of the MEI is an option, as is planning and executing a new data collection strategy. The latter could include a broad-based survey similar in design to the PPIS, or a targeted effort that would obtain auditable data from a smaller sample of physician practices. OACT will need to conduct an analysis that will determine how it can obtain ongoing data support for the MEI, making maximum use of scarce resources.

## CHAPTER 3: MEI COST COMPONENTS AND WEIGHTS

The Panel was charged to review the MEI cost components and weights, based primarily on the 2006 PPIS data, and to make recommendations for updating and improving them. A general discussion led to the following finding:

**Finding 3.1: The Panel finds that the current categorization of input costs in the MEI is reasonable, but recommends certain refinements and monitoring as noted below.**

The Panel believes the form of the MEI as a fixed-weight index that separates inputs into those associated with physician compensation and those associated with practice expenses is appropriate. However, the Panel has several concerns about specific MEI components. These concerns are expressed in the recommendations presented below in this chapter.

The Panel's discussion initially focused on physician compensation, followed by practice expenses. The cost categories are delineated below in Exhibit 3-1.

**Exhibit 3-1: Current MEI Cost Categories and Weights**

<b>Cost Categories</b>	<b>Cost Weights 2006=100</b>
2006-based Medicare Economic Index	100.000%
Physician Compensation	48.266%
Wages and Salaries	43.880%
Benefits	4.386%
Practice Expenses	51.734%
Non-physician Compensation	19.153%
Non-physician Wages	13.752%
P&T	6.006%
Management	1.446%
Clerical	4.466%
Services	1.834%
Non-physician Benefits	5.401%
Other Practice Expenses	26.308%
Office Expenses	20.035%
Utilities	1.266%
Chemicals	0.723%
Paper	0.657%
Rubber & Plastics	0.598%
Telephone	1.501%
Postage	0.898%
All Other Services	3.582%
All Other Products	0.500%
Fixed Capital	8.957%
Moveable Capital	1.353%
Professional Liability Insurance	4.295%
Medical Equipment	1.978%
Medical Materials and Supplies	1.760%
Other Professional Expenses	4.513%

Source: CMS/OACT

**Physician Compensation**

Physician compensation comprises approximately 48.3 percent of the MEI, based on 2006 PPIS data. This share has been trending downward over the last decade; it was 54.5 percent in the 1996-based MEI and 52.5 percent in the 2000-based MEI. The Panel discussed the following issues concerning physician compensation:

- Classification of physicians' wages and benefits
- Treatment of salaried (or employed) physicians

- Treatment of non-physician clinical staff who can independently bill for services under Medicare Part B

The Panel detected potential inconsistencies between the definitions of the Physician Wages and Salaries and Physician Benefits costs in the MEI and the definitions employed in the Bureau of Labor Statistics' Employment Cost Index (ECI), the price index used in the MEI to measure price inflation of physicians' benefit costs. These potential inconsistencies led to the following recommendation:

**Recommendation 3.1: The Panel recommends that OACT revise the Physician Wages and Salaries and Physician Benefit cost weights in the 2006-based MEI. OACT should determine the cost weights for wages and benefits to ensure they are consistent with the definitions in the Employment Cost Index. Specifically, OACT should consider estimating the proportion of the Physician Wages and Salaries cost weight associated with physicians' retirement benefits, and reclassifying that percentage into the Physician Benefits cost weight in order to be consistent with the costs included in the ECI for Wages and Salaries and the ECI for Benefits price proxies. Evaluation of the PPIS data determined that retirement benefits were included in the Physician Wages and Salaries cost weight while the associated price change is currently reflected in the ECI for Benefits.**

This recommendation is made in part to ensure that the category definitions used in the MEI are consistent with the definitions used in the price proxies that estimate price changes in MEI components (price proxies are discussed in Chapter 4). The PPIS survey form asked the following question regarding physicians' benefits:

“Provide the dollar value of your 2006 benefits (health insurance, dental, life insurance, etc.) received from your medical practice.”

Using this information, OACT estimated that in the 2006-based MEI, physicians' benefits accounted for 8.1 percent of physician compensation, which was lower than the share used in the 2000-based MEI and lower than the share used for non-physician compensation. The Panel believed this share was low in part because the PPIS may have not captured retirement expenses as a benefit. However, the price proxy used for Physician Benefits, the ECI for Benefits for Total Private Nonfarm Business, clearly includes retirement expenses:

“Benefits covered by the ECI survey are: Paid leave (vacations, holidays, sick leave, and other paid leave); supplemental pay (premium pay for work in addition to the regular work schedule, such as overtime and work on weekends and holidays; shift differentials; and nonproduction bonuses such as lump-sum payments provided in lieu of wage increases); life insurance; short-term and long-term disability benefits; health benefits; retirement and savings benefits (defined benefit and defined contribution plans); legally required benefits (Social Security, Medicare, Federal and State unemployment insurance,

and workers' compensation); and other benefits (severance pay and supplemental unemployment insurance)."<sup>17</sup>

Therefore, in order for the MEI to ensure that the cost categories match the price proxy definitions and that the share of benefits of compensation is reasonable, the Panel concluded that OACT should adjust the cost category weights accordingly.

The Panel notes there is a growing trend of non-physician clinicians, such as nurse practitioners and physician assistants, providing services to Medicare beneficiaries. In some cases, these practitioners provide services "incident to" a physician's service, and the physician bills for the non-physician's services. In other instances, the non-physician clinician bills independently. The scope of services that these non-physician providers can furnish is generally governed by state law. The Panel was uncertain whether the current classification of non-physician clinician expenses in the MEI is consistent with how these providers are paid under the fee schedule, leading to the following recommendation:

**Recommendation 3.2: The Panel recommends that OACT evaluate the appropriate classification of the expenses associated with non-physician clinical staff who can bill Medicare independently. Among the factors OACT should consider are:**

- **Any definition of "physicians" that exists under current law in relation to the Medicare physician fee schedule and whether these definitions might limit OACT's ability to make changes;**
- **Whether time for non-physician staff who can bill independently is included among the inputs to the practice expense Relative Value Unit methodology under the Medicare physician fee schedule (in other words, is the treatment of this input under the practice expense RVU methodology consistent with that under the MEI?);**
- **Whether there is any evidence these staff do not spend the majority of their time providing "physician services" as defined by Medicare; and**
- **The extent to which those who can bill independently actually do so.**

The Panel believes OACT should address whether, and to what extent, costs associated with non-physician clinical providers who can bill independently should be classified as physicians' own time (and thus, captured in Physician Wages and Salaries), or as non-physician employees of the practice (whereby their costs would be included in Non-Physician Compensation as is currently the case in the MEI). Using the 2006 PPIS data, OACT staff concluded these costs account for 2.5 percent of the MEI, and inclusion of all expenses associated with non-physician clinicians in the physician's own time would increase that cost category weight from 48.3 percent to 50.9 percent if no other changes were made to the MEI.

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<sup>17</sup> <http://www.bls.gov/ncs/ect/sp/ecbl0014.pdf>

## Practice Expenses

In the MEI, practice expenses are divided into detailed cost categories, such as non-physician labor costs, rent, medical equipment, and other expenses. The Panel addressed numerous issues related to how the categories are defined and reported. These discussions led to two recommendations on non-labor practice expenses:

**Recommendation 3.3: The Panel recommends that OACT create a new cost category entitled Professional Services that should consist of the All Other Services cost category (and its respective weight) and the Other Professional Expenses cost category (and its respective weight). The Panel further recommends that this category be disaggregated into appropriate occupational categories consistent with the relevant price proxies.**

Implementing this recommendation would have the effect of pulling out professional services (such as contract billing, legal, and accounting services) from the All Other Services cost weight using a data source such as the Bureau of Economic Analysis Benchmark Input-Output Tables and combining them with the Other Professional Expenses cost weight, which is estimated from the 2006 PPIS. Making such a change would ensure that similar types of expenses are reported in a single cost category in the MEI instead of being dispersed among multiple categories, which can lead to less transparency and clarity. Additionally, using appropriate price proxies (discussed in Chapter 4), the Panel believes this modification would more accurately estimate changes in prices of the different types of purchased professional services.

One issue in maintaining and updating the MEI is the degree of granularity needed in both the calculation and reporting of the MEI. The Panel discussed that if a cost category's contribution to the overall MEI is below a certain amount (for instance, 1 percent), it might be prudent to collapse some of these categories with other categories for presentation purposes. The Panel's discussion of this issue led to the following recommendation:

**Recommendation 3.4: The Panel recommends that OACT report more aggregated costs under the Office Expenses cost category. In particular, reported costs associated with Rubber and Plastics, Chemicals, All Other Products, and Paper should be combined. However, the Panel believes that OACT should maintain separately the underlying details and calculations associated with these aggregated costs when applying price proxies and calculating the overall MEI and its subcomponents.**

To a large degree, the issue of reporting is one of "optics" – not wanting to deluge stakeholders with information on MEI components that are so detailed that the categories themselves may not be clear to users. For instance, OACT reported the public has raised questions about whether physicians actually purchase "chemicals" or "rubber and plastics." Clearly, the types of products covered by broad classifications such as these are being purchased, as evidence of reported expenses for them in the corresponding input-output tables. However, the products with which the public would be familiar are more specific than the broad category names, potentially leading to some confusion about what these terms represent. Nevertheless, the Panel saw no reason to

sacrifice precision in the underlying calculations of the MEI, so that collapsing of categories for reporting purposes need not be accompanied with collapsing for purposes of calculations.

A final issue the Panel addressed in its discussion of the MEI cost components was concern with practice expenses for prescription drugs, leading to the following finding:

**Finding 3.2: The Panel finds the current methodology of excluding all drug expenses, including non-separately billable drug expenses, from the calculation of the cost weights in the MEI is appropriate. The finding to continue to exclude non-separately billable drugs is based primarily on their relatively negligible costs.**

Separately billable drugs, such as oncology drugs, constitute a significant portion of some practices' expenses and revenues. Although drug administration costs are paid under the physician fee schedule, payment for the drugs themselves is governed under a methodology that is separate from the physician fee schedule, so it would be inappropriate to include their costs in the MEI. OACT staff research documented that when separately billable drug costs are excluded, the remaining drug costs reported in the PPIS data, which would reflect drugs purchased by physicians but not paid for under the fee schedule or as separately billable, are very low and not sufficiently significant to include them explicitly in the MEI.

## CHAPTER 4: PROXIES FOR THE MEI COST COMPONENTS

Once the MEI cost categories are established, each cost category is matched to an appropriate price or wage variable, referred to as a “price proxy.” The expenditure weight for each cost category is multiplied by the level of its respective price proxy where the sum of these products (that is, the expenditure weights multiplied by their price levels) for all cost categories yields the composite index level of the MEI in a given period. The term “price proxy” indicates the price changes are based on data series that approximate the actual price changes associated with the cost components within a given market. That is, the price proxy will reflect an appropriate price update associated with the types of inputs in each cost category, but it may not precisely measure the price change of those inputs. Examples of this include: (i) situations where somewhat specific guidance was issued from Congress (such as the use of a broader market when proxying physician’s earnings), or (ii) where a detailed price proxy for these inputs may not be available (such as for the specific types of medical equipment purchased by physicians). Each price proxy is evaluated for relevance, reliability, timeliness of actual published data, and public availability.

A general discussion led to the following finding:

**Finding 4.1: The Panel finds the current price proxies used in the MEI are reasonable, but recommends certain refinements and monitoring as noted below.**

Similar to its conclusion regarding the cost components and weights, the Panel believes the price proxies used in the MEI are appropriate. However, the Panel has several concerns about specific MEI price proxies. These concerns are expressed in the recommendations presented below in this chapter.

As was the case with the cost components and weights, the Panel’s discussion initially focused on physician compensation and then on practice expenses. The price proxies and their sources are delineated below in Exhibit 4-1.

**Exhibit 4-1: Current MEI Cost Categories, Price Proxies, and Cost Weights**

<b>Cost Categories</b>	<b>Price Proxies</b>	<b>Cost Weights 2006=100</b>
<b>2006-based MEI</b>		100.000
Physician Compensation		48.266
Wages and Salaries	AHE Total Nonfarm Private for Production and Nonsupervisory Employees	43.880
Benefits	ECI - Benefits Total Nonfarm Private	4.386
Practice Expenses		51.734
Non-Physician Compensation		19.153
Non-Physician Wages		13.752
Professional and Technical Wages	ECI - Wages and Salaries: Private Professional and Technical	6.006
Managerial Wages	ECI - Wages and Salaries: Private Managerial	1.446
Clerical Wages	ECI - Wages and Salaries: Private Clerical	4.466
Services Wages	ECI - Wages and Salaries: Private Service	1.834
Non-Physician Benefits	ECI - Benefits: Private Blend	5.401
Other Practice Expenses		26.308
Office Expenses		20.035
Utilities	CPI U for Fuel and Utilities	1.266
Chemicals	PPI for Other Basic Organic Chemical Manufacturing	0.723
Paper	PPI for Converted Paper	0.657
Rubber and Plastics	PPI for Rubber and Plastics	0.598
Telephone	CPI U for Telephone Services	1.501
Postage	CPI U for Postage	0.898
All Other Services	ECI Compensation: Services Occupations	3.582
All Other Products	CPI U for All Items Less Food and Energy	0.500
Fixed Capital	CPI U for Owner's Equivalent Rent	8.957
Moveable Capital	PPI for Machinery and Equipment	1.353
Professional Liability Insurance	CMS - Professional Liability Physician Premiums	4.295
Medical Equipment	PPI Medical Instruments and Equipment	1.978
Medical Materials and Supplies	PPI Surgical Appliances and Supplies/ CPI U Medical Supplies	1.760
Other Professional Expenses	CPI U for All Items Less Food and Energy	4.513

1\ AHE - Average Hourly Earnings (<http://www.bls.gov/ces/>)

2\ ECI - Employment Cost Index (<http://www.bls.gov/ncs/ect/>)

3\ CPI U - Consumer Price Index (<http://www.bls.gov/cpi/>)

4\ PPI - Producer Price Index (<http://www.bls.gov/ppi/>)

Source: CMS/OACT

## Physician Compensation

Since its inception, the MEI has utilized the Bureau of Labor Statistics (BLS) data series on Average Hourly Earnings (AHE) for Production and Non-Supervisory Employees as the price proxy for Physician Wages and Salaries. AHEs are calculated by dividing gross payrolls for wages and salaries by total hours. The AHE proxy is representative of actual changes in hourly earnings for the nonfarm business economy, including shifts in employment mix. An alternative to an AHE concept is the BLS Employment Cost Index concept, which measures the rate of change in employee wage rates per hour worked. ECIs measure the pure rate of change in wages by industry and/or occupation and are not affected by shifts in employment mix across industries and occupations.

**Recommendation 4.1: The Panel recommends that OACT revise the price proxy associated with Physician Wages and Salaries from an Average Hourly Earnings concept to an Employment Cost Index concept.**

The selection of the AHE series was originally thought to be consistent with the 1972 Senate Finance Committee guidance, which stated, “Initially, the Secretary would be expected to base the proposed economic indexes on presently available information on changes in expenses of practice and general earnings levels...”<sup>18</sup> The Panel believes, however, that a price proxy that is not influenced by changes in employment mix is more appropriate for the MEI and still consistent with Congressional guidance.

BLS publishes more than 100 ECIs for Wages and Salaries. Having decided to recommend the ECI series as the price proxy concept for the MEI, the Panel then faced the task of selecting a specific ECI. There were two logical choices:

- ECI, Wages and Salaries, All Workers, Private Industry (ECI for All Workers)
- ECI, Wages and Salaries, Professional and Related, Private Industry (ECI for Professional and Related Workers)

The Panel’s discussion of these alternatives, which included an assessment of congruity with the 1972 Congressional guidance, led to the following recommendation:

**Recommendation 4.2: The Panel recommends that CMS revise the price proxy associated with changes in Physician Wages and Salaries to use the Employment Cost Index for Wages and Salaries, Professional and Related, Private Industry. The Panel believes this change would maintain consistency with the guidance provided in the 1972 Senate Finance Committee report titled “Social Security Amendments of 1972,” which stated that the index should reflect changes in practice expenses and “general earnings.” In the event this change would be determined not to meet the legal requirement that the index reflect “general earnings,” the**

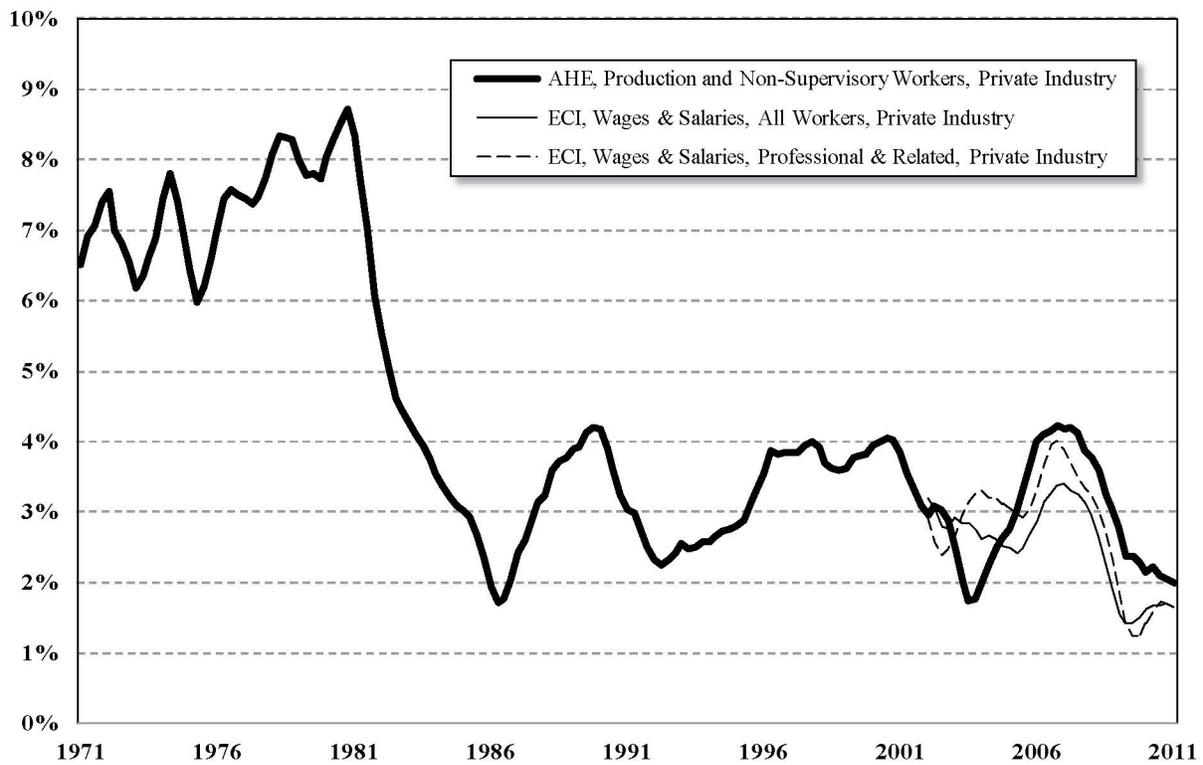
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<sup>18</sup> U.S. Senate, Committee on Finance, “Social Security Amendments of 1972,” Report of the Committee on Finance United States Senate to Accompany H.R. 1, September 26, 1972, p. 191.

**Panel recommends replacing the current proxy with the Employment Cost Index for Wages and Salaries, All Workers, Private Industry.**

The Panel compared time series of the current AHE-based proxy to the two ECI-based alternatives, as shown in Exhibit 4-2 below. The Panel did not believe the differences in the series were sufficiently large to influence its decision on the selection of a price proxy. Thus, the Panel felt the deciding factors in determining an appropriate wage and salary proxy should be an index that reflects a more highly skilled occupational mix than all workers and is not heavily influenced by trends in actual physician wages that could create endogeneity or circularity concerns. The Panel was informed that the proportion of total employees who are physicians is approximately 0.6 percent in the ECI for All Workers and approximately 4.0 percent in the ECI for Professional and Related Workers.<sup>19</sup> Therefore, the Panel felt either of the ECI alternatives would be an appropriate proxy. Additionally, the Panel concluded the ECI for Professional and Related Workers would appear to better reflect more highly skilled occupations and thus would be a more appropriate proxy for the MEI.

**Exhibit 4-2: Four Quarter, Percent-Change Moving Average for AHE, ECI All Workers, and ECI Professional and Related Workers**



Source: Bureau of Labor Statistics. Average hourly earnings data published by Current Employment Statistics and ECI data published by the National Compensation Survey.

<sup>19</sup> The ECI uses a broad definition of physicians that includes chiropractors, dentists, optometrists, and podiatrists as well as doctors of medicine.

The second component of physician compensation is benefits, consisting of health insurance, pension contributions, and other non-wage forms of compensation. Since the Panel made a recommendation to change the Wages and Salary proxy to an ECI, the Panel believed it was important to also consider the price proxy that CMS employs for the physicians' benefits component of the MEI. The Panel believes that for consistency reasons, the price proxy selected should reflect the same characteristics in terms of worker skill mix and industry representation as the Wages and Salaries price proxy. These discussions led to the following recommendation:

**Recommendation 4.3: The Panel recommends that any change in the price proxy for Physician Wages and Salaries be accompanied by the selection and incorporation of a Physician Benefits price proxy that is consistent with the Physician Wages and Salaries price proxy.**

The Panel did not recommend a specific physician benefits proxy but leaves it to CMS to select a proxy most consistent with the Physician Wages and Salaries price proxy used in the MEI.

### Non-Physician Compensation

In the current MEI, non-physician compensation is subdivided into four wage classifications and one benefits classification, as shown in Exhibit 4-3 below. The wage categories and weights are based on the Current Population Survey (CPS) occupational employment counts and on mean salary data for Offices of Physicians from BLS Occupational Employment Statistics (OES), which are classified using BLS Standard Occupational Classification (SOC) codes and the Census Bureau's North American Industrial Classification System (NAICS).

**Exhibit 4-3: Current MEI Non-Physician Cost Categories, Price Proxies, and Cost Weights**

**Current MEI Non-Physician Cost Weights**

Cost Category	Price Proxy	Cost Weight
Non-Physician Compensation		19.2%
Non-Physician Wages		13.8%
P&T	ECI - Wages and Salaries - Professional and Technical (Private)	6.0%
Management	ECI - Wages and Salaries - Managers and Administrators (Private)	1.4%
Clerical	ECI - Wages and Salaries - Admin Support including Clerical (Private)	4.5%
Services	ECI - Wages and Salaries - Service Occupations (Private)	1.8%
Non-Physician Benefits	Composite Benefit Index	5.4%

Source: 2006-based MEI cost weights, CMS/OACT.

The Panel considered two alternatives to the current system of classifying non-physician wages and salaries. The first option would divide the Professional and Technical and Services employment categories into health-related and non-health related, adding two employment

categories. This option would rely on a similar methodology as currently employed to estimate the cost categories; it would use CPS and OES data to derive the cost weights for the two additional health-related categories. The second option would create a new category of health-related workers and maintain the original categories for subdividing non-health-related workers. This option would rely on data directly from the PPIS to determine the health-related wage cost weight. The non-health related wage cost weight would be determined using the CPS and OES data. The cost categories, potential price proxies, and differences in cost weights are indicated in Exhibits 4-4 and 4-5 below.

**Exhibit 4-4: Option 1 for Non-Physician Wage Cost Weights and Proxies in the MEI**

**Option 1 - Alternative MEI Non-Physician Cost Weights**

<b>Cost Category</b>	<b>Price Proxy</b>	<b>Cost Weight</b>
Non-Physician Compensation		19.2%
Non-Physician Wages		13.8%
Health-related P&T	ECI - Wages and Salaries – Hospital	5.2%
P&T (Non-Health Related)	ECI - Wages and Salaries - Professional and Technical (Private)	0.8%
Management	ECI - Wages and Salaries - Managers and Administrators (Private)	1.4%
Clerical	ECI - Wages and Salaries - Admin Support including Clerical (Private)	4.5%
Health-related Services	ECI - Wages and Salaries - Healthcare and Social Assistance	1.6%
Services (Non-Health Related)	ECI - Wages and Salaries - Service Occupations (Private)	0.2%
Non-Physician Benefits	Composite Benefit Index	5.4%

Source: Cost shares derived based on CPS employment counts for NAICS 6211 Offices of Physicians and BLS OES mean hourly wages by occupation for NAICS 6211 Offices of Physicians.

**Exhibit 4-5: Option 2 for Non-Physician Wage Cost Weight and Proxies in the MEI**

**Option 2 - Alternative MEI Non-Physician Cost Weights**

<b>Cost Category</b>	<b>Price Proxy</b>	<b>Cost Weight</b>
Non-Physician Compensation		19.2%
Non-Physician Wages		13.8%
Non-Health Wages		7.2%
P&T	ECI - Wages and Salaries - Professional and Technical (Private)	0.8%
Management	ECI - Wages and Salaries - Managers and Administrators (Private)	1.5%
Clerical	ECI - Wages and Salaries - Admin Support including Clerical (Private)	4.7%
Services	ECI - Wages and Salaries - Service Occupations (Private)	0.2%
Health-Related Wages	ECI - Wages and Salaries - Healthcare and Social Assistance	6.5%
Non-Physician Benefits	Composite Benefit Index	5.4%

Source: Cost shares derived based on 2006 AMA PPIS data, CPS employment counts, and BLS OES mean hourly wages.

The Panel’s extensive discussion of the two options led to the following detailed recommendation:

**Recommendation 4.4:** The Panel recommends the disaggregation of the Non-Physician Compensation costs to include an additional category for health-related workers. This disaggregation would allow for health-related workers to be separated from non-health-related workers. CMS should rely directly on PPIS data to estimate the health-related non-physician compensation cost weights. The non-health, non-physician wages should be further disaggregated based on the Current Population Survey and Occupational Employment Statistics data. The new health-related cost category should be proxied by the ECI, Wages and Salaries, Hospital (NAICS 622), which has an occupational mix that is reasonably close to that in physician offices. The Non-Physician Benefit category should be proxied by a composite benefit index reflecting the same relative occupation weights as the non-physician wages.

The rationale for this recommendation stems from a concern that trends in health-related worker compensation in physician offices may be different at times from trends in non-health worker compensation. By selecting the second option discussed above, the Panel has chosen to identify one explicit category for health-related personnel in physician offices. The Panel felt the PPIS survey data, which were used directly for other major cost categories in the MEI, were a reasonable source for determining the weight associated with these health-related personnel. In addition, the Panel requested to see a comparison of the share of health-related non-physician occupations across several health-related industries.

Exhibit 4-6 compares the relative occupational employment shares for the two healthcare occupational categories (SOC 29-0000 and SOC 31-0000<sup>20</sup>) for NAICS 6211 Offices of Physicians, NAICS 62 Healthcare and Social Assistance, NAICS 622 Hospitals, and NAICS 623 Nursing and Residential Care Facilities. These four industries were chosen because these are the health-related ECIs currently published by BLS. An ECI for Offices of Physicians is not available.

**Exhibit 4-6: Healthcare Occupational Employment Shares, Selected Industries**

OES Category SOC	OES Category Occupational Category Title	NAICS Category 6211	NAICS Category 62	NAICS Category 622	NAICS Category 623
29-0000	Healthcare practitioner and technical occupations	41%	32%	51%	16%
31-0000	Healthcare support occupations	14%	19%	13%	36%

Source: BLS OES employment counts for selected SOC occupational categories.

The Panel decided that the health-related occupational mix for NAICS 6211 Offices of Physicians was most similar to the health-related occupational mix for NAICS 622 Hospitals, allowing for the identification of an appropriate wage proxy for the new category (delineated in the recommendation above). The Panel leaves to CMS the task of creating a composite benefit index that mirrors the composition of workers in physician offices.

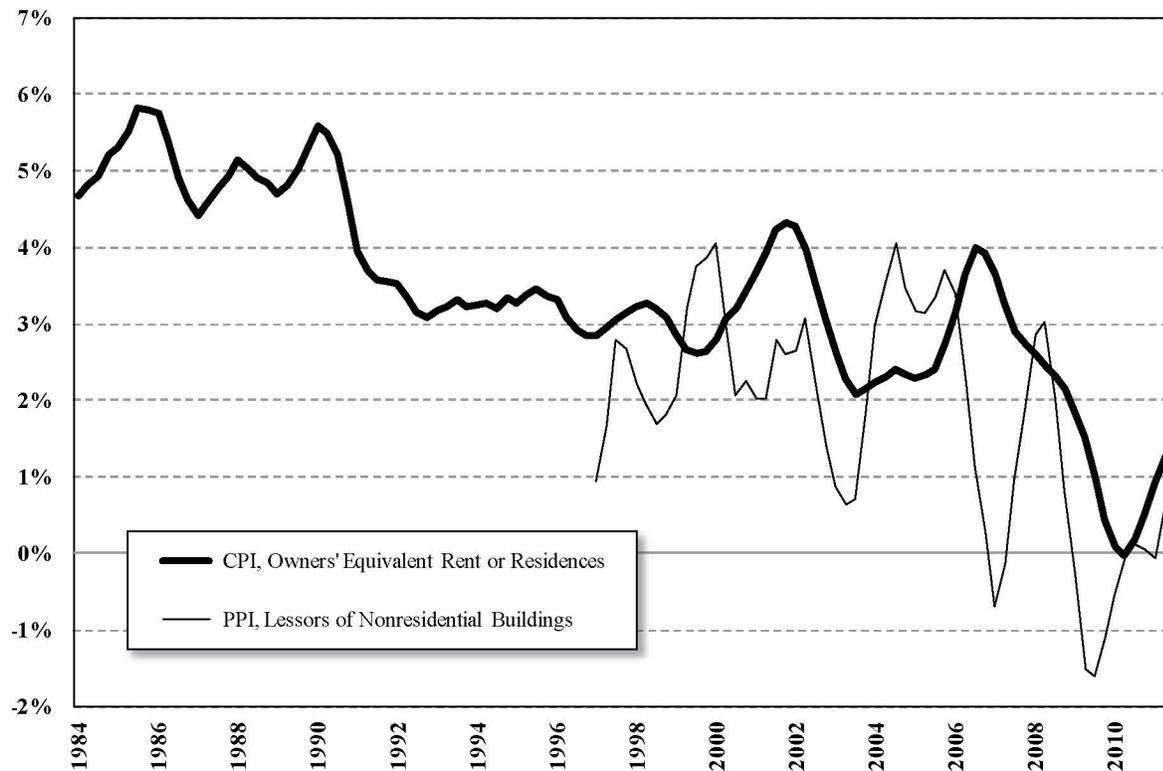
**Fixed Capital Expenses**

The cost category that consumes the largest share of Office Expenses at approximately 9 percent, Fixed Capital, was the topic of considerable discussion. The current Fixed Capital cost weight includes expenses for building leases, mortgage interest, and depreciation on medical buildings. The current proxy for Fixed Capital is the Consumer Price Index for All Urban Consumers (CPI-U) for Owners’ Equivalent Rent of Residences. An alternative is the Producer Price Index (PPI) for Lessors of Nonresidential Buildings, which may be a more accurate proxy for the fixed capital expenses incurred by physician office practices. The Panel compared time series of the current proxy to the alternative, as shown in Exhibit 4-7 below.

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<sup>20</sup> For a detailed list of occupations included within these SOC categories see: <http://www.bls.gov/SOC/>

**Exhibit 4-7: Four Quarter, Percent-Change Moving Averages for CPI-U Owners' Equivalent Rent of Residencies and PPI Lessors of Nonresidential Buildings**



Source: Bureau of Labor Statistics, Consumer Price Index and Producer Price Index.

The Panel's discussion of this issue led to the following recommendation:

**Recommendation 4.5:** The Panel recommends using the Producer Price Index for Lessors of Nonresidential Buildings (NAICS 53112) for the MEI Fixed Capital cost category as it represents the types of fixed capital expenses most likely faced by physicians. The Panel noted the volatility in the index, which is greater than the Consumer Price Index for Owners' Equivalent Rent of Residences. This relative volatility merits ongoing monitoring and evaluation of alternatives.

The Panel's recommendation is responsive to the general belief that trends in fixed capital expenses in physician offices should be more congruent with trends in business office space costs than in residential costs. The Panel also acknowledged that physician offices might be found in different types of locations, including shopping centers. The recommended PPI price proxy would include price changes for leasing both professional and other office buildings as well as shopping centers and retail stores. The volatility of the index is a source of concern and the basis of the Panel's advice that the recommended proxy and alternatives should continue to be evaluated.

## **Moveable Capital Expenses**

Moveable Capital is a smaller percentage of the MEI than Fixed Capital (1.4 percent versus 9.0 percent), but the degree to which the price proxy, the PPI for Machinery and Equipment, accurately represents movable capital expenditures in physician offices is a concern. The Panel's examination of the apparent difference between physician offices and the broad industrial base of the proxy led to the following finding:

**Finding 4.2: The Panel finds the current price proxy used for Moveable Capital expenses, specifically the Producer Price Index for Machinery and Equipment, may not be representative of the types of movable capital purchases made in the production of physicians' services.**

This finding led to the following recommendation:

**Recommendation 4.6: The Panel recommends CMS conduct research into and identify a more appropriate price proxy for Moveable Capital expenses. In particular, the Panel believes it is important that a proxy reflect price changes in the types of non-medical equipment purchased in the production of physicians' services, as well as the price changes associated with Information and Communication Technology expenses (including both hardware and software).**

The Panel believes it should be possible for CMS to find a more appropriate price proxy for Moveable Capital expenses in physician offices than the PPI for Machinery and Equipment proxy currently in use, although the Panel was unable to recommend a specific alternative. The Panel is especially concerned that the alternative proxy would be able to capture trends in information and communication technology purchases in physician offices, which are expected to increase in response to incentives placed on Medicare providers by the American Recovery and Reinvestment Act of 2009 and the Patient Protection and Affordable Care Act of 2010. The Panel also notes that using 2006 data for the cost weights may not capture the IT-related equipment expenses incurred in physician's offices given these more recent incentives.

## **Professional Services Expenses**

In Chapter 3, the Panel recommended the creation of a new cost category, Professional Services, to capture the types of professional services (such as contract billing, legal, and accounting) purchased by physician practices. The Panel recognizes the new category would need to be accompanied by a new price proxy, as indicated in the following recommendation:

**Recommendation 4.7: The Panel recommends price changes associated with the Professional Services category be proxied by an appropriate blend of Employment Cost Indexes that reflect the types of professional services purchased by physician offices.**

There are several data sources that could be used to further decompose the Professional Services category into the types of professional services purchased, and various price proxies that would adequately reflect the rates of change associated with these various purchases. The Panel

considered the use of both ECIs and PPIs to proxy the price changes associated with professional services and ultimately decided to recommend the use of the ECIs (partly because of an incomplete array of PPIs that could appropriately proxy these services). The Panel believes it will be important for the MEI to accurately reflect a distribution of professional services, but leaves to CMS the task of identifying the appropriate ECIs to use and how to calculate weighted averages to arrive at an appropriate blend.

### **Professional Liability Insurance**

Unlike the other price proxies based on data from BLS and other public sources, the proxy for Professional Liability Insurance (PLI) is based on data collected directly by CMS from a sample of commercial insurance carriers. Premium information for a fixed level of coverage (\$1 million per occurrence and a \$3 million annual limit) is requested for every state by physician specialty and risk class. State-level, specialty-specific data are aggregated to compute a nationally weighted average using AMA counts of physicians by state and specialty and each insurer's market share by state. CMS indicated the carriers included in their sample account for a varying proportion of the premiums written in most states, but that for those states that have high physician concentrations the share is typically at least 25 percent.

The Panel discussed alternative data sources for the PLI price proxy, including information available from BLS and through state insurance commissioners, and arrived at the following finding:

**Finding 4.3: The Panel finds the CMS-constructed professional liability insurance (PLI) price index used to proxy changes in professional liability insurance premiums in the MEI represents the best currently available method for its intended purpose. The Panel also believes the pricing patterns of commercial carriers, as measured by the CMS PLI index, are influenced by the same driving forces as those observable in policies underwritten by physician-owned insurance entities; thus, the Panel believes the current index appropriately reflects the price changes in premiums throughout the industry.**

The Panel's finding is based on the conclusion that the alternative PLI proxies are not superior to the one currently in place. For example, while data maintained by state insurance commissioners are more comprehensive, accessing this data source would result in much less timely data than the CMS data collection process permits. Moreover, the Panel was not concerned that the data from commercial insurers are not inclusive of physician-owned insurance entities. The Panel saw no reason to believe premium trends would be materially different for the two types of insurers in that both would need to respond to the same market forces affecting premium growth.

## CHAPTER 5: PRODUCTIVITY ADJUSTMENT

The fourth element of the MEI (along with cost categories, cost category weights, and price proxies) is an economy-wide productivity adjustment. If the 10-year moving average of economy-wide productivity change is positive in any year, as it usually is, the productivity adjustment reduces the effect of increases in input prices in the MEI. A productivity adjustment is included in the MEI to ensure the index approximates an output price index, such as the Consumer Price Index or the GDP deflator. An output price index reflects the increases in input prices that to some extent are offset by gains in productivity. The input price increases within the MEI are reflected in the price proxies, such as changes in wages and benefits. Wages increase, in part, due to the ability of workers to increase the amount of output per unit of input.

Absent a productivity adjustment in the MEI, physicians would be receiving increased payments resulting both from their ability to increase their individual outputs and from the productivity gains already reflected in the wage proxies used in the index. The productivity adjustment used in the MEI ensures the productivity gains reflected in increased outputs are not double counted, or paid for twice. Currently, the productivity adjustment in the MEI is based on changes in economy-wide productivity based on the rationale that the price proxy for physician income reflects changes in economy-wide wages. Implicitly, this assumes physicians can achieve the same level of productivity as the average general wage earner.

Beginning in 2003, following a recommendation made by an expert advisory group co-sponsored by CMS and the Medicare Payment Advisory Commission (MedPAC), CMS changed the adjustment to be a 10-year moving average of Private Nonfarm Business Economy-wide Multifactor Productivity (MFP). Prior to this change, the adjustment was based on the 10-year moving average change in Labor Productivity and applied only to the labor portion of the MEI. A 10-year moving average is used to alleviate the effects of peaks and troughs occurring during the course of a business cycle. The adjustment was expanded to explicitly account for all factors of production rather than just labor, since the fee schedule payments are for both labor and non-labor elements in physicians' practices.

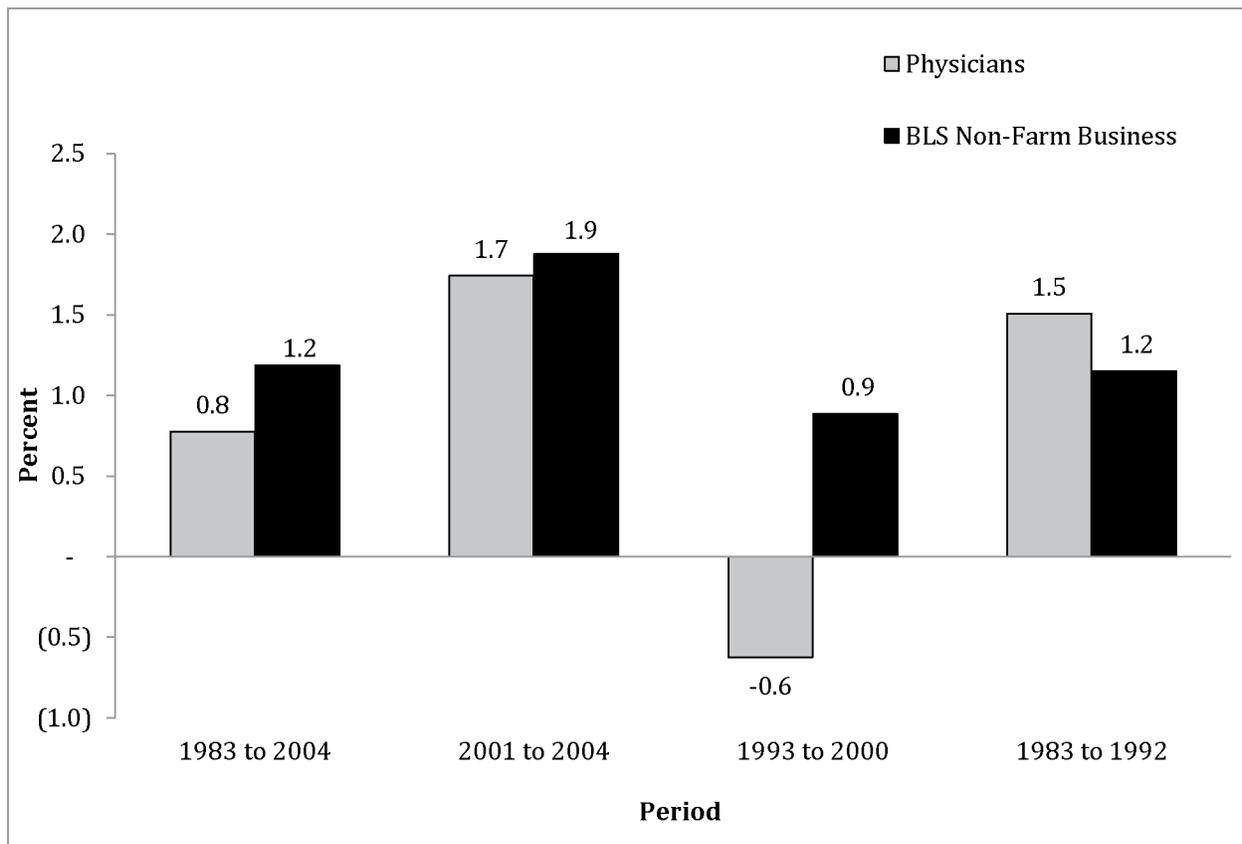
The Panel discussed the rationale for the MEI productivity adjustment and arrived at the following finding:

**Finding 5.1: The Panel reviewed the basis for the current economy-wide multifactor productivity adjustment (Private Nonfarm Business Multifactor Productivity) in the MEI and finds such an adjustment continues to be appropriate. This adjustment prevents “double counting” of the effects of productivity improvements, which would otherwise be reflected in both (i) the increase in compensation and other input price proxies underlying the MEI, and (ii) the growth in the number of physician services performed per unit of input resources, which results from advances in productivity by individual physician practices.**

The Panel also discussed at length the extent to which Private Nonfarm Business Multifactor Productivity is the appropriate productivity adjustment to the MEI. Specifically, the Panel considered recent trends in physician office multifactor productivity. CMS presented estimates

of physician office productivity published in the *Health Care Financing Review* (Winter 2007–2008) by Charles Fisher. Fisher constructed physician MFP for 1983–2004 using a variation of the productivity methodology developed by the U.S. Bureau of Labor Statistics for other service industries over this same period. Fisher used two alternative measures and found both yielded positive gains in physician office MFP over the study period. Over the entire 1983–2004 period, these increases tended to lie slightly below MFP for the general economy (Private Nonfarm Business Sector). However, between 1983 and 1992, and from 2001 to 2004, the growth in physician MFP was similar to or above that of the private nonfarm business sector. Exhibit 5-1 presents the Fisher physician office MFP results from 1983 to 2004 by selected time period.

**Exhibit 5-1: Comparison of Physician Office MFP and Economy-Wide MFP for 1983–2004**

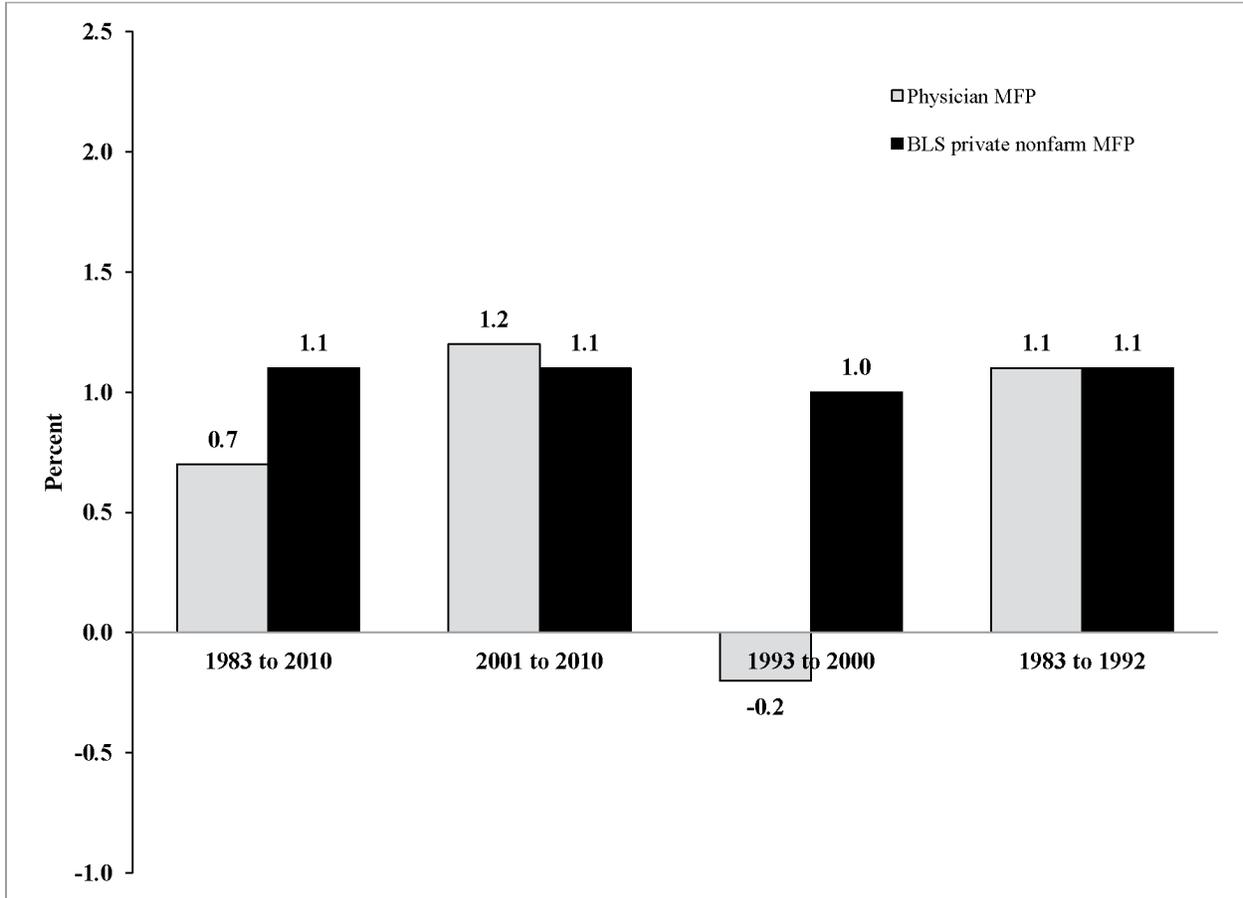


Source: Fisher, C., *Health Care Financing Review* (Winter 2007–2008).

CMS also presented to the Panel updated estimates of physician office MFP using Fisher’s general methodology, but reflecting data through 2010.<sup>21</sup> Exhibit 5-2 provides a comparison of the physician office MFP from 1983 to 2010 with the Private Nonfarm Business Multifactor Productivity, by selected time periods.

<sup>21</sup> Minor changes were made to the methodology to ensure consistency with the methods used by BLS, and assumptions needed to be made regarding some of the detailed data sources since not all data was available through 2010.

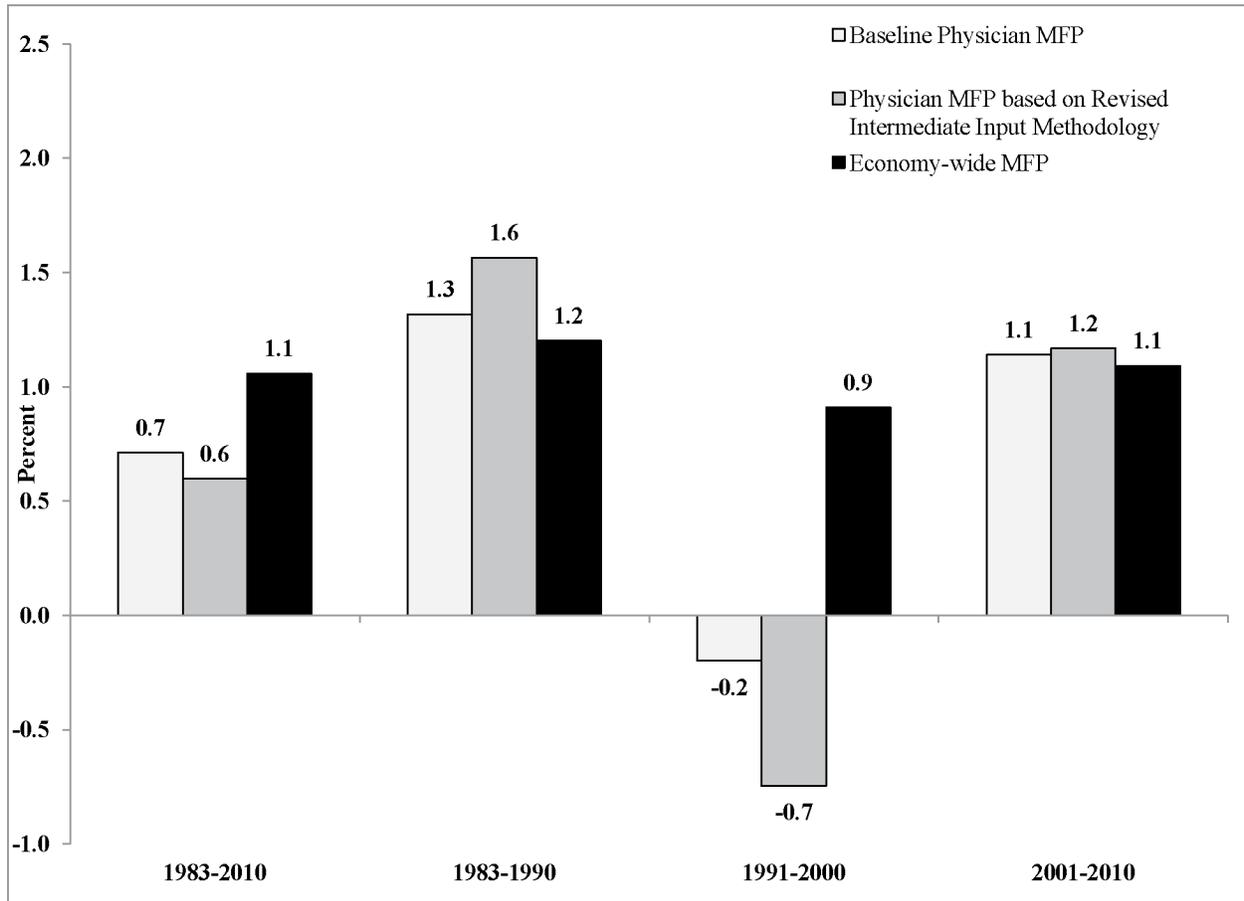
**Exhibit 5-2: Comparison of Physician Office MFP and Economy-Wide MFP for Selected Periods**



Source: CMS/OACT staff calculations, based on Fisher methodology.

The Panel requested CMS conduct a sensitivity analysis of physician office MFP. Specifically, they asked CMS to explore alternative methods and data sources for calculating the contribution of intermediate inputs. Results of the sensitivity analysis are shown in Exhibit 5-3 for different time periods. While alternative formulations typically produced only minor differences, the Panel did note the dramatic difference for the physician measures from each other and compared to the economy-wide MFP for the 1991–2000 time period. However, this period was considered to be atypical because of the mostly one-time effect of the rapid spread of tightly managed care. As a result, the Panel felt that the 2001–2010 period was not only more recent, but also more typical and representative of long-term trends. During this latter period, both physician measures and the economy-wide measure tracked very closely.

**Exhibit 5-3: Comparison of Alternative Physician Office MFP Measures with Economy-wide MFP, for Selected Periods**

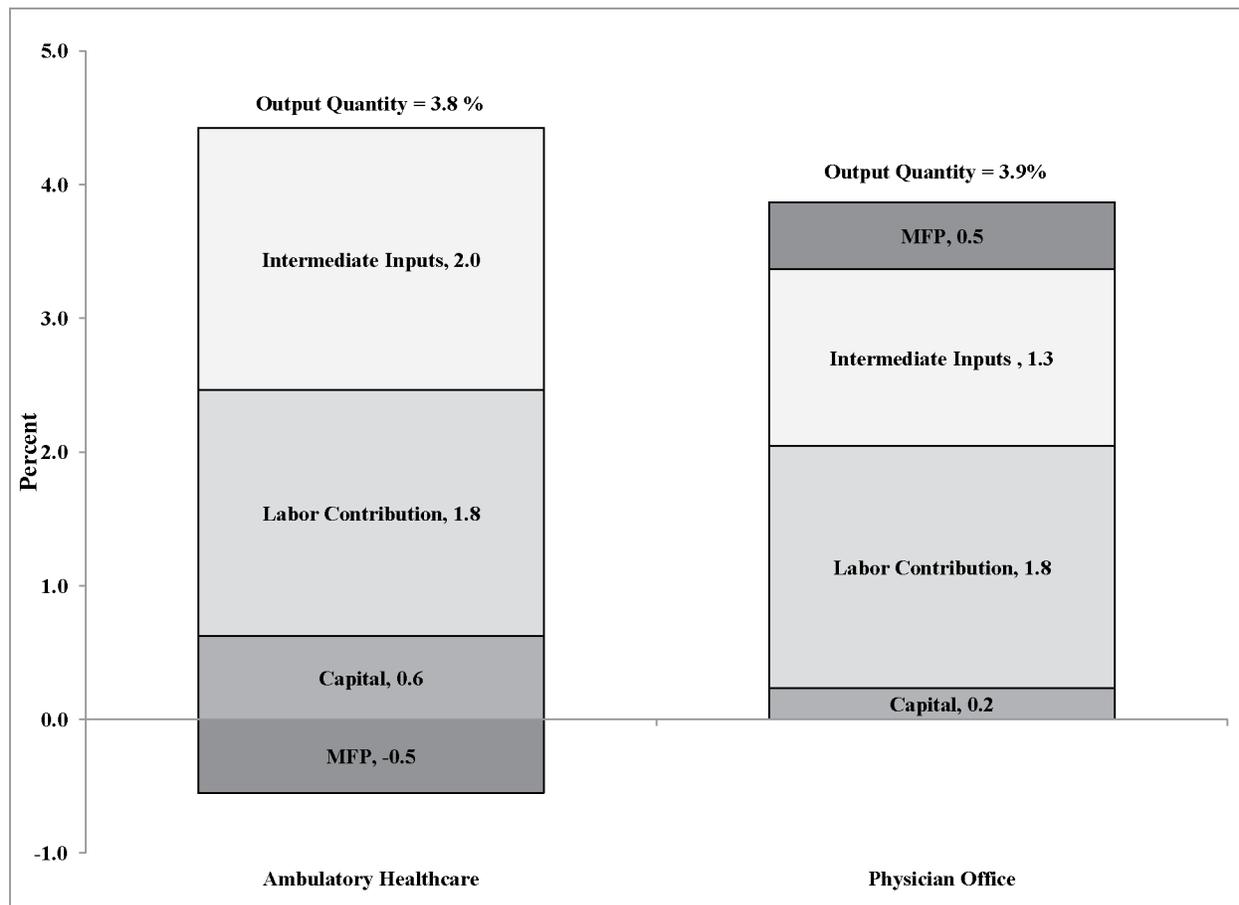


Source: CMS/OACT staff calculations, based on Fisher methodology

In addition to the sensitivity analysis, the Panel also requested CMS provide a comparison of the physician office MFP using the Fisher methodology and the BLS MFP for Ambulatory Healthcare Services (AHC), of which physician offices account for about 50 percent of this sector's output.

The Fisher MFP methodology is similar to the BLS MFP methodology with a few notable exceptions. First, the Fisher methodology calculates labor inputs separately for physicians and non-physicians. Second, the Fisher methodology does not estimate inputs separately for energy, materials, and purchased business services, but rather for aggregates of these intermediate inputs. Third, the two measures use different methodologies for weighting inputs. The trends in the two indexes' estimates of contributions to multifactor productivity are shown in Exhibit 5-4. Over the 1988–2009 period, the AHC and physician MFP output quantities grew at average annual rates of 3.9 and 3.8 percent, respectively. However, the AHC methodology produced a negative productivity growth over the period while the Physician Office methodology produced a positive productivity gain.

**Exhibit 5-4: Contributions of AHC MFP and Physician Office MFP over 1988–2009**



Source: CMS/OACT staff calculations, based on Fisher methodology of Physician Office MFP and CMS/OACT staff calculations based on Bureau of Labor Statistics published data on Ambulatory Healthcare MFP and its underlying components.

In addition, the Panel discussed the appropriateness of the economy-wide MFP measure in regards to maintaining consistent accounting principles with the use of an economy-wide wage proxy for physician income. The Panel discussed extensively that the accounting principle is difficult to maintain precisely since the MEI is neither a pure economy-wide measure nor a pure physician-specific measure; that is, the index has physician-specific cost weights, but reflects changes in economy-wide prices.

Nevertheless, the Panel believes that, conceptually, the economy-wide MFP measure is consistent with the use of economy-wide compensation growth such that the following identity can be preserved:

$$\text{Input Price Growth} - \text{MFP Productivity Gains} = \text{Output Price Growth}$$

In the case of the MEI, the rates of change in the input prices associated with the MEI mostly reflect changes in economy-wide wage measures (though weighted by physician-specific cost weights); using an economy-wide MFP measure ensures that the output price growth that the

index produces would also approximate economy-wide rates of increase (weighted by physician-specific cost weights).

The Panel also agreed that, given that the index is a hybrid of physician-specific weighting but economy-wide price proxies, as long as the economy-wide MFP measure continues to be a good approximation for physician-specific MFP, then it should be used by CMS. The Panel agreed that if there comes a time when the two MFP measures diverge for a prolonged period of time, then the use of the economy-wide MFP should be reevaluated.

Having reviewed the evidence on alternative physician productivity measures and their relationship with the economy-wide MFP measure, the Panel arrived at the following finding:

**Finding 5.2: The Panel finds the measures of growth in physician-specific productivity are of interest for the purpose of comparing the structure of price increases for physician services versus other sectors of the economy. The Panel does not recommend using a physician-specific measure but does believe that continued monitoring is appropriate. Use of physician-specific productivity growth to adjust economy-wide compensation growth in the MEI could introduce inconsistencies in the calculation of the MEI that could distort the results. The Panel concludes it is appropriate to continue to require that the accounting identity between input price growth, output price growth, and the productivity adjustment be maintained (as is approximated by the current version of the index).**

The Panel was reassured that the most recent trend in physician productivity growth tracked closely with economy-wide productivity growth. It would be a source of concern if continued monitoring revealed new trends more similar to the 1990–2000 period.

## CHAPTER 6: CONCLUSION

The Panel generally approves of the structure of the MEI and the methodology used to calculate it. The components of the MEI discussed by the Panel — cost categories and weights, price proxies, and productivity adjustment — are appropriate elements of a fixed-weight index for gauging inflation in the inputs of running a medical practice over time. However, given the lack of availability of relatively current data on physician practice costs, the Panel has some concerns about the continued ability of the MEI to reflect changes in the future cost structure of running a physician's practice. In particular, careful monitoring is needed to ensure that the elements of the MEI keep up with changes in the ways in which medicine is organized and practiced in the United States.

In order for the MEI to be kept up-to-date with respect to such changes in physician practices, CMS must come to some decision about how to most reasonably track the cost structure of this industry over time so as to have new weights at reasonable time intervals. If one observes and identifies changes in the cost structure, then the other issues (appropriate proxies and productivity adjustments) can, if necessary, be changed within the general methodological framework that currently exists. However, if no vehicle is available for identifying and assessing changes in the cost structure, then it becomes very difficult to decide what changes are necessary in the other aspects of the index.

Thus, making improvements to the MEI that reflect changes in the evolving cost structure of medical practice will require CMS to conduct analyses to determine how to obtain the most benefit from available scarce resources. Such analyses may indicate a need for CMS to develop new data sources for estimating the MEI in the future.

## **APPENDIX A: CHARTER: MEDICARE ECONOMIC INDEX TECHNICAL ADVISORY PANEL**

### **Authority**

The Medicare Economic Index Technical Advisory Panel is established by the Secretary of the Department of Health and Human Services under 42 U.S.C. § 217a and is governed by the provisions of the Federal Advisory Committee Act, P.L. 92-463 (Oct. 6, 1972), as amended, 5 U.S.C. App.

### **Objective and Scope of Activities**

The Panel shall conduct a technical review of the Medicare Economic Index (MEI), including the inputs, input weights, price-measurement proxies, and productivity adjustment. The Panel will be asked to assess the relevance and accuracy of these inputs to current physician practices. The Panel's analysis and recommendations will be considered for future rule making to ensure that the MEI accurately and appropriately meets its intended statutory purpose. The panel will not consider issues such as replacing the price index with a cost index, or other issues that lie outside the limits of the Centers for Medicare & Medicaid Services' statutory authority, such as replacing the Sustainable Growth Rate (SGR) formula with the MEI.

Following the technical review meeting(s), the Panel shall issue a report that summarizes its recommendations for the Medicare Economic Index.

### **Description of Duties**

The Centers for Medicare & Medicaid Services shall establish the Panel by September 2011. The purpose of the Panel shall be to:

- (1) Conduct a review of the MEI inputs and categories.
- (2) Conduct a review of the MEI input and category weights.
- (3) Conduct a review of the MEI price-measurement proxies.
- (4) Conduct a review of the MEI productivity adjustment.
- (5) Not later than 11 months after establishment of the Panel, issue a report summarizing the recommendations based on the reviews described in subparagraph (1), (2), (3) and (4) above.

The Panel will not consider issues such as replacing the price index with a cost index, or other issues that lie outside the limits of the Centers for Medicare & Medicaid Services' statutory authority, such as replacing the SGR formula with the MEI.

### **Agency or Official to Whom the Panel Reports**

The Panel provides advice to the Secretary of the Department of Health and Human Services (DHHS) and to the Administrator of the Centers for Medicare & Medicaid Services.

## **Support**

Coordination, management, and operational services shall be provided by the Centers for Medicare & Medicaid Services.

## **Estimated Annual Operating Costs and Staff Years**

The estimated annual operating cost in fiscal year (FY) 2011, including contracts and compensation and travel expenses for members, is \$212,436. The estimated annual FY 2011 full-time equivalent for Federal Government staff is 0.6 FTEs at an estimated annual cost of \$63,832.

## **Designated Federal Officer**

Centers for Medicare & Medicaid Services will select a fulltime or permanent part-time Federal employee to serve as the Designated Federal Officer (DFO) to attend each Panel meeting and ensure that all procedures are within applicable statutory and regulatory directives. The DFO will approve and prepare all meeting agendas, call all of the Panel and subcommittee meetings, adjourn any meeting when the DFO determines adjournment to be in the public interest, and chair meetings when directed to do so by the official to whom the Panel reports. The DFO or his/her designee shall be present at all meetings of the full committee and subcommittees.

## **Estimated Number and Frequency of Meetings**

Meetings shall be held up to four times over the life of the Panel. Meetings shall be open to the public, except as determined otherwise by the Secretary or other official to whom the authority has been delegated in accordance with the Government in the Sunshine Act (5 U.S.C. 552b(c)). Adequate advance notice of all meetings shall be published in the Federal Register, as required by applicable laws and Departmental regulations, stating reasonably accessible and convenient locations and times.

## **Duration**

12 months from the date this charter is signed.

## **Termination**

The Panel shall terminate 30 days after the date of the issuance of the report.

## **Membership and Designation**

The Panel shall consist of not more than seven members, including the chair(s). The Secretary of DHHS or the Secretary of DHHS' designee shall appoint the Panel members. The Secretary of DHHS or the Secretary of DHHS' designee shall select the Panel chair(s) from the appointed Panel members.

The Panel may be composed of, but is not necessarily limited to, representatives of other government agencies (such as the Bureau of Labor Statistics and the Bureau of Economic

Analysis), members of the Medicare Payment Advisory Commission, researchers, and other independent experts.

**Subcommittees**

Subcommittees composed of members and nonmembers of the Panel may be established with the approval of the Secretary or her designee(s). The subcommittees must report back to the Panel and do not provide advice or work products directly to the DHHS or to the Center for Medicare & Medicaid Services. The Panel shall notify the DHHS Committee Management Officer upon establishment of each standing subcommittee and provide information on the subcommittee name, membership, function, and estimated frequency of meetings.

**Recordkeeping**

The records of the Panel, established subcommittees, or other subgroups of the Panel shall be managed in accordance with General Records Schedule 26, Item 2 or other approved agency records disposition schedule. These records shall be available for public inspection and copying, subject to the Freedom of Information Act, 5 U.S.C. 552.

Filing Date

9/28/2011

Approved:

9/29/2011

\_\_\_\_\_  
Date

/s/

\_\_\_\_\_  
Secretary

## **APPENDIX B: TAP MEMBER BIOGRAPHICAL SKETCHES**

### **Ernst R. Berndt, Ph.D.**

Dr. Berndt is a Professor of Applied Economics at the Massachusetts Institute of Technology's Sloan School of Management. Between 1998 and 2010, he served as the Director of the National Bureau of Economic Research Program on Technological Progress and Productivity Measurement. Dr. Berndt is a nationally recognized expert on price index methodology and application and has served on many advisory panels related to price index issues, particularly those concerning medical-care indexes.

### **Robert A. Berenson, M.D.**

Dr. Berenson is a board-certified internist who practiced for over 20 years. He is currently an Institute Fellow at the Urban Institute and served as Vice Chairman of the Medicare Payment Advisory Commission. From 1998 through 2000, he was in charge of Medicare payment policy and private health plan contracting in the Centers for Medicare & Medicaid Services. He has authored many articles and books on Medicare prospective payment systems, health care reform, and other health topics.

### **Zachary Y. Dyckman, Ph.D.**

Dr. Dyckman is the President and Founder of Dyckman & Associates. He has a wide range of experience and history with the MEI, starting in 1973 when he helped develop the original index used by the Health Care Financing Administration (HCFA) to determine appropriate fee payments to physicians. In 1987, he participated on a HCFA panel that evaluated the MEI, and in 2005 and 2006 he participated on, and helped coordinate, a CMS panel of experts that evaluated the productivity measure used within the MEI.

### **Kurt D. Gillis, Ph.D.**

Dr. Gillis is a Senior Economist at the American Medical Association where he specializes in modeling the Medicare SGR formula. He also focuses on evaluating changes to the MEI, Geographic Practice Cost Indexes, and other elements of Medicare physician payments. Dr. Gillis has a thorough understanding of the survey data currently used by CMS to construct the MEI cost weights.

### **Kathryn L. Kobe, M.A.**

Ms. Kobe is the Director of Price, Wage, and Productivity Analysis with Economic Consulting Services. She is also a member of the Bureau of Labor Statistics' Users Advisory Committee. Her relevant research includes forecasting macroeconomic and industry trends; constructing price and wage indexes from proprietary survey data, government data, and the data of individual companies; and studying wages, benefits, and price and cost issues and forecasting their trends.