



**Show Me Series: Report 9**

# Health Insurance Coverage of Dual-Income Families

## The Free-Rider Effect and the Cost to Employers

*Prepared at Emory University by Kenneth E. Thorpe, PhD; Jennifer Flome, MPH; and Katya Galactionova, MA*



The Missouri Foundation for Health (MFH) was created on January 6, 2000, as part of a negotiated agreement among Blue Cross/Blue Shield of Missouri (BCBSM), the Missouri Department of Insurance and the Missouri Attorney General following the for-profit conversion of BCBSM. The Foundation received a significant portion of the assets of RightChoice, the for-profit created by the conversion. MFH is dedicated to improving the health of the people in the BCBSM service area, which encompasses 84 Missouri counties and the City of St. Louis.

In support of its mission, MFH undertakes policy studies on topics of significance to the Foundation service area and beyond. MFH has created the Show Me Series and other publications to convey information about current health related issues of interest to a broad audience ranging from members of the general public to policymakers.

## Preface

In an effort to inform the discussion regarding employer-sponsored insurance (ESI) both in Missouri and nationally, the Missouri Foundation for Health (MFH) contracted with Professor Kenneth Thorpe, PhD, of Emory University to examine the distribution of costs associated with ESI coverage among dual-income families. Although ESI is the predominant form of health insurance coverage, many observers note that it is failing to provide health care coverage to an increasing number of working U.S. citizens. We believe this study builds on existing knowledge and offers significant new insights into ESI coverage, including:

- The decline in the percentage of individuals covered by ESI has continued over the last five years, falling from 59 percent to just 53 percent.
- Large employers are carrying extra health insurance costs because many small employers have either been priced out of the health insurance system, or cannot offer coverage at similarly affordable rates as large employers.
- In 2006, employers providing health insurance to their employees' working spouses are assuming additional costs of more than \$46 billion nationally and \$891 million in Missouri.

This study offers new data on the number of dual-income families with ESI, the share of those receiving coverage through only one employer, and the added costs such employers face in providing health insurance coverage to workers they do not employ. The information presented points to the need for a more equitable method for distributing costs and benefits within the employer-sponsored insurance system.

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# Health Insurance Coverage of Dual-Income Families: The Free-Rider Effect and the Cost to Employers

*By Kenneth E. Thorpe, PhD; Jennifer Flome, MPH; and Katya Galactionova, MA, of Emory University*

The proportion of families with dual-income earners has increased sharply over the past 30 years. Among married couples in 1970, both spouses were employed in 39 percent of cases, while currently more than 52 percent of married adults both work.<sup>1</sup> At the same time, the share of employers offering insurance continues to decline, falling to 55 percent today from more than 59 percent just five years ago.<sup>2</sup> Both of these trends are placing increased financial pressure on employers that continue to offer health insurance benefits.

Currently, there are nearly 31 million families (61.7 million adults) where both adults are employed during the year. Of this total, 55.3 percent of the families received health insurance through one but not the other employer. The employers that do not provide insurance to their workers has been characterized by some as a “free-rider” because their workers are receiving coverage provided by other employers. Free-rider firms may either offer health insurance coverage that is turned down by workers or may not offer any health insurance. In turn, workers may choose such coverage if their own employer does not offer insurance, or they may simply choose the most attractive employer-sponsored benefit. In either case, this decision increases the cost for employers that continue to offer coverage, and reduces (or does not add to) the cost for employers that do not cover their own workers.

This paper presents new data on the number of dual-income families with employer-sponsored insurance (ESI), the share of those receiving coverage through only one employer, and the added costs such employers face in providing coverage to workers they do not employ. The economic costs incurred by employers covering both spouses are substantial. Nationally, the cost of covering workers receiving health insurance through their spouses’ employers totals \$46 billion in additional health insurance premiums in 2006. In Missouri, the cost totals \$891 million.

Industries that benefit the most from being free-riders include retail, agricultural, fishing, and forestry. These contain the greatest concentration of free-riders, both in the overall U.S. and in Missouri. Among U.S. dual-income families who receive ESI coverage and work in the retail/other services industry, 45 percent of workers receive insurance through their spouses’ employers. In the

agriculture, fishing, and forestry, this percentage is similar at 42 percent. In Missouri these percentages are 38 and 39 percent respectively. However, firms in other industries in the U.S. have lower percentages of workers receiving coverage from their spouses' employers, ranging from 21 to 34 percent. Missouri industries show similar results with the percentage of workers receiving insurance through their spouses' firms ranging from 21 to 30 percent. With regard to firm size, free-riders are most prevalent in the smallest firms (i.e., those with fewer than 10 employees) in the overall U.S. and in Missouri. In fact, the concentration of free-riders generally decreases as firm size increases.

### **The Distribution of Health Insurance Coverage of Dual- Income Families in the U.S. and Missouri**

Nearly 31 million U.S. families, more than 61.7 million adults, have two working spouses for all or part of the year (see Table 1). In Missouri, almost 682,000 families have dual-income spouses. Of these families, 55 percent in the U.S. (34.1 million workers in 17.1 million families) and 51 percent in Missouri (more than 692,000 workers in 346,000 families) have ESI coverage through one spouse's policy. For purposes of this paper, the term "free-rider" identifies those employers whose workers receive health insurance coverage through another employer.

Table 1 displays the distribution of health insurance coverage among dual-income families in the U.S. and Missouri. In about 7 percent of dual-income families in the U.S. neither spouse has insurance coverage. This statistic is slightly higher in the U.S. than in Missouri, where the figure is 6 percent. In both Missouri and the U.S. about 5 percent have only one worker with health insurance coverage. However, in the majority of dual-income families in the U.S. and in Missouri, both workers have health insurance coverage (88 percent and 90 percent respectively). In families where both workers have health insurance coverage, the distribution of the source of this coverage is the same for Missouri as for the overall U.S.

In both locales the majority of these workers (55 percent nationally and 51 percent in Missouri) receive their health insurance from one ESI policy (i.e., a single employer). There are slight differences in coverage with regard to workers covered under one spouse's ESI policy and those with ESI from two policies both nationally and in Missouri. Missouri has a higher percentage of dual-income families where both spouses are covered by two separate employers' policies, 31 percent versus 25 percent in the U.S. However, the state has a lower percentage of dual-income families where both spouses are covered by one spouse's policy, 51 percent versus 55 percent in the U.S.

**Table 1. Distribution of Insurance Status Among Workers Residing in Dual-Income Families, 2006**

Dual-Income Families Where:	UNITED STATES		MISSOURI	
	Number of Workers	Percent	Number of Workers	Percent
<b><i>None Are Insured</i></b>	4,430,876	7.18%	77,014	5.65%
<b><i>At Least One Worker Has Coverage:</i></b>				
Non-ESI*	555,946	0.90%	5,274	0.39%
ESI	2,772,026	4.49%	57,762	4.24%
<b><i>Both Workers are Covered:</i></b>				
One ESI and One NON-ESI	1,169,246	1.89%	36,144	2.65%
NON-ESI Coverage All Workers	3,546,362	5.75%	78,144	5.73%
ESI from ONE Policy	34,141,934	55.33%	692,466	50.80%
ESI from TWO Policies	15,090,740	24.46%	416,202	30.54%
<b>Total</b>	<b>61,707,128</b>		<b>1,363,006</b>	

*Source:* The data for the U.S. tabulations came from the 2005 March Supplement to the Current Population Survey (CPS); Missouri data were aggregated over the last three years of the CPS (2003-2005); The U.S. sample contains 37,216 observations which translates to a population of 61,707,128 workers residing in families where both spouses are employed. Three-year aggregate sample for Missouri contains 1,308 observations that represent a population of 1,363,006 workers.

*Notes:* All tabulations are weighted by 2005 person-level weight inflated to 2006 level using population projections from the Office of the Actuary at the Centers for Medicare and Medicaid Services (CMS).

\*Non-ESI coverage includes public or non-group health insurance.

## **The Incremental Costs to Employers Who Cover Both Workers in Dual-Income Families**

### *Cost Savings to the Free-Rider Employer*

There are two ways to examine the costs of free-riders. The first is in terms of incremental cost savings to the free-riding employer, i.e., how much the free-riding employer would have contributed to its employee's health insurance had that employee not been covered by her/his spouse. Table 2 shows that for each employee covered by their spouse's policy, the free-riding U.S. employer would have spent \$2,886 in 2006 had they provided health insurance to their own worker. In Missouri the savings is similar, as free-rider employers saved \$2,764 per employee by not contributing to the coverage employees received through their spouse's insurance policy.

Another way to examine the cost of free-riders is to calculate the cost to the employers who are covering the working spouse of an employee. Table 3 reveals that the incremental cost to employers covering a worker from a free-riding firm is \$2,713 per employee in the U.S. and \$2,564 in Missouri when both employers are covered under one spouse's policy.

	UNITED STATES			MISSOURI		
	Number of ESI Sources			Number of ESI Sources		
	One Source		Two Sources	One Source		Two Sources
	Policy-holder	Free-Rider		Policy-holder	Free-Rider	
Employer Contribution	\$7,170	<b>\$2,886</b>	\$5,164	\$7,648	<b>\$2,764</b>	\$5,046
Employee Contribution	\$2,913	<b>\$665</b>	\$1,767	\$2,956	<b>\$687</b>	\$1,704
Premium	\$10,083	<b>\$3,551</b>	\$6,931	\$10,604	<b>\$3,451</b>	\$6,750

*Source:* See Table 1. Premium and employee and employer (Missouri only) contribution data were imputed based on workers' state of residence and industry from the 2004 Medical Expenditure Panel Survey (MEPS) Insurance Component Summary Tables. Nominal values from MEPS were inflated to 2006 figures using projected growth rates for per capita private health care expenditure from the Office of the Actuary at the Centers for Medicare and Medicaid Services.

*Notes:* See Table 1. The first column shows the average premium and employer and employee contribution to health insurance for a family policy (Policyholder) for the U.S. as a whole. The second column demonstrates the mean employer and contributions to health insurance and the health insurance premium for a single policy observed in the industry where the "free-rider" works, for the U.S. as a whole. In other words, the second column represents what the "free-rider" employer would have contributed to his/her health insurance had he/she not been insured through his/her spouse. The third column lists health insurance costs among workers that have a separate policy with a spouse (some combination of family and single, two single, two family policies) in the U.S. The last three columns present these same statistics for Missouri.

	UNITED STATES			MISSOURI		
	Number of ESI Sources			Number of ESI Sources		
	One Source		Both Employers Cover	One Source		Both Employers Cover
	Employer Providing Coverage	Free-Rider		Employer Providing Coverage	Free-Rider	
Employer Contribution	\$7,170	<b>\$2,713</b>	\$5,164	\$7,649	<b>\$2,564</b>	\$5,046
Employee Contribution	\$2,913	<b>\$614</b>	\$1,767	\$2,957	<b>\$645</b>	\$1,704
Premium	\$10,083	<b>\$3,327</b>	\$6,931	\$10,606	<b>\$3,209</b>	\$6,750

*Source:* See Table 2.

*Notes:* The first column shows the U.S. average employer and employee contribution and the health insurance premium for the primary insured (Policyholder) among workers in dual-income families where both spouses have employer-sponsored coverage. The second column presents the imputed mean employer and employee contribution, as well as the premium for a single policy in industries where employers cover both working spouses. Alternatively, the second column shows what mean employer contribution/employee contribution/premium for a single policy is in industries where both spouses are covered through one employer. The third column illustrates the distribution of health insurance costs among workers who have a separate policy with their spouse (some combination of family and single, two single, two family policies) in the U.S. The last three columns present Missouri statistics.

### Aggregate Cost of Covering Free-Riders

The cost to employers covering both workers is substantial and totaled more than \$46 billion in 2006. Tables 4 and 5 show both the aggregate costs avoided by free-rider employers and the costs assumed by employers who cover the working spouse of an employee. Either way of calculating the burden yields a similar expenditure figure — ranging from \$46 billion to \$49 billion in the U.S. and from \$891 million to \$953 million in Missouri.

<b>Table 4. Total U.S. Employer Contribution, Employee Contribution, and Premium by Number of ESI, 2006</b> (in billions)				
	<b>UNITED STATES</b>			
	Number of ESI Sources			
	One Source			Two Sources
	Policyholder	Costs Avoided	Costs Assumed	
Employer Contribution	\$122.40	<b>\$48.88</b>	<b>\$46.23</b>	\$77.93
Employee Contribution	\$49.07	<b>\$11.27</b>	<b>\$10.46</b>	\$26.46
Premium	\$171.47	<b>\$60.15</b>	<b>\$56.69</b>	\$104.39
<p><i>Source:</i> See Table 2.</p> <p><i>Notes:</i> The first column presents the total employer and employee contributions and premium outlays for family insurance policies among dual-income families with both spouses covered under a single employer-sponsored health insurance policy. The second column illustrates the aggregate costs avoided by employers whose workers receive health coverage through a spouse. The third column lists total outlays that employers delivering coverage to “free-riders” would observe had those workers obtained a single policy from that employer. The last column shows the aggregate amounts for dual-income spouses with two policies.</p>				

<b>Table 5. Total Missouri Employer Contribution, Employee Contribution, and Premium by Number of ESI, 2006</b> (in millions)				
	<b>MISSOURI</b>			
	Number of ESI Sources			
	One Source			Two Sources
	Policyholder	Costs Avoided	Costs Assumed	
Employer Contribution	\$2,648	<b>\$953</b>	<b>\$891</b>	\$2,100
Employee Contribution	\$1,024	<b>\$237</b>	<b>\$223</b>	\$709
Premium	\$3,672	<b>\$1,190</b>	<b>\$1,114</b>	\$2,809
<p><i>Sources:</i> See Table 2.</p> <p><i>Notes:</i> See Table 4.</p>				

## The Distribution of the Free-Rider Effect

### *By Industry*

The distribution of free-riders by industry was also examined. Table 6 shows the population of dual-income spouses who receive ESI coverage either through one policy or two policies. Those receiving coverage under one policy are split into policyholders and free-riders.<sup>†</sup> In the U.S., free-riders are most heavily concentrated in the retail/other services industry and the agricultural, fishing, and forestry industry. Among the 73 percent of people working in the retail/other services industry covered under one policy, 45 percent are free-riders and 28 percent are the actual policyholders; and, among the 74 percent of persons working in the agriculture, fishing, and forestry industry who are covered under one policy, 42 percent are free-riders and 32 percent are the actual policyholders. Populations of free-riders in other industries in the U.S. range from 21 to 34 percent.

Missouri, like the overall U.S., has its highest percentage of free-riders contained within the retail/other services industry and the agriculture, fishing, and forestry industry. Among the 65 percent of persons working in the retail/other services industry who are covered under one policy, 39 percent are free-riders and 26 percent are the actual policyholders; and, among the 68 percent of Missourians working in the agriculture, fishing, and forestry industry covered under one policy, 38 percent are free-riders and the remaining 30 percent are the actual policyholders. Populations of free-riders in other industries in Missouri range from 21 to 30 percent. In both the U.S. and Missouri, free-riders are least prevalent in the mining and manufacturing industry, comprising only 21 percent of the industry's insured workers in both locales.

The highest concentration of working spouses each covered under their own policy (i.e., “Two Policies”) is found in “other” industries in the U.S (“other” is a joint industry grouping that includes educational and health services, transportation and utilities, public administration, and armed forces).<sup>3</sup> In the U.S., 33 percent of insured workers in other industries and their working spouses are each covered under individual policies; in Missouri this figure is higher at 41 percent. The lowest concentration of two policyholders is found among those working in the agriculture, fishing, and forestry industry in the U.S. (i.e., 26 percent). In Missouri the lowest concentration of two policyholders is shared equally by the agriculture, fishing, and forestry industry and the mining and manufacturing industry where 32 percent of employees are covered under two policies.

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<sup>†</sup> For simplification, this section sometimes uses the term “free-rider” vs. “policyholder” to allow comparisons within industries with significant numbers of free-riding employers.

**Table 6: The Distribution of Free-Rider Effect by Industry, 2006**

MAJOR INDUSTRY	UNITED STATES				MISSOURI			
	Number of ESI Policies			TOTAL U.S.	Number of ESI Policies			TOTAL MO
	One Policy		Two Policies		One Policy		Two Policies	
	Policy-holder	Free-Rider		Policy-holder	Free-Rider			
<b>Agric., fish., forest</b>	1,096,161	1,452,491	900,390	3,449,041	25,868	32,171	26,725	84,764
%Row	31.78	42.11	26.11	100	30.52	37.95	31.53	100
%Col	6.42	8.51	5.97	7.01	7.47	9.29	6.42	7.65
<b>Mining and Manufacturing</b>	3,141,070	1,398,790	2,104,192	6,644,051	58,575	25,759	39,617	123,951
%Row	47.28	21.05	31.67	100	47.26	20.78	31.96	100
%Col	18.4	8.19	13.94	13.5	16.92	7.44	9.52	11.18
<b>Retail, Other Service</b>	3,019,073	4,734,730	2,877,663	10,631,466	70,726	105,271	92,856	268,853
%Row	28.4	44.54	27.07	100	26.31	39.16	34.54	100
%Col	17.69	27.74	19.07	21.59	20.43	30.4	22.31	24.25
<b>Professional Services</b>	4,733,714	4,258,870	4,071,488	13,064,072	84,779	82,593	110,068	277,440
%Row	36.23	32.6	31.17	100	30.56	29.77	39.67	100
%Col	27.73	24.95	26.98	26.54	24.49	23.85	26.45	25.02
<b>Other Industries</b>	5,080,949	5,226,086	5,137,008	15,444,042	106,285	100,439	146,936	353,660
%Row	32.9	33.84	33.26	100	30.05	28.4	41.55	100
%Col	29.76	30.61	34.04	31.37	30.7	29.01	35.3	31.9
<b>Total</b>	<b>17,070,967</b>	<b>17,070,967</b>	<b>15,090,740</b>	<b>49,232,673</b>	<b>346,233</b>	<b>346,233</b>	<b>416,203</b>	<b>1,108,669</b>
	<b>34.67</b>	<b>34.67</b>	<b>30.65</b>		<b>31.23</b>	<b>31.23</b>	<b>37.54</b>	<b>100</b>

Source: See Table 2.

Notes: The MEPS-IC industry grouping was matched by the distribution of workers with CPS industry definitions. Thus premium, employer and employee contribution data for the "Agriculture, Fishing Forestry, and Construction" group in MEPS-IC was allocated to all workers classified by CPS as working in Agriculture, Forestry, Fishing, Hunting, and Construction; the "Mining and Manufacturing" group was matched accordingly with the CPS grouping; the data for "Retail, Other Services, and Unknown" industry grouping in MEPS-IC was matched with workers in Wholesale and Retail Trade, Leisure and Hospitality, and Other services; "Professional Services" category in MEPS-IC was matched with Information, Financial Activities, Professional, and Business, and Public Administration in CPS; and lastly MEPS-IC "Other" group was identified as Educational and Health Services, Transportation and Utilities, Public Administration, and Armed Forces.

### Firm Size

The free-rider effect by firm size was also examined to ascertain in which firm sizes free-riders are most prevalent. Table 7 illustrates the population of dual-income spouses receiving ESI coverage either through one policy or two policies. Those receiving coverage under one policy are once again split into policyholders and free-riders. With respect to firm size and the free-rider effect, Table 7 shows nationally that firms under 10 workers are least likely to cover their workers.

Instead, workers in these firms are the most likely to receive coverage through another employer. In fact, within this firm size, 64 percent are free-riders as compared to 47 percent in firms of 10-24 employees; 36 percent in firms of 25-99 employees; 28 percent in firms of 100-499 employees; 27 percent in firms of 500-999 employees; and, 23 percent in firms of more than 1,000 employees. In Missouri, the distribution of free-riders is much the same, i.e. in firms with fewer than 10 employees, 63 percent are free-riders and this percentage also decreases as firm size increases. In firms of 10-24 employees, 50 percent are free-riders; 25 percent in firms of 25-99 employees; 26 percent in firms of 100-499 employees; 24 percent in firms of 500-999 employees; and, 22 percent in firms of more than 1,000 employees.

**Table 7: The Distribution of Free-Rider Effect by Firm Size, 2006**

FIRM SIZE	UNITED STATES				MISSOURI			
	Number of ESI Policies			TOTAL U.S.	Number of ESI Policies			TOTAL MO
	One Policy		Two Policies		One Policy		Two Policies	
	Policy-holder	Free-Rider		Policy-holder	Free-Rider			
<b>Under 10</b>	1,462,810	5,560,533	1,621,172	8,644,514	25,999	106,842	36,200	169,041
%Row	16.92	64.32	18.75	100	15.38	63.2	21.42	100
%Col	8.57	32.57	10.74	17.56	7.51	30.86	8.7	15.25
<b>10 - 24</b>	1,055,103	1,821,471	1,034,810	3,911,384	17,846	43,616	26,049	87,511
%Row	26.98	46.57	26.46	100	20.39	49.84	29.77	100
%Col	6.18	10.67	6.86	7.94	5.15	12.6	6.26	7.89
<b>25 - 99</b>	1,941,919	2,214,192	1,944,399	6,100,510	38,597	33,099	60,440	132,136
%Row	31.83	36.3	31.87	100	29.21	25.05	45.74	100
%Col	11.38	12.97	12.88	12.39	11.15	9.56	14.52	11.92
<b>100 - 499</b>	2,543,197	1,992,158	2,466,581	7,001,936	50,955	37,288	56,235	144,477
%Row	36.32	28.45	35.23	100	35.27	25.81	38.92	100
%Col	14.9	11.67	16.34	14.22	14.72	10.77	13.51	13.03
<b>500 - 999</b>	1,206,400	829,920	1,008,884	3,045,204	13,680	13,374	29,670	56,724
%Row	39.62	27.25	33.13	100	24.12	23.58	52.31	100
%Col	7.07	4.86	6.69	6.19	3.95	3.86	7.13	5.12
<b>1,000+</b>	8,861,538	4,652,694	7,014,894	20,529,126	199,156	112,014	207,609	518,780
%Row	43.17	22.66	34.17	100	38.39	21.59	40.02	100
%Col	51.91	27.26	46.48	41.7	57.52	32.35	49.88	46.79
<b>TOTAL</b>	<b>17,070,967</b>	<b>17,070,967</b>	<b>15,090,740</b>	<b>49,232,673</b>	<b>346,233</b>	<b>346,233</b>	<b>416,203</b>	<b>1,108,669</b>
%Row	<b>34.67</b>	<b>34.67</b>	<b>30.65</b>	<b>100</b>	<b>31.23</b>	<b>31.23</b>	<b>37.54</b>	

Source: See Table 2.

While about 1 in 3 U.S. workers and their spouses in firms with more than 25 employees are each covered by their own individual policies (i.e., “Two Policies”), in firm sizes of 10-24 employees, 27 percent each have their own policies and in firms with fewer than 10 employees this number falls to 19 percent. Missouri’s distribution of workers with two policies follows that of the U.S., with smaller firms having the lowest percentage of workers with two policies; 30 percent of those in firm sizes of 10-24 employees have two policies and only 21 percent in firms with fewer than 10 employees have two policies. However, workers with two policies are much more prevalent in Missouri than in the U.S. regardless of firm size. Differences are most notable in firms of 25-99 employees and firms with 500-999 employees. For instance, 32 percent of U.S. workers in firms with 25-99 employees are covered by two policies; this figure is 46 percent in Missouri. In the U.S., 33 percent of workers in firms of 500-999 employees are covered under two separate policies, but in Missouri this figure is 52 percent.

### *By Geography*

As previously discussed, in 2006 in Missouri and the overall U.S. the majority of families characterized by dual-income spouses received health insurance coverage under one employee’s ESI coverage. Thus, the secondary, non-contributing employer is receiving a free-ride for their employee’s coverage. The incremental cost to employers covering a free-rider employer is less in Missouri (\$2,564) than in the U.S. (\$2,713), and the per-employee incremental cost avoided by employers receiving a free-ride is lower as well, \$2,764 in Missouri versus \$2,886 in the U.S. While the free-rider effect is somewhat less prevalent in the state of Missouri (51 percent) than in the overall U.S. (55 percent) and the incremental cost of covering free-riders is lower in Missouri than in the U.S., free-riders still cost the state’s employers \$891 million in 2006.

### **Conclusions**

The rise in the number of dual-income families combined with a decline in the share of employers offering insurance is placing continued financial pressure on those employers that continue to offer insurance. Of the 61.7 million dual-income earners, 55 percent of these workers receive coverage through their spouse’s employer. This “doubling up” of both workers on a single policy results in more than \$46 billion per year in added costs to those employers covering both workers.

The economic impact on employers offering coverage is substantial. The recent trends in the number of secondary workers entering the market, and a continued decline in employers offering insurance will continue to place additional financial pressure on employers that continue to offer coverage. The results raise important issues regarding the equity in the distribution of spending among businesses in the United States.

## Data and Methods

The large bulk of data for the analysis of the distribution and costs associated with the free-rider effect came from the March Supplement to the Current Population Survey (CPS),<sup>4</sup> including information on person's insurance status, source of health insurance, type of policy and employer contribution to health coverage. Despite the fact that more recent editions of CPS were available, the 2005 sample was used in the national level analysis as it is the only CPS release with information on dollar value of employer contribution to health insurance. Sample size restrictions, particularly troublesome when the free-rider effect is examined across industries and by firm size, prompted us to aggregate data for Missouri analysis over 2003-2005.<sup>5</sup> At the same time, reliance on three years of data precluded the use of reported employer contribution to health coverage in Missouri analysis, since the estimates were collected only for 2005. These data limitations lead us to rely on imputed values of employer contribution to health insurance in Missouri specific estimation.

State and industry specific premiums, employer and employee contribution data were merged from the 2004 Medical Expenditure Panel Survey Insurance Component (MEPS-IC) Summary Tables.<sup>6</sup> MEPS-IC industry grouping was matched by the distribution of workers with CPS industry definitions. Thus premium, employer and employee contribution data for "agriculture, fishing, forestry, and construction" group in MEPS-IC was allocated to all workers classified by CPS as working in agriculture, forestry, fishing, hunting, and construction; "mining and manufacturing" group was matched accordingly with the CPS grouping; data for "retail, other services and unknown" industry grouping in MEPS-IC was matched with workers in wholesale and retail trade, leisure and hospitality and other services; "professional services" category in MEPS-IC was matched with information, financial activities, professional and business public administration in CPS; and lastly MEPS-IC "other" group was identified as educational and health services, transportation and utilities, public administration, and armed forces. Both premium and employee contribution amounts were prorated based on employees' annual work status; full-year full-time workers were attributed the full amount of the corresponding premium, employer and employee contribution, whereas those that claimed to have worked half-year full-time, or full-year part-time were allocated only half of the MEPS-IC amount. It should be noted that MEPS premium and contribution data were collected exclusively from private establishments, whereas premium and worker contribution imputation for the estimation set were carried out for the private sector employees as well as government workers.

Finally population and national per capita private health care expenditure projections produced by the Office of the Actuary at the Centers for Medicare and Medicaid Services were employed to inflate population weight and nominal figures to 2006 terms. Projections are based on historical National Health Expenditures data through 2004 and a model framework that incorporates actuarial, econometric and judgmental factors.<sup>7</sup>

The population of interest (i.e., dual-income families) was identified based on sub-family relationships in the CPS. In our analysis, a family includes members that would customarily be eligible for health coverage through the head of the unit, that is spouses and their children under the age of 18 would be included into the same unit, whereas children over the age of 18 not enrolled in school full time would appear in a separate unit. Adults that reported having worked at a job or business at any time during the year prior to the survey were labeled as workers. Missing worker status was assigned to individuals that reported having worked in the previous year, yet had zero hours worked in the weeks working, or had positive hours worked but reported zero earnings (24 observations dropped). Additionally, workers classified as "without pay" or

“never worked” were excluded from the study (5,170 observations deleted). Further the number of workers in the family was ascertained by summing the number of working adults within each health insurance unit following the definitions presented (N= 210,648).

Taking advantage of extensive health insurance status categorization in CPS we identified free-riders as workers covered as dependents under an ESI, additionally workers that reported having ESI and resided in dual-income families with one family policy with both workers covered were included in this group. “Non-free-riders” on the other hand constitute a group that reported multiple policies within a unit with both workers covered through ESI. For instance, we would attribute to this group adults of any dual-income family where both workers have ESI and have more than one family policy, two single policies, or a single and a family policy (N= 46,588).

Having identified the population of dual-income families with ESI, we estimated the incremental cost avoided by free-rider employers, by imputing the value of single premium, employee and employer contribution for the free-rider industry. Further we estimated the incremental cost assumed by employers that cover both spouses as a difference in employer contribution to a family plan and a single policy observed in the industry that provides coverage to both workers. The average single premium for non-free-riders was imputed based on the average single premiums across all industries. Further the weight of each industry-specific single premium/employer/employee contribution was assigned based on the distribution of free-riders across industries. Thus, the estimates for the average single premium, employer and employee contribution for workers in “other” industry grouping contributed 30.19 percent to the overall estimate (See Table 5 for industry distribution of the free-rider effect). Summing individual values across all workers and applying CPS 2005 person level population weights inflated to 2006 figures enabled us to estimate the total burden of free-riders and the total cost savings occurring to employers whose workers rely on coverage from their spouses in the U.S. economy. The weighting procedure in Missouri was adjusted by division of inflated annual person level weights by three, thus making an observation from each year contribute equally to the final estimate.

## Endnotes

<sup>1</sup> Tabulations from the CPS.

<sup>2</sup> Data derived from <http://www.census.gov/hhes/www/hlthins/cps.html>.

<sup>3</sup> The data do not allow further disaggregation.

<sup>4</sup> The CPS is a monthly survey of about 57,000 households conducted by the Bureau of the Labor Statistics. The national probability sample of the civilian non-institutionalized population covered by the survey provides estimates for the nation as a whole, as well as particular states and smaller geographic units. The March Supplement to the CPS is the primary source of detailed information on income and work experience in the U.S. Additionally, the Supplement includes extensive data on demographics, educational attainment, family structure and health insurance status.

<sup>5</sup> The distribution of interest, the number of employer-sponsored insurance policies across dual-income families, where both workers are insured, stayed constant over 2003-2005 year period, thus using the aggregate sample is likely to lead to comparable, yet more statistically balanced, estimates than when using data for 2005 only.

<sup>6</sup> MEPS-IC is a random sample of the core MEPS survey subjects that reported being employed and offered health insurance in Round 1 of the study. These interviewees' employers were further surveyed regarding the number and types of health insurance plans offered, the amounts of employer contribution by plant type, the amounts of employee contribution by plant type, and premiums associated with health insurance offered. Data access restrictions prevent access to detailed person level information, thus leading us to rely on industry/state averages to estimate parameters of interest.

<sup>7</sup> See <http://www.cms.hhs.gov/statistics/nhe/projections-methodology>.





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