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Paying at the Pump: Gasoline Taxes in America

by
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Executive Summary

Over the past century, Americans have witnessed a marked increase in mobility through safe and reliable roadways. This improved mobility has undoubtedly increased the overall quality of life in the United States. Gasoline taxes have provided the required funds to build the roads that brought America into the transportation age.

Gasoline taxes are often mentioned as the best form of taxation from an economic perspective because they provide a system of road funding by simply charging road users when they fill up their tanks. This "user tax" adheres to what economists refer to as the benefit principle of taxation.

Early gasoline taxes in the states were explicitly created in an attempt to charge road users for the privilege of using roads. However, from the very inception of gasoline taxation, public officials have faced temptation to divert gasoline tax revenue to projects that are only tangentially related to transportation and that are often purely politically motivated. When lawmakers do overcome the temptations to squander gasoline tax funds, and instead use the revenue strictly for road construction and maintenance, gasoline taxes can serve as a reasonable tax.

Gasoline taxes have been in operation for well over 80 years in the United States. Unfortunately, the years of political pressure have eroded the original intent of gas taxes. In all too many instances, benefit-principle taxation has taken a backseat to political pandering. For instance, current federal highway legislation authorized over 6,000 earmarks from the highway trust fund. Some of these went to legitimate transportation programs, but others were earmarked for items such as the infamous "bridge to nowhere." Today, gasoline tax revenue is spent on everything from public education and museums to graffiti removal and parking garages.

From the very inception of gasoline taxation, public officials have faced temptation to divert gasoline tax revenue to projects that are only tangentially related to transportation and that are often purely politically motivated.

In light of the recent bridge collapse in Minnesota, lawmakers would be wise to carefully scrutinize the practice of using gasoline tax dollars for anything other than legitimate road construction or repair. The reputation of gasoline taxes serving as user fees has been tarnished with the

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mismanagement of transportation funds throughout the United States. Therefore, if we are ever to restore public trust to our system of highway finance, there must be proper accountability and oversight to avoid more waste and abuse of current resources.

Not only do benefit-principle taxes represent sound economic policy – they are popular with American drivers as well. History has clearly demonstrated that the most popular gasoline taxes have been those which directly linked gasoline tax revenue with road spending. If gasoline taxes are to survive as the "best tax," the benefit principle must be enforced.

Introduction

When the November 6, 2005, edition of *Parade* featured a cover story on the plan to spend over $220 million on a bridge that would connect a small town in Alaska to an island with 50 inhabitants, Americans took notice. This "bridge to nowhere" became a national rallying cry against wasteful spending practices in Washington. After the GOP lost control of Congress in the 2006 midterm elections, columnist George Will wrote: "Republicans now know where the 'Bridge to Nowhere' leads: to the political wilderness."[1]

Even with all the scrutiny over pork barrel spending practices, rarely did news stories report how the federal government obtained the revenue to fund the politically beleaguered bridge project. Since the bridge was included in the 2005 transportation bill, it was funded through the Federal Highway Trust Fund – a large majority of which comes from federal gasoline tax revenue.

For nearly a century, gasoline taxes have played a central role in financing America's roadways with tax dollars collected from the motorists who utilize them. Today, the federal government taxes each gallon of gas 18.4 cents per gallon. In addition, U.S. states and various municipal governments levy gas taxes of their own. As a result, the combined burden of local, state and federal gas taxes costs American drivers 46.9 cents per gallon on average. In fact, the average American now pays $269 dollars annually in gasoline and diesel taxes.

Historically, gasoline taxes have been justified on the grounds that the motorists who pay them also benefit from improved roadways and transportation. Even today, 89 percent of Americans believe that highway taxes ought to be used to fund highway needs.[2] In recent years, this linkage between gasoline taxes and road spending has been weakened considerably by projects like the "bridge to nowhere," leading many to question the rationale for current gasoline taxes.

The purpose of this study is to clarify the proper role of gasoline taxes and highlight ways in which state and federal gasoline taxes have deviated from their proper role in recent years.

Theory of Gasoline Taxes

The basic justification for gasoline excise taxes is that they satisfy what economists call the benefit principle of taxation. This is a longstanding justification for the imposition of taxes that dates back to at least Adam Smith's *Wealth of Nations*. The benefit principle is also widely accepted in modern public finance theory as representing sound tax policy.

Simply stated, the benefit principle tells us that consumers of government services should be taxed in proportion to the benefit they obtain from those services. For instance, it would make little sense to take income tax payments from elderly retirees to pay for roads they will never use. Similarly, if the benefit principle is to be respected, revenue extracted from motorists in the form of gasoline taxes should be used exclusively to fund roads.

When lawmakers consider taxing gasoline according to the benefit principle, they use the following logic: Gasoline usage can be reasonably correlated to the weight of vehicles and the mileage they travel. Wear and tear on roads can also be reasonably correlated to the weight of vehicles and the mileage they travel. Therefore, gasoline usage can plausibly serve as a proxy for damage done to public roads. Consequently, it can be fair and efficient for government to tax gasoline to raise funds that are depleted by road-related expenses.

If the revenue from motorists' gasoline taxes is then directed exclusively to pay for the roads they use, gasoline taxes can serve as a "user fee" and the benefit principle is met. When taxes are levied in direct proportion to the benefit the taxpayer receives, economists refer to this as an efficient distribution of a public good.[3]

In theory, economists generally refer to gasoline taxes as one of the best forms of taxation.

1 See *The Washington Post*, November 9, 2006.

2 See Gabriel Roth, "A Road Policy for the Future," *Regulation*, Spring 2003.

3 Richard E. Wagner Ph.D., "State Excise Taxation: Horse-and-Buggy Taxes In an Electronic Age," *Tax Foundation Background Paper,* No. 48 (May 2005).

In some respects, solely relying on the benefit principle of taxation will yield an outcome that parallels the market pricing of private goods.[4]

Taxing Gasoline: The Early Years in the States

Since the invention of the automobile, safe and reliable roadways have been in high demand by American motorists. With public pressure on lawmakers to create and maintain a reasonable transportation infrastructure, road funding has also been indispensable for officials.

A century ago, governments generally received their road funds from property taxes, poll taxes, and labor levies.[5] Large-scale production of automobiles started shortly after 1900 in the United States and thus began the long relationship between automobiles and taxes levied to pay for roads.

Even before Ransom Olds and Henry Ford opened assembly lines for mass production of automobiles in the United States, governments were already beginning to find ways to tax this innovative form of transportation. In 1901, the city of New York began to charge drivers a registration or license fee. By 1903 the state of Missouri had harnessed this new revenue source, dedicating the revenue to a state highway fund.[6]

In the following years, states and localities increasingly began to rely on user fees to help fund roads. By 1914, all states had instituted motor vehicle licensing and roughly 90 percent of their revenue was spent on road "construction or maintenance."[7]

As public use of the automobile became increasingly popular and affordable, public demand for roads exploded. Many states and localities could not financially keep pace with road needs and began to look for additional revenue sources. This challenging financial situation prompted the federal government to pass the Federal Aid Act in 1916, which provided matching funds to the states for highway construction.[8]

States continued to look for more revenue sources to fund roads. In 1919, Oregon became the first state in the nation to place a tax on gasoline purchases. Oregon lawmakers who overwhelmingly supported the new levy presented

Table 1
Early Gasoline Taxes in the States

State	Year of Enactment	Initial Rate
Oregon	1919	1¢
Colorado	1919	1
New Mexico	1919	1
North Dakota	1919	1
Louisiana	1920	1
Kentucky	1921	1¢
Arizona	1921	1
Arkansas	1921	1
Connecticut	1921	1
Florida	1921	1
Georgia	1921	1¢
Montana	1921	1
North Carolina	1921	1
Pennsylvania	1921	1
Washington	1921	1
Maryland	1922	1¢
Mississippi	1922	1
South Carolina	1922	2
South Dakota	1922	1
Alabama	1923	2
California	1923	2¢
Idaho	1923	2
Indiana	1923	2
Maine	1923	1
Nevada	1923	2
New Hampshire	1923	1¢
Oklahoma	1923	1
Tennessee	1923	1
Texas	1923	1
Utah	1923	2.5
Vermont	1923	1¢
Virginia	1923	3
West Virginia	1923	2
Wyoming	1923	1
Delaware	1924	2
Iowa	1925	2¢
Kansas	1925	2
Michigan	1925	2
Minnesota	1925	2
Missouri	1925	2
Nebraska	1925	2¢
Ohio	1925	2
Rhode Island	1925	1
Wisconsin	1925	2
Illinois	1927	2
New Jersey	1927	2¢
Massachusetts	1928	2
New York	1929	2
Hawaii*	1959	5
Alaska*	1959	5

* Before becoming states, Hawaii adopted a tax on gasoline in 1932 and Alaska followed suit in 1946.
Source: Tax Foundation, American Petroleum Institute

4 Ibid.

5 John Chynoweth Burnham, "The Gasoline Tax and the Automobile Revolution," *The Mississippi Valley Historical Review,* Vol. 48, No. 3. December 1961, p. 436.

6 Ibid. p. 437. (In 1904, 59 percent of road spending was funded by labor levies, 34 percent by property taxes, 4 percent by local bond issues and 3 percent by state aid funds, and zero from driving-related sources.)

7 Roy F. Britton, "Highway Taxation: Present Status and Probable Future Trends," *Annals of the American Academy of Political and Social Science,* Vol. 187, *Railroads and Government*. September 1936, pp. 79-87.

8 John Chynoweth Burnham, "The Gasoline Tax and the Automobile Revolution," *The Mississippi Valley Historical Review,* Vol. 48, No. 3. December 1961, p. 436.

it as a "user tax" on gasoline to pay for roads.[9] The Oregon law required gasoline dealers in the state to collect a "license tax" of one cent per gallon of gasoline sold.

Within six weeks, Colorado and New Mexico both approved their own gasoline taxes. These new gasoline taxes were all based on a flat rate per gallon sold; however, the new gas taxes in Colorado and New Mexico were known as excise taxes on the commodity, unlike Oregon's license tax on the privilege of selling gasoline in the state. When New York adopted a gasoline tax in 1929, every one of the 48 states had followed Oregon's lead and enacted gasoline taxes (see Table 1).

By 1936, state gasoline tax rates ranged from two to seven cents per gallon.[10] However, a rare exemption from paying gasoline taxes was granted to President Calvin Coolidge. United States Comptroller General John R. McCarl ruled that President Coolidge, along with Mrs. Coolidge and several presidential vehicles, was exempt from the District of Columbia's two-cent-per-gallon gasoline tax.[11]

Gasoline taxes met with little public resistance and in fact became quite popular with the general public. Citizens saw the benefit principle in action, as gas taxes served mostly as user fees, generating revenue for more and better roads.

Even federal lawmakers saw the advantages in states adhering to benefit-principle taxation. In 1934, Congress passed the Haydon-Cartwright Act, which threatened to withhold federal matching funds from states that diverted their gasoline tax dollars to non-highway uses.[12] The act stated:

> "Since it is unfair and unjust to tax motor vehicle transportation unless the proceeds of such taxation are applied to the construction, improvement or maintenance of highways, after June 30, 1935, Federal aid for highway construction shall be extended only to those States that use at least the amounts now provided by law . . . for the construction, improvement and maintenance of highways and administrative expenses in connection therewith . . . and for no other purpose."[13]

The general public also clearly had a sound understanding of the benefit principle, as a 1925 editorial from the *Chicago Daily Tribune* pointed out: [the gasoline tax] "has in its favor that it grades the tax for upkeep rather fairly in proportion to the wear on the roads. The Fords and light cars of small gasoline consumption do not knock the roads to pieces as do the heavy cars and trucks which require more gasoline."[14]

When gasoline tax revenue was spent on improving roads, motorists were more than willing to pay the levy to obtain greater mobility. The popularity of gas taxes was so widespread among motorists and lawmakers, one historical account stated: "Never before in the history of taxation has a major tax been so generally accepted in so short a period."[15]

Needless to say, state lawmakers also strongly approved of the gas tax. Also, many lawmakers saw gasoline taxes as a way to "export" their state's tax burden to travelers from other states.[16]

Even some in the petroleum industry acquiesced to the idea of allowing states to tax gasoline. Even if the tax caused a small reduction in gasoline consumption, that lost business would pale in comparison to the increased use of gasoline that a better system of roads would generate.

When the public did object to gasoline taxes, it was most often when lawmakers attempted to divert gasoline tax dollars away from road spending. A conclusion to a 1931 *Christian Science Monitor* editorial summarizes this public sentiment:

> "The great merit of the gasoline tax, from the standpoint of fairness, is that it accurately measures the proportions in which various motorists use the highways and assesses the cost of those facilities accordingly. But when part of the funds are

9 Portland *Oregon Journal*, February 13, 1919.

10 Roy F. Britton, "Highway Taxation: Present Status and Probable Future Trends," *Annals of the American Academy of Political and Social Science,* Vol. 187, *Railroads and Government*. September 1936, pp. 79-87.

11 See "Coolidge Not Required To Pay Gasoline Tax," *Chicago Daily Tribune*, January 29, 1928.

12 Gabriel Roth, "A Road Policy for the Future," *Regulation*, Spring 2003.

13 48 stat. 993, Cited in: James A. Dunn Jr., The Importance of Being Earmarked: Transport Policy and Highway Finance in Great Britain and the United States, Comparative Studies in Society and History, Vol. 20, No. 1, January 1978, pp. 29-53

14 "A Gasoline Tax," *Chicago Daily Tribune,* February 26, 1925

15 Abdel M. Fawzy, James W. Martin and Mark Frishe, "Development of the Motor Fuels Tax in the United States," *Southwestern Social Science Quarterly*, December 1954, p. 209-224.

16 *Portland Oregon Journal*, January 23, 1919.

turned to other purposes it loses its proper character as a use tax…"[17]

The newly instituted practice of states taxing gasoline did not escape some legal controversy. For instance, in February of 1928, the Illinois Supreme Court ruled the state's original tax on gasoline of two cents per gallon to be unconstitutional.[18] Lawsuits in Maine, Oregon and Washington also challenged the constitutionality of state gasoline taxes, and some states delayed their adoption of gasoline taxes because of constitutional concerns. In the end, this new form of taxation was upheld by courts around the nation, eventually including the United States Supreme Court.[19]

Taxing Gasoline: The Federal Gas Tax

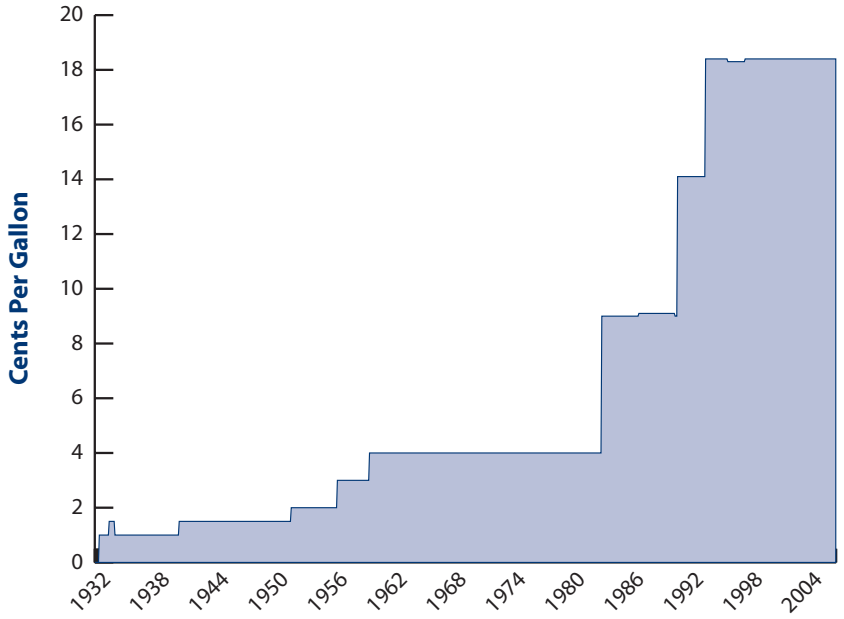
Although the 48 contiguous states had all enacted their gasoline taxes before a federal gasoline tax existed, the federal government had attempted to establish a gasoline tax several times previously. In fact, President Woodrow Wilson lobbied unsuccessfully for a two-cent federal gasoline tax during his presidency, and Congress had debated the measure on numerous occasions.[20]

By 1932, the United States was in the midst of the Great Depression. Federal revenues were suffering and government officials were looking for ways to replace falling income tax revenue. After witnessing the success of gasoline taxes at the state level, federal officials recognized the possible revenue windfall from taxing gasoline at the federal level. Additionally, federal officials liked the idea of taxing gasoline because they envisioned gasoline taxes providing a stable revenue source for the government.[21]

After replacing the legendary Andrew Mellon as Treasury Secretary, Ogden Mills successfully instituted a broad deficit-reduction plan, which included a "temporary" tax of one cent per gallon of gasoline purchased.[22] Mills's gasoline tax proposal was estimated to raise $165 million annually.[23] The proposal followed the state gas tax examples by levying the tax at the production stage. [24]

Even though state gasoline taxes were generally accepted public policy, the federal gasoline tax met resistance. In fact, during their 29th annual convention, the American Automobile Association announced a resolution "unalterably opposed" to the idea of a federal gasoline tax.[25] Additionally, many states saw the federal gas tax as a usurpation of a state responsibility and a direct threat to future state revenues. As one *Washington Post* editorial put it, "Seldom has a tax proposal met with such spontaneous and determined opposition as the suggestion to impose a federal tax on gasoline sales in addition to the universal state imposts."[26]

Figure 1
The Growth in Federal Gasoline Taxes.



Source: Congressional Research Service, Tax Foundation.

17 "Road Use for a Road Tax," *Christian Science Monitor*, January 2, 1931.

18 "Taxless 'Gas' 16c Today," *Chicago Daily Tribune*, February 25, 1928.

19 "Constitutional Law. Legislative Powers: Taxation. Gasoline Tax." *Harvard Law Review*, Vol. 37, No. 2. (Dec., 1923), pp. 265-266.

20 John Chynoweth Burnham, "The Gasoline Tax and the Automobile Revolution," *The Mississippi Valley Historical Review,* Vol. 48, No. 3. December 1961, p. 436.

21 "Federal Gasoline Tax A Possibility," *The Wall St. Journal*, May 26, 1931.

22 On June 6, 1932, Congress approved the Revenue Act of 1932. It authorized the first federal gasoline tax – effective June 21, 1932, but was set to expire one year later, on June 30, 1933.

23 "Mills Offers $337,000,000 Tax Proposals," *Christian Science Monitor*, February 16, 1932.

24 Pamela J. Jackson, "The Federal Excise Tax on Gasoline and the Highway Trust Fund: A Short History." The Congressional Research Service, April 4, 2006.

25 "A.A.A Plans Fight On Federal Gas Tax," *The Washington Post*, July 9, 1931.

26 "Overtaxing the Motor," *The Washington Post*, March 4, 1932.

Since federal gas revenue was used to balance the general budget, rather than building and maintaining roads, it was in no way considered a user fee. Therefore, many in the "good roads coalition" that supported state gas taxes disapproved of the federal levy. As one historian put it, "There is no relationship whatever in history or logic between these Federal taxes on motor transport and Federal aid for road construction."[27] Objections notwithstanding, the federal gas tax was enacted in 1932 and was popular with federal lawmakers, who eventually made the "temporary" tax permanent.

As the outbreak of World War II approached, Congress passed the Revenue Act of 1941, which made the federal gasoline tax permanent and raised the rate to 1.5 cents per gallon to help fund defense programs. The gasoline tax rate remained at the level of 1.5 cents per gallon until the beginning of the Korean War, when Congress approved a plan to increase the tax to two cents per gallon.

Gasoline Taxes and the Highway Trust Fund

President Dwight D. Eisenhower took the initiative to actively promote the idea of a federal interstate highway system. The Eisenhower administration called for, "a grand plan for a properly articulated system that solves the problems of speedy, safe, transcontinental travel."[28]

Soon after, Congress passed the Federal Aid Highway Act of 1956, creating the Federal Highway Trust Fund, the mechanism that carried President Eisenhower's plan forward. The Highway Trust Fund was also "temporary," allegedly for a 13-year period, from fiscal year 1957 through fiscal year 1969.

The new trust fund was designed to be financed by "user fees," and received all federal gasoline tax dollars as well as portions of revenue from truck taxes, tire taxes and other federal levies. When addressing concerns about raising the funds needed to complete such a large public works project, Treasury Secretary George M. Humphrey said: "America lives on wheels, and we have to provide the highways to keep America living on wheels and keep the kind and form of life we want."[29]

With the passage of the Federal Aid Highway Act of 1956, in the words of former Senator Daniel Patrick Moynihan, the federal government "assumed the direction of highway construction – one of the few areas of significant activity in which the States still had the initiative after the New Deal."[30]

As federal road spending grew, the Federal Highway Trust Fund emptied out quickly despite rising revenue. As a result, Congress enacted a one-cent-per-gallon increase in the gasoline tax as a part of the Highway Revenue Act of 1956. The new three-cent levy was only authorized through 1972, at which time the excise was scheduled to revert to a reduced rate of 1.5 cents per gallon.

Merely three years after the Highway Trust Fund was instituted, highway construction was running nearly 40 percent over the original estimates.[31] With the funding shortfall at hand, lawmakers went back for more revenue and raised the gasoline tax. Although the Eisenhower administration asked for more, the Federal Highway Aid Act of 1959 increased the gasoline tax to four cents per gallon, again on a "temporary" basis, through June of 1961.

It became apparent that the highway system would not be completed by the scheduled end of the trust fund in fiscal year 1969. Therefore both

Table 2
Federal Rates and Distribution of Motor Fuel Taxes, 2007
Cents per Gallon

			Distribution of Tax Revenue		
			Highway Trust Fund		Leaking Underground Storage Tank Trust Fund
Fuel Type	Effective Date	Tax Rate	Highway Account	Mass Transit Account	
Gasoline	10/1/1997	18.4¢	15.44¢	2.86¢	0.1¢
Diesel	10/1/1997	24.4¢	21.44¢	2.86¢	0.1¢
Gasohol	1/1/2005	18.4¢	15.44¢	2.86¢	0.1¢
Special Fuels:					
General rate	10/1/1997	18.4¢	15.44¢	2.86¢	0.1¢
Liquefied petroleum gas	10/1/2006	18.3¢	16.17¢	2.13¢	–
Liquefied natural gas	10/1/2006	24.3¢	22.444¢	1.86¢	–
M85 (from natural gas)	10/1/1997	9.25¢	7.72¢	1.43¢	0.1¢

Note: Chart of current federal rates: http://www.fhwa.dot.gov/safetealu/factsheets/htft.htm
Source: Federal Highway Administration

27 Roy F. Britton, "Highway Taxation: Present Status and Probable Future Trends," *Annals of the American Academy of Political and Social Science, Vol. 187, Railroads and Government*. September 1936, pp. 79-87.

28 The United States Department of Transportation, Federal Highway Administration, America's Highways, p. 172.

29 Cited in Richard O. Davies, *The Age of Asphalt: The Automobile, the Freeway, and the Condition of Metropolitan America* (1975) pp 16-27

30 Daniel Patrick Moynihan, "New Roads and Urban Chaos," *The Reporter*, 1960.

31 Frederick Edward Kottke, "An Economic Analysis of Financing an Interstate Highway System," *The Journal of Finance,* Vol. 17, No.1, March 1962, pp 143-144.

the highway trust fund and the temporary 4-cent tax on gasoline were extended on numerous occasions throughout the 1960s and 70s.[32]

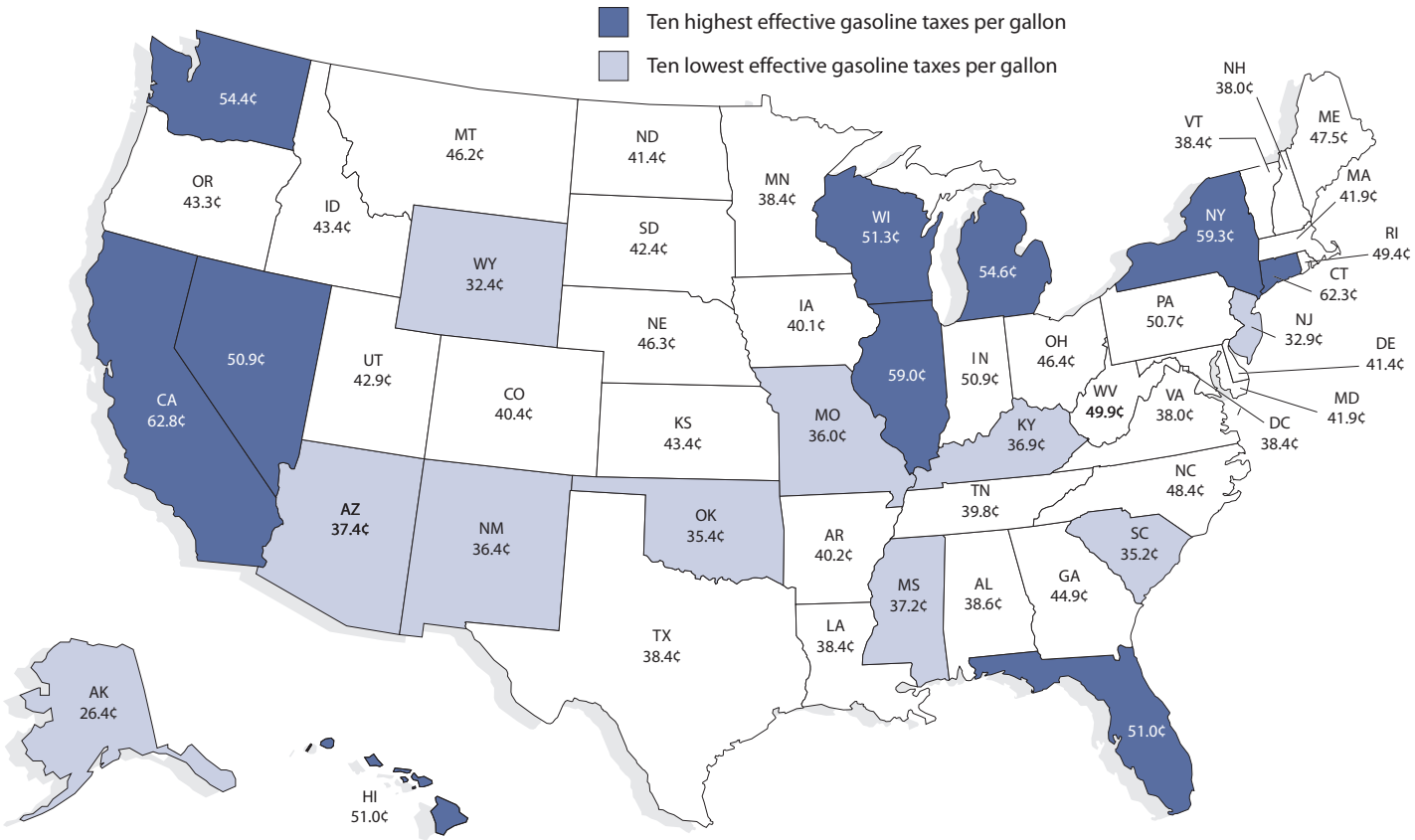
The next major change came more than 20 years later as part of the Surface Transportation Assistance Act of 1982. This legislation more than doubled the gas tax from four to nine cents per gallon. The 1982 act made deliberate changes in the allocation of gasoline tax revenue by earmarking one cent per gallon of the federal gasoline tax to fund a new mass transit account within the Highway Trust Fund; previously, 100 percent of gasoline tax revenue was allocated to fund highways.

Even though it was not a transportation bill, the Deficit Reduction Act of 1984 raised the tax on diesel fuel to 15 cents per gallon. This marked the first time that gasoline and diesel fuels were taxed at different rates.[33] The punitive tax treatment of diesel was at least partly caused by concerns that trucks contributed much of the wear and tear on roadways and were not paying their fair share in road user fees.

In reaction to environmental concerns, Congress created the Leaking Underground Storage Tank Fund, which became effective at the beginning of 1987 and added one tenth of a cent per gallon, bringing the federal gasoline tax to 9.1 cents per gallon and the diesel tax to 15.1 cents per gallon. The fund was structured to expire once balances reached $500 million, and it did so in 1990.

As in 1932, deficit concerns in 1990 once again dictated the course of action for the gas tax.

Figure 2
Combined Local, State and Federal Gasoline Taxes, July 2007



Source: American Petroleum Institute, Tax Foundation

32 For a complete listing, see: Pamela J. Jackson, "The Federal Excise Tax on Gasoline and the Highway Trust Fund: A Short History." The Congressional Research Service, April 4, 2006.

33 John W. Fischer, in "21st Century Highways," edited by Wendell Cox, Alan Pisarski and Ron Utt, The Heritage Foundation, 2005.

The Omnibus Budget Reconciliation Act of 1990, which was famous for breaking President Bush's "read my lips, no new taxes" pledge, raised the gasoline tax by five cents per gallon and also re-established the Leaking Underground Storage Tank Trust Fund. One half of the five-cent-per-gallon increase was dedicated to deficit reduction, with the remainder going towards the Mass Transit and Highway Accounts in the Highway Trust Fund.

The Omnibus Budget Reconciliation Act of 1993 increased gasoline and diesel taxes by 4.3 cents per gallon and directed the revenue entirely to deficit reduction. The 1993 act also extended the five-cent-per-gallon gas tax increase of 1990 but mandated that it be transferred to the Highway Trust Fund by 1995. With the passage of the 1993 legislation, the federal gasoline tax stood at 18.3 cents per gallon and the tax on diesel was 24.3 cents per gallon.

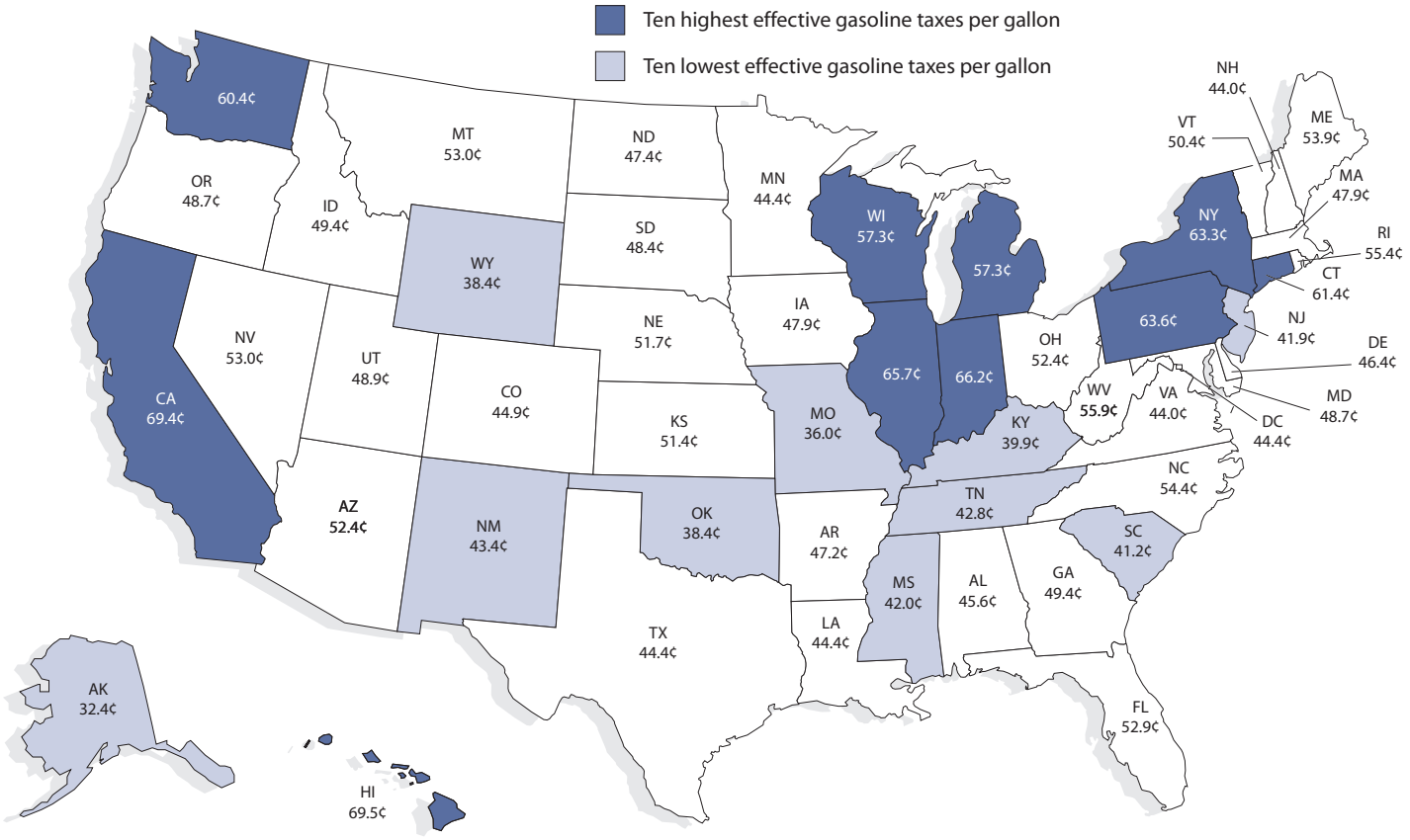
In 1997, Congress passed the Taxpayer Relief Act, which changed the distribution of gasoline tax revenue and reinstituted the Leaking Underground Storage Tank Trust Fund and the 0.1-cents-per-gallon federal levy. The legislation also mandated that revenue from the 4.3 cents added in 1993 be applied to the Highway Trust Fund rather than deficit reduction. Since October 1, 1997, the federal gasoline tax has remained at 18.4 cents per gallon, and the tax on diesel has remained at 24.4 cents.

Gasoline Taxes Today

Today's gasoline taxes are not nearly as popular as the early gasoline taxes in the states. In fact, a recent Tax Foundation/Harris Interactive poll found gasoline taxes to be the least fair out of all state and local taxes. Only 5 percent of respondents believed that state-level gasoline taxes were "very fair." [34] At the federal level, only the loathed estate tax was thought of as less fair than the federal gasoline tax.[35]

There have been no major changes to federal gasoline and diesel tax rates since the rates were

Figure 3
Combined Local, State and Federal Diesel Taxes, July 2007



Source: American Petroleum Institute, Tax Foundation

34 See "Topline Results, 2007 Annual Survey of U.S. Attitudes on Tax and Wealth," March 22, 2007, available at www.taxfoundation.org.

35 Ibid.

increased to 18.4 and 24.4 cents per gallon respectively in 1997. The current federal transportation bill, entitled the "Safe, Accountable, Flexible and Efficient Transportation Act: A Legacy for Users" (SAFETEA-LU), was signed by President George W. Bush in 2005. Some influential members of Congress sought to increase gasoline taxes to fund greater transportation spending within the SAFETEA-LU legislation. However, with the exception of certain alternative fuels, the 2005 highway legislation did not affect fuel tax rates.[36] While SAFETEA-LU did not raise

Table 3
Total Tax Rates on Gasoline and Diesel by State, July 2007
Federal Rate Plus State Rate Plus Average Local Rate
Cents per Gallon

Rank	State	Gas Tax Rate	Rank	State	Diesel Rate	Rank	State	Gas/Diesel Tax Paid Per Capita (Year)
1	California	62.8¢	1	Hawaii	69.5¢	1	Connecticut	$ 366
2	Connecticut	62.3	2	California	69.4	2	California	337
3	New York	59.3	3	Indiana	66.2	3	Michigan	320
4	Illinois	59.0	4	Illinois	65.7	4	Maine	310
5	Michigan	54.6	5	Pennsylvania	63.6	5	Florida	308
6	Washington	54.4¢	6	New York	63.3¢	6	Indiana	$ 303
7	Wisconsin	51.3	7	Connecticut	61.4	7	Illinois	300
8	Florida	51.0	8	Washington	60.4	8	Nevada	297
9	Hawaii	51.0	9	Michigan	57.3	9	Washington	297
10	Nevada	50.9	10	Wisconsin	57.3	10	Georgia	292
11	Pennsylvania	50.7¢	11	West Virginia	55.9¢	11	Wisconsin	$ 289
12	Indiana	50.0	12	Rhode Island	55.4	12	North Carolina	285
13	West Virginia	49.9	13	North Carolina	54.4	13	Montana	282
14	Rhode Island	49.4	14	Maine	53.9	14	Delaware	278
15	North Carolina	48.4	15	Montana	53.0	15	South Dakota	277
16	Maine	47.5¢	16	Nevada	53.0¢	16	North Dakota	$ 275
17	Ohio	46.4	17	Florida	52.9	17	Maryland	274
18	Nebraska	46.3	18	Arizona	52.4	18	Vermont	272
19	Montana	46.2	19	Ohio	52.4	19	Nebraska	271
20	Georgia	44.9	20	Nebraska	51.7	20	Wyoming	271
21	Idaho	43.4¢	21	Kansas	51.4¢	21	Pennsylvania	$ 270
22	Kansas	43.4	22	Vermont	50.4	22	West Virginia	268
23	Oregon	43.3	23	Georgia	49.4	23	Minnesota	267
24	Utah	42.9	24	Idaho	49.4	24	Iowa	267
25	South Dakota	42.4	25	Utah	48.9	25	Massachusetts	266
26	Maryland	41.9¢	26	Maryland	48.7¢	26	New Hampshire	$ 265
27	Massachusetts	41.9	27	Oregon	48.7	27	Alabama	264
28	Delaware	41.4	28	South Dakota	48.4	28	Virginia	264
29	North Dakota	41.4	29	Iowa	47.9	29	Ohio	262
30	Colorado	40.4	30	Massachusetts	47.9	30	Missouri	251
31	Arkansas	40.2¢	31	North Dakota	47.4¢	31	Colorado	$ 249
32	Iowa	40.1	32	Arkansas	47.2	32	Tennessee	249
33	Tennessee	39.8	33	Delaware	46.4	33	Louisiana	248
34	Alabama	38.6	34	Alabama	45.6	34	South Carolina	246
35	Louisiana	38.4	35	Colorado	44.9	35	Mississippi	244
36	Minnesota	38.4¢	36	Louisiana	44.4¢	36	New York	$ 242
37	Texas	38.4	37	Minnesota	44.4	37	Rhode Island	242
38	Vermont	38.4	38	Texas	44.4	38	Arkansas	242
39	New Hampshire	38.0	39	New Hampshire	44.0	39	Oregon	240
40	Virginia	38.0	40	Virginia	44.0	40	New Jersey	240
41	Arizona	37.4¢	41	New Mexico	43.4¢	41	Hawaii	$ 239
42	Mississippi	37.2	42	Mississippi	43.2	42	Texas	239
43	Kentucky	36.9	43	Tennessee	42.8	43	Kentucky	238
44	New Mexico	36.4	44	Missouri	42.0	44	Kansas	235
45	Missouri	36.0	45	New Jersey	41.9	45	Oklahoma	229
46	Oklahoma	35.4¢	46	South Carolina	41.2¢	46	Arizona	$ 224
47	South Carolina	35.2	47	Kentucky	39.9	47	Idaho	223
48	New Jersey	32.9	48	Oklahoma	38.4	48	New Mexico	219
49	Wyoming	32.4	49	Wyoming	38.4	49	Utah	216
50	Alaska	26.4	50	Alaska	32.4	50	Alaska	166
	Dist. of Columbia	38.4¢		Dist. of Columbia	44.4¢		District of Columbia	$ 176
	US Total	46.9¢		US Total	52.9¢		US Total	$ 275

Source: Tax Foundation, American Petroleum Institute.

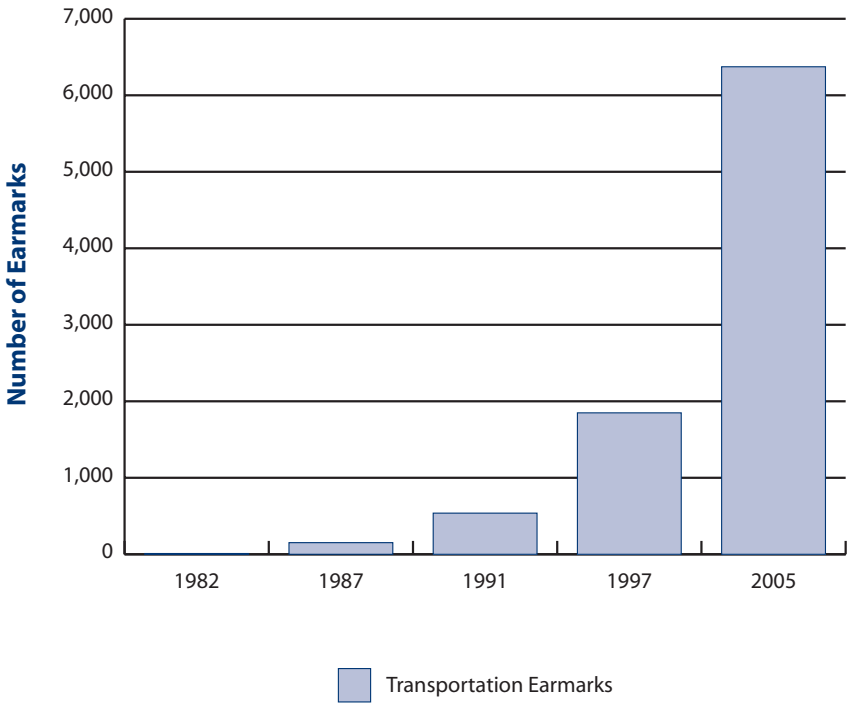
36 On October 1, 2006, the 13.6 cent per gallon tax on liquefied petroleum gas increased to 18.3 cents and the 11.9 cent per gallon tax on liquefied natural gas increased to 24.3 cents per gallon.

most motor fuel taxes, it did extend the authorization for many highway user taxes at present levels through September 30, 2011.[37]

The revenue derived from gasoline taxes is distributed into three federal accounts (see Table 2). One gets a sliver of revenue, one tenth of a cent for each gallon of gasoline or diesel sold, which goes into the Leaking Underground Storage Tank Fund for clean-up at gas station sites. All other federal gas taxes flow into the Federal Highway Trust Fund, which divides the revenue into two accounts. The highway account receives 15.44 cents for each gallon of gasoline and 21.44 cents for each gallon of diesel. The mass transit account receives 2.86 cents for each gallon of gasoline or diesel sold.

In addition to the 18.4 cent federal levy, all 50 states and the District of Columbia add their own gasoline taxes. Today, the combined burden of federal, state and local gas taxes costs American drivers an average of 46.9 cents on every gallon of gasoline purchased.[38] As Figure 2 illustrates and Table 3 details, many states levy a combined tax that exceeds 50 cents for every gallon of gasoline purchased.

Figure 4
Growth in Federal Transportation Earmarks (1982–2005)



Source: Tax Foundation, Taxpayers for Common Sense

Every state in the union has a statewide excise tax on gasoline. Furthermore, seven states apply their general sales taxes to gasoline purchases and some states levy taxes based on the per-gallon gross production of petroleum products. Some states levy environmental fees and other taxes on gasoline purchases. These state taxes on gasoline can significantly add to the tax burden on motorists (see Figure 2). Motorists in California pay the highest combined gasoline tax at 62.8 cents per gallon, while Alaskans pay the least – 26.4 cents per gallon. The nationwide average gasoline tax rate equals 46.9 cents per gallon.

As in the federal system, states generally tax diesel fuels at higher rates than gasoline. On average, the combined rate on diesel fuel is six cents per gallon greater than the combined rate on gasoline. The national average tax on diesel fuel is 52.9 cents per gallon. Hawaii has the highest combined diesel taxes in the nation at 69.5 cents per gallon, while Alaska taxes diesel at the national low of 32.4 cents per gallon.

The annual burden of gasoline and diesel taxes on the average American is estimated at $275, ranging from $166 in Alaska to $366 in Connecticut. While federal gasoline and diesel tax rates have remained unchanged since 1997, numerous states have enacted gasoline tax increases. In fact, fourteen states enacted gasoline tax rate hikes and seven index their gasoline tax rates for inflation.[39]

America's 50-Year Experiment with the Highway Trust Fund

The Benefit Principle in Practice?

As the Eisenhower Interstate System celebrated its 50th birthday in 2006, it seems appropriate to analyze the gasoline tax to see how consistent it has been with the benefit principle. Even though one of the major reasons for the success of the early state gas taxes was their adherence to the benefit principle, the early federal gas tax did not follow that pattern.

From the first gas tax in 1932, which was used for deficit reduction, to the "defense" gas tax during WWII and the Korean War, the federal gas tax did not even attempt to serve as a user fee. The landmark 1956 Federal Aid Highway Act, however, was the legislative vehicle for the Highway Trust Fund and marked the first time

37 See: United States Federal Highway Administration, Fact Sheet on Highway Provisions in SAFETEA-LU

38 American Petroleum Institute, State Motor Fuel Excise Tax Rate Report (see www.api.org).

39 "Surface Transportation Funding Options for States," National Conference of State Legislatures, May 2006.

that federal gas tax revenue was used to fund federal highways.[40]

Where Do Gasoline Taxes Go?

If gasoline taxes are to meet the criteria of the benefit principle, gasoline tax revenue must be spent on building and maintaining roads. Aside from the 0.1 cents per gallon of the federal gasoline tax that funds the Leaking Underground Storage Tank Fund, the remainder of gasoline tax revenue ends up in the Highway Trust Fund. Motor fuels taxes make up the overwhelming majority of Highway Trust Fund receipts (see Table 4).[41]

Since gasoline taxes are levied at the production stage, businesses remit payments of the federal excise tax on gasoline to the U.S. Department of Treasury. Deposits are made twice a month and the money goes into the Treasury's General Fund. After the gasoline tax funds are received into the General Fund, the Treasury uses an allocation formula that distributes gasoline excise taxes to the Highway Trust Fund.

Table 4
Federal Highway Trust Fund Revenue
Fiscal Year 2006

Revenue Source	Billions of Dollars	Percentage of Total Trust Fund Revenue
Gasoline and Gasohol Tax	$ 25.5	65%
Diesel Tax	$ 9.7	25%
Retail Sales Tax on Trucks	$ 3.5	9%
Heavy-Vehicle Use Tax	$ 1.4	3%
Tax on Truck Tires	$ 0.5	1%
Refunds	$ -1.0	-3%
Total	$ 39.6	100%

Source: Congressional Budget Office

Non-Highway Use of Gasoline Tax Revenue

Even though gasoline tax revenues are directed almost exclusively into the Highway Trust Fund, there is little guarantee the funds are spent properly on roads. The increasingly popular practice of "earmarking" federal highway funds for specific, local projects allows for an ever-increasing barrage of politically motivated pork barrel spending.

The Federal Aid Highway Act of 1968 included the first recorded specifically earmarked highway project, funded through the highway trust fund.[42] A "demonstration project" to build the Three Sisters Bridge over the Potomac River in Washington, DC, was never undertaken due to local concerns, but it served as the first salvo in the practice of earmarking federal highway funds.

By the time Congress passed the 1982 highway bill, 10 special demonstration projects found their way into the final legislation. As time passed, politicians discovered how politically advantageous it is to deliver earmarked transportation projects back to constituents. The popularity of earmarking projects grew so much that President Ronald Reagan vetoed the 1987 transportation bill because of the largesse of its 152 demonstration projects.[43] Lawmakers valued the earmarked spending so much that they voted to override the president's veto.

The next highway authorization bill was passed in 1991, with 538 demonstration projects totaling $6.2 billion. In addition to setting the record for earmarks, the 1991 bill (ISTEA) also gave states much greater leeway in where they could spend dollars from the Highway Trust Fund. For example, the surface transportation block grant program distributed $24 billion to the states. The program mandated that 10 percent of funds go towards highway safety and another 10 percent for miscellaneous programs like landscap-

Examples of Federal Earmarks in 2005 Highway Bill

- $6 million for graffiti elimination in New York
- $2.95 million to Alaska for a film about state roads
- $2.2 million to construct a waterfront esplanade at Fort Totten in New York
- $8 million for a Harlem Hospital garage
- Nearly $4 million on the National Packard Museum in Warren, Ohio, and the Henry Ford Museum in Dearborn, Mich.
- $2.4 million on a Red River National Wildlife Refuge Visitor Center in Louisiana
- $1.2 million to install lighting and steps and to equip an interpretative facility at the Blue Ridge Music Center

Source: Taxpayers for Common Sense at http://www.taxpayer.net/Transportation/safetealu/states.htm

40 Frederick Edward Kottke, "An Economic Analysis of Financing an Interstate Highway System," *The Journal of Finance,* Vol. 17, No.1, March 1962, pp 143-144.

41 Donald B. Marron, "Status of the Highway Trust Fund: 2007," Statement before the Subcommittee on Highways and Transit, Committee on Tansportation and Infrastructure, U.S. House of Representatives, March 27, 2007

42 John W. Fischer, in "21st Century Highways," edited by Wendell Cox, Alan Pisarski and Ron Utt, The Heritage Foundation, 2005.

43 Ibid.

ing, scenic beautification, advertisement control and removal, and bike paths.[44]

The 1997 transportation bill (TEA-21) was the first for the new Republican majority in Congress and it shattered previous earmark records, authorizing 1,849 projects worth $9.4 billion. It also opened the highway trust fund to the Appalachian Development Highway Program, which had always received its support from general funds.[45]

The most recent highway bill, SAFETEA-LU, was passed by large majorities in Congress and signed by President Bush on August 10, 2005. SAFETEA-LU authorized $286.5 billion for transportation programs from fiscal years 2004-2009. The Bush administration insisted that the highway bill be entirely funded with resources from the Highway Trust Fund. The 2005 transportation bill shattered all earmark records by containing 6,373 – worth a record $24.2 billion.[46] Table 5 shows the top 10 recipient states of earmarked projects in the 2005 highway legislation.

Table 5
Top 10 Recipients of Pork Projects in 2005 Highway Bill

	Number of Earmarks	Value of Earmarks
California	547	$2,651,995,251
Illinois	330	$1,334,075,702
Alaska	120	$1,001,267,966
New York	494	$990,268,885
Texas	231	$754,384,684
Missouri	97	$728,036,000
Pennsylvania	423	$706,691,502
Florida	232	$694,616,440
Ohio	245	$665,231,434
Oklahoma	66	$573,200,000

Source: Taxpayers for Common Sense, Tax Foundation, Federal Highway Administration

There are undoubtedly many earmarked projects that are legitimate uses of gasoline tax revenue; that is, they fund essential road construction and repair. However, there are countless examples from the 2005 highway bill that highlight the folly of appropriating highway funds based on political considerations rather than transportation needs (see sidebar on p. 11).

The 2005 SAFETEA-LU legislation also provides funding for the Congestion Mitigation and Air Quality Improvement Program ($8.6 billion to comply with the Clean Air Act), recreational trails ($370 million for trails for bicyclists and other users), ferry boats and ferry terminal facilities ($285 million), and Puerto Rico highways ($665 million).[47]

These egregious diversions of funds away from roads to "pork barrel" projects prove that the Highway Trust Fund does not protect gasoline tax dollars. With Congress in charge of the trust fund, ribbon-cutting ceremonies and photo opportunities trump routine highway maintenance.

President Bush's grandfather, Senator Prescott Bush, made this prescient remark in 1955: "Highway legislation scatters billions of politically-guided Federal dollars over the country as though they were shot from a blunderbuss. These widely scattered dollars will not build those roads having the greatest public interest."[48]

There is little doubt that the interstate highway system is one of the greatest public works projects in modern time. However, the federal system of highway finance is undermining the benefit principle, and with it, public support for gas taxes.

Other Revenue Diversions

The Surface Transportation Assistance Act of 1982 allowed governments to divert revenue from gasoline taxes to pay for non-highway projects, especially for mass transit.

But even before 1982, there had been some diversions made possible by legislation in the 1960s and '70s. For instance, states were allowed to transfer funds from urban sections of highways into mass transit programs. In the early 1970s, Senator Edward Kennedy and Representative Edward Koch led an unsuccessful attempt to transform the Highway Trust Fund into a "general fund" for any transportation purpose.[49]

After 1982, the deterioration of the benefit principle accelerated. The passage of legislation in 1990 and 1993 statutorily diverted increases in the gasoline tax to the general treasury for deficit

44 Robert Jay Dilger, "TEA-21: Transportation Policy, Pork Barrel Politics, and American Federalism," *Publius*, Vol. 28, No.1, The State of American Federalism, 1997-1998. Winter, 1998.

45 John W. Fischer, in "21st Century Highways," edited by Wendell Cox, Alan Pisarski and Ron Utt, The Heritage Foundation, 2005.

46 See Bill Nichols, "$268B highway bill signed amid criticism," *USA Today* (August 10, 2005) A detailed list of earmarks is available from Taxpayers for Common Sense: http://www.taxpayer.net/Transportation/safetealu/earmarks.pdf

47 It should be noted that drivers in Puerto Rico do not pay into the Federal Highway Trust Fund.

48 *Congressional Quarterly Almanac*, 1955, p. 436.

49 See Wade Greene, "In Goes Money, Out Comes Concrete," *New York Times*, January 16, 1972.

reduction for the first time since the creation of the Highway Trust Fund in 1956. By the end of 1993, 6.8 cents out of every 18.4 cents collected per gallon was diverted away from any semblance of highway use.

This damaging trend was reversed somewhat by the passage of the Taxpayer Relief Act of 1997. Gasoline tax revenues were again directed exclusively into the Highway Trust Fund and could not be used for deficit reduction purposes. However, today's federal gasoline tax system still faces many obstacles before it can claim the mantle of a user fee system. Even though gasoline dollars are directed to the Highway Trust Fund, some leading transportation analysts estimate that total diversions of gasoline tax dollars away from legitimate general road use equal nearly 40 percent of total fuel tax revenue.[50]

Table 6
Amount of Highway Trust Fund Spending Received Per Dollar Contributed
Fiscal Years 1956 - 2005

State	Ratio of Apportionments and Allocations to Payments: Fiscal Year 2005	Ratio of Apportionments and Allocations to Payments: Cumulative Ratio Since 7-1-56
Alabama	$ 1.20	$ 1.11
Alaska	7.40	6.66
Arizona	0.96	1.06
Arkansas	1.13	1.04
California	1.15	0.97
Colorado	$ 0.99	$ 1.17
Connecticut	1.66	1.68
Delaware	1.94	1.60
Dist. of Col.	4.97	4.11
Florida	1.46	0.94
Georgia	$ 1.02	$ 0.93
Hawaii	2.12	3.16
Idaho	1.57	1.64
Illinois	0.93	1.06
Indiana	0.93	0.89
Iowa	$ 1.00	$ 1.12
Kansas	1.18	1.10
Kentucky	1.01	1.03
Louisiana	1.05	1.13
Maine	1.11	1.11
Maryland	$ 1.00	$ 1.28
Massachusetts	1.10	1.46
Michigan	1.01	0.92
Minnesota	0.87	1.18
Mississippi	1.03	1.00
Missouri	$ 1.04	$ 0.97
Montana	2.44	2.37
Nebraska	1.08	1.10
Nevada	0.94	1.30
New Hampshire	1.19	1.29
New Jersey	$ 0.96	$ 0.99
New Mexico	1.17	1.28
New York	1.34	1.26
North Carolina	1.03	0.90
North Dakota	2.60	2.10
Ohio	$ 1.05	$ 0.93
Oklahoma	1.29	0.91
Oregon	1.10	1.16
Pennsylvania	1.34	1.19
Rhode Island	2.68	2.29
South Carolina	$ 0.96	$ 0.91
South Dakota	2.22	2.11
Tennessee	1.00	0.97
Texas	0.96	0.88
Utah	1.01	1.36
Vermont	$ 2.30	$ 2.08
Virginia	0.98	1.09
Washington	1.05	1.35
West Virginia	1.99	1.94
Wisconsin	1.14	0.99
Wyoming	$ 1.60	$ 1.74
U.S.	1.14	1.10

Source: Federal Highway Administration

Federal Funding and Federal Requirements

One of the most troubling problems with federal involvement in highway finance is the propensity federal lawmakers have to "attach strings" to federal highway disbursements.

Over the years, the federal government has used transportation funds as a proverbial carrot and stick to influence state policy decisions. For instance, the Davis-Bacon Act has been applied to highway projects since the inception of the Highway Trust Fund in 1956. The act requires that labor be compensated at the local prevailing wage for all federal-aid highway projects. Some estimates show Davis-Bacon provisions have added up to 38 percent of the cost of construction.[51]

Federal requirements that accompany federal funds go far beyond Davis-Bacon. For example, the federal government required states to comply with various federal mandates. The 1978 highway bill included a "Buy American" provision, which required states to purchase highway materials that contained a certain percentage of domestically produced content.[52] Federal highway funds have also been used to persuade states to adopt the 55

Table 7
Federal Highway Account Fund Balances 2006-2010 ($ Billions)

Year	2006	2007	2008	2009	2010	2006-2009
Estimated Outlays	$ 33.9	$ 35.7	$ 39.4	$ 41.5	$ 42.8	$ 193.3
Estimated Receipts	$ 33.6	$ 35.2	$ 35.9	$ 36.7	$ 37.5	$ 178.9
Projected End-of-Year Balance	$ 8.9	$ 8.1	$ 3.9	– $ 1.7	– $ 8.1	na

Note: Numbers may not add due to transfers to the mass transit account.
Source: Congressional Budget Office

50 Ronald Utt, "Reauthorization of TEA-21: A Primer on Reforming the Federal Highway and Transit Programs," *Heritage Foundation Backgrounder* No. 1643 (April 7, 2003).

51 Gabriel Roth, "Liberating the Roads – Reforming U.S. Highway Policy," *Cato Institute Policy Analysis* No. 538 (March 17, 2005).

52 John W. Fischer, in "21st Century Highways," edited by Wendell Cox, Alan Pisarski and Ron Utt, The Heritage Foundation, 2005.

mile-an-hour speed limit law and to raise the minimum age for consuming alcohol.[53]

The SAFETEA-LU highway legislation in 2005 authorized $7.5 million per year for a grant program for states when they enact laws that prohibit racial profiling. Additionally, ten percent of funds for specialized programs "must go to small businesses owned and controlled by socially and economically disadvantaged individuals."[54]

Inequity Among States: Donor States vs. Beneficiary States

Most highway funds are appropriated to the states according to a complex mathematical formula that is one of the foremost points of contention every time Congress is debating a highway bill.

Throughout the years, some "donor states" have contributed more gas tax revenues to the highway account than they have received back in federal spending. Other states are net recipients of federal dollars and are considered "beneficiary states." This funding discrepancy has led to considerable feuding and even contributed to efforts to devolve the federal gasoline tax to the states.[55]

As shown in Table 6, some states have historically received significantly more in federal funding than they have paid in highway taxes. For instance, since the inception of the Federal Highway Trust Fund in 1956, Texas has only received 88 cents in transportation spending for every dollar it paid into the Highway Trust Fund. Indiana and North Carolina haven't fared much better: they recouped only 89 and 90 cents respectively per dollar deposited into the trust fund since 1956. Over the same period, Alaska received $6.66 from the Highway Trust Fund for every dollar motorists contributed to the fund.

In 2005, Alaska was again the big winner, taking home $7.40 in transportation funding for every $1 Alaskan motorists paid into the Highway Trust Fund. On the other end of the spectrum, Minnesota received only $0.87 in spending for every $1 it sent to Washington in gasoline taxes.

In response to criticisms from states that receive less funding than they pay in taxes, the 2005 highway bill (SAFETEA-LU) instituted new funding requirements. The legislation guarantees that states will receive back a minimum of 90.5 percent of their contributions to the Highway Trust Fund in 2005 and 2006. The guaranteed funding level will increase to 91.5% for 2007 and then to 92% for 2008 and 2009.[56]

The increase in guaranteed funding was made possible because SAFETEA-LU was structured to spend down surplus dollars that accumulated in the Highway Account of the Highway Trust Fund (see Table 7). Large surpluses in the Highway Trust Fund were the result of unspent funds and "interest" accumulated over the years, but the Highway Trust Fund ceased earning interest on unspent balances effective October 1, 1998 per Section 9004(a) of TEA-21. Critics argued successfully that so-called interest had been allowed to build up in the Highway Trust Fund as an accounting gimmick to mask the size of the federal deficit.

Table 8
Selective Diversions of State Gasoline Tax Revenue to Non-Road Uses

Alabama	"To improve boating and boating facilities, seafood and salt water sports fishing"
California	"For conservation activities to prevent or reduce soil, wildlife and habitat loss and for enforcement activities including peace officers, physical barriers and other traffic control measures"
Colorado	"Telecommunications support"; "Provision of disaster emergency services related to the transportation of hazardous materials"; "Operation of border inspection stations"
Florida	"Used by the Department of Agriculture for eradication of the fruit fly and other such emergencies" AND $2,500,000 to "Recreational boating activities, freshwater fisheries management and research"
Idaho	Development of snowmobile trails inside and outside of State park areas"
Maine	Improvement of recreational snowmobiling
New York	5% to general fund
North Carolina	Funds Drivers Ed
Tennessee	Uses some of gas tax to finance general debt
Texas	Aid to public schools
Wisconsin	Department of Commerce – Administration of mobile home titling

Source: Federal Highway Administration

Table 9
States Enacting Temporary Gas Tax Holidays Since 2000

State	Effective Dates	Description
Georgia	September 2005	Suspended state's 7.5 cents-per-gallon excise tax and 4 percent sales tax on gasoline.
Florida	August 2004	Suspended 8 cents of the state's 14.3 cents-per-gallon excise tax on gasoline.
Illinois	July-December 2000	Suspended the state's portion of the sales tax on gasoline (5 percent).
Indiana	July-October 2000	Suspended the state's sales tax on gasoline (5 percent).

Source: State Tax Notes; Tax Foundation

53 Ibid.

54 See Isaiah J. Poole, "Details of Transportation Law," *Congressional Quarterly* (September 26, 2005).

55 In the 109th Congress, separate legislation was introduced by Representative Jeff Flake, Representative Scott Garrett and Senator Jim DeMint to "devolve" much of the responsibility for taxing gasoline and funding transportation to the states. For more information, see the Library of Congress' bill descriptions of H.R. 1097 and H.R. 2284. The Congressmen also plan to introduce similar legislation in the 110th Congress.

56 http://www.fhwa.dot.gov/safetealu/factsheets/equitybonus.htm

Has the Benefit Principle Been Honored in State Gas Taxes?

When states levy gasoline taxes, do they follow the benefit principle any better than the federal government does with its gas tax revenue? The answer is mostly yes, although it has always been a battle for states to keep revenues dedicated to legitimate road use.

As of 2005, a total of 29 states mandated that gasoline tax revenue go towards highway and road purposes. Of those 29 states, 21 have constitutional requirements for road funding, while eight statutorily require gas tax dollars to pay for roads.[57]

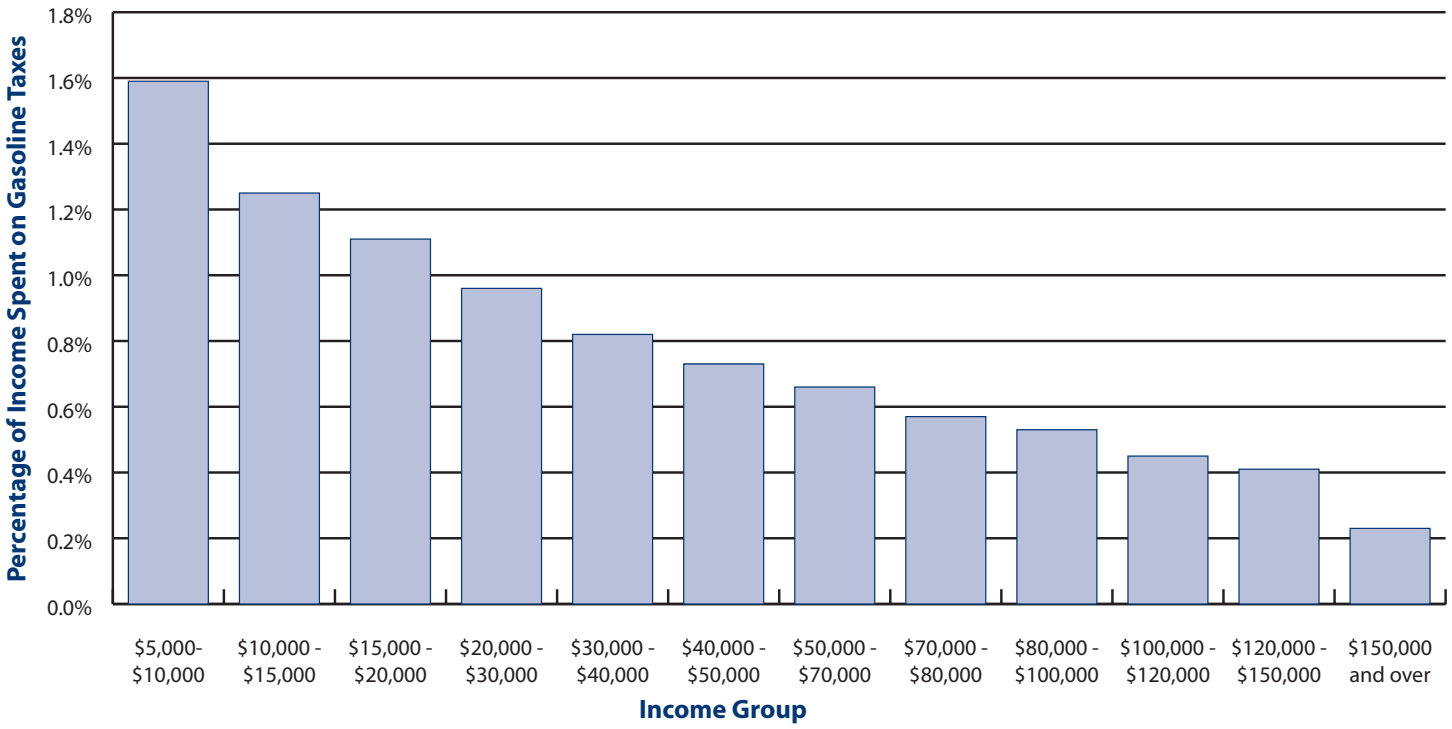
The remaining 21 states are free to use their gas tax revenue for spending on tangentially related or unrelated programs. One common diversion is using gasoline tax dollars to spend on mass transit programs, but there are also many diversions that are detached from transportation. For instance, in the early years of the gas tax, many southern states tended to use gas tax revenue to fund public education programs. Today, Texas still funnels 25 percent of its gasoline tax dollars into the Permanent School Fund.[58]

Unfortunately, Texas is not the only state that violates the benefit principle in its taxation of fuel. A 2001 report from the Federal Highway Administration outlined some negligent uses of state gasoline tax revenue (see Table 8).[59]

Diverting gasoline tax revenue away from highway spending is a fairly common occurrence at the federal and state level, and it is by no means a recent development. From the very inception of gasoline taxes, there have been attempts to divert the money for popular programs.

For instance, shortly after Oregon instituted the nation's first gasoline tax, lawmakers narrowly rejected an attempt to tax gasoline to fund a world's fair in 1922.[60] The pressure to divert

Figure 5
If Fuel Taxes Are Not Spent on Roads, They Become a Regressive Tax



Source: Tax Foundation, Bureau of Labor Statistics

57 National Conference of State Legislatures, *Surface Transportation Funding Options for the States,* May 2006.

58 Ibid.

59 Available at: http://fhwainter.fhwa.dot.gov/ohim/hwytaxes/2001/tab6_toc.htm

60 John Chynoweth Burnham, "The Gasoline Tax and the Automobile Revolution," *The Mississippi Valley Historical Review,* Vol. 48, No. 3. December 1961, p. 436.

gasoline tax revenue away from highway use continues to be a major impediment for sound tax policy at both the state and federal levels.

Other State Gas Tax Issues: Gas Tax Holidays

Another significant development in state taxation of gasoline is the recent popularity of gasoline tax "holidays." The phrase "tax holiday" generally describes any temporary repeal of a tax—in this case, a temporary repeal of local, state or federal sales or excise taxes on gasoline. As fuel prices have risen in recent years, gas tax holidays have grown in popularity with lawmakers as a means of temporarily lowering retail gas prices for consumers.

The most recent experiment with gas tax holidays was in the State of Georgia, when lawmakers temporarily repealed the state's portion of the sales and excise taxes on gas during the period of abnormally high gas prices in the wake of Hurricane Katrina in 2005. Since 2000, three other states have also enacted gas tax holidays (see Table 9), and 41 states and the District of Columbia have considered or enacted similar proposals to suspend, cap, or otherwise freeze gasoline taxes.[61]

A basic principle of sound tax policy is that taxes should aim to minimize the economic harm caused by the tax system and influence individual behavior as little as possible. Gas tax holidays are not consistent with that principle, and they introduce unnecessary distortions into the marketplace that well designed tax relief does not.[62]

Gas tax holidays offer lawmakers a politically appealing response to rising gas prices. However, compared with other types of tax relief, tax holidays reduce the efficiency of the tax system and the overall economy. Lawmakers should not rely on gas tax holidays, and should focus instead on permanent, broad-based tax relief and other long-term solutions to high gas prices.

Who Pays Gas Taxes?

American motorists from the 50 states and the District of Columbia pay the federal 18.4 cents per gallon federal excise and a variety of state and local taxes. However, non-highway use of gasoline for businesses and farms is exempt from federal gasoline taxes. Also exempt is non-highway use of diesel fuel by individuals who pledge to avoid using the fuel on the interstate highway system.[63] Additionally, residents of American territories and protectorates do not pay the federal gasoline tax.

The federal gas tax is referred to as an excise tax, which simply means that it is a "selective sales" tax, usually levied on a per unit basis. Every gallon of gasoline purchased is taxed 18.4 cents at the federal level. The vast majority of all gasoline taxes take the form of an excise, but several jurisdictions do tax gasoline on an ad valorem basis (as a percentage of the price) – typically when they apply their retail sales tax to gasoline purchases.[64]

Since various levels of government began to tax gasoline in the early 20th century, the taxes have generally been levied and paid at the production stage. Therefore, the states where the major gasoline-producing companies have their headquarters remit a majority of gasoline excise tax payments to the federal government. However, economists make an essential distinction between the "legal incidence" of a tax—that is, who is legally obligated to remit tax payments to the government—and the "economic incidence," which identifies who ultimately bears the economic burden of a tax.[65]

The question of who bears the true economic burden of gasoline taxes has been the subject of rigorous debate. Economic studies have found the economic burden of gas taxes can fluctuate depending on location, tax structure, and the length of the time period being analyzed.[66] However, since consumers undoubtedly bear a significant burden of gasoline taxes, it is helpful to examine how federal gasoline taxes are distributed among income groups.

61 See Jonathan Williams and Andrew Chamberlain, "Temporary Gasoline Tax Holidays: Relief for Motorists or Poor Tax Policy?" *Tax Foundation Fiscal Fact,* No. 61 (July 10, 2006)

62 Richard R. Hawkins and John L. Mikesell, "Six Reasons to Hate Your Sales Tax Holiday," *State Tax Notes* (March 5, 2001).

63 James N. Hines Jr., "Taxing Consumption and Other Sins," NBER Working Paper 12730, (December 2006).

64 In theory, states should apply their general sales taxes to gasoline purchases. Sound tax policy suggests that sales tax bases should be kept as broad as possible to reduce any economic distortions caused by a narrow tax base.

65 Gerald Prante and Andrew Chamberlain, "Economic vs. Legal Incidence: Comparing Census Bureau Figures with Tax Foundation Tax Burdens," *Tax Foundation Fiscal Fact,* No. 59 (June 9, 2006).

66 Joseph J. Doyle and Krislert Samphantharak, "$2.00 Gas! Studying the Effects of a Gas Tax Moratorium," National Bureau of Economic Research Working Paper No. 12266 (May 2006). Also see Hayley Chouinard and Jeffrey Perloff, "Incidence of Federal and State Gasoline Taxes," Economics Letters, (April 2004).

Gasoline taxes hit lower-income motorists the hardest. This is unsurprising and as long as the tax revenue is spent entirely on roads, it is not a public policy problem. When adhering to the benefit principle and serving as a true user fee, the gas tax is simply the price of road maintenance and "regressive" only in the same way that the price of computers, entertainment, travel and everything else is regressive. But when gas taxes fund "deficit reduction," i.e. flow into a general fund with income tax revenue and are spent on general government operations, then the income patterns of gas tax payers becomes a major concern.

As a percentage of income, the gas tax burden on families earning less than $10,000 is more than ten times higher than the burden on families earning over $150,000 per year.[67] Americans earning less than $10,000 annually paid an estimated 2.5 percent of their income in gas taxes whereas Americans earning an annual salary of $150,000 and above pay only about 0.2 percent of their incomes in gas taxes.

Lawmakers should certainly keep the regressive nature of gasoline taxes in mind before considering proposals to increase gasoline taxes for purposes outside of road construction and maintenance.

Gasoline Taxes: Benefit Principle or Pigouvian?

This paper has outlined the case for restoring and maintaining the benefit principle in gasoline taxation, which can only be done by spending the revenue exclusively on roads. However, some notable lawmakers, journalists and academics have recently advocated raising gasoline taxes in an attempt to achieve broader social goals. For instance, N. Gregory Mankiw, Harvard professor and former Chairman of the Council of Economic Advisers, authored a piece a year ago for the *Wall Street Journal* outlining his reasons for imposing a "Pigouvian" gasoline tax on American motorists.[68] Professor Mankiw is the founder of the Pigou Club, which is named after Arthur C. Pigou, a renowned English economist from the early 20th century, who advocated taxes to correct what economists call "market failures" or "negative externalities" that impose spillover costs on society.

Mankiw describes the club as "an elite group of economists and pundits with the good sense to have publicly advocated higher Pigouvian taxes, such as gasoline taxes or carbon taxes." Mankiw has advocated phasing in a $1 per gallon increase in Pigouvian gasoline taxes over a decade to correct for social costs created by gasoline consumption, specifically relating to national security, traffic congestion and pollution.

In theory, using Pigouvian taxes is efficient and straightforward, but in practice, the Pigouvian solution is anything but simple. One important problem often ignored by Pigouvians is what is typically referred to as the "knowledge problem."[69] That is, if gas taxes can be legitimately raised just to offset the social costs of gasoline consumption, then we need to know the extent of those social costs. How would policymakers attempt to quantify them on an ongoing basis, and how high must a tax be to compensate for them?

Clearly, the practical difficulty of compiling data and estimating social costs is not trivial. Pigouvian taxes place enormously high information burdens on policymakers. Policymakers looking for social cost estimates in the economic literature will find widely divergent results.[70]

If these answers are so difficult to determine, then there must be a good chance of overestimating social costs and enacting an overly burdensome Pigouvian tax. Policymakers should keep in mind that this could cause serious pain to the American economy. Additionally, those hit hardest would be the lower-income Americans who are already disproportionately harmed by the regressive nature of gasoline taxes. On the other hand, what convinces proponents of Pigouvian taxes that $1 per gallon would be enough to solve the plethora of harms that "under-priced" gasoline is said to create?[71]

Cleaning the Air?

Even if policymakers were able to solve the "knowledge problem" that plagues Pigouvian taxes, finding the optimal policy solution for environmental externalities from fossil fuels may require additional analysis. For instance, even if a

67 Tax Foundation calculations based on data from the U.S. Department of Labor.

68 N. Gregory Mankiw, *Wall Street Journal* (October 20, 2006).

69 See Ronald Coase, "The Problem of Social Cost" *Journal of Law and Economics. 3: 1-44.* (1960).

70 Thomas Sundqvist and Patrik Soderholm, "Valuing the Environmental Impacts of Electricity Generation: A Critical Survey," *Journal of Energy Literature* 8, no. 2, December 2002, p. 19.

71 This point is only strengthened by the fact that Professor Mankiw's plan would only phase in the gasoline tax increase at a rate of 10 cents per gallon annually.

government-appointed central actor could somehow ascertain the "correct" tax rate that internalizes negative externalities from pollution, gasoline is probably the incorrect base for that tax. If the objective is to internalize environmental costs from fossil fuels, why not focus on carbon emissions directly?

Ending Gridlock?

The idea of applying a Pigouvian-style tax to relieve traffic congestion is also misguided from a public policy perspective. While traffic congestion is undeniably a significant public policy problem, gasoline usage is not the proximate cause of traffic congestion. Absent congestion-based pricing for road usage, automobiles that ran on water wouldn't stop traffic from backing up.

Raising the gasoline tax to help ease traffic congestion would also be dreadfully inefficient, since it would tax a driver on a country road outside of Dodge City, Kansas at the same rate as it would tax a driver during rush hour on Interstate 495 – Washington, DC's traffic-congested "beltway."

Improving National Security?

In his final Pigouvian justification for increasing gasoline taxes, Mankiw argues that the gas tax is "an economic policy with positive spillovers to foreign affairs."[72] A common argument in support of this contention is that we should increase the gas tax to promote our "energy independence" from high-risk foreign sources of oil. While well intentioned, this argument neglects the important fact that the world market for oil is fully fungible. Even nations that supply all their own energy have been harmed by worldwide supply disruptions.

Average gasoline prices exceeded $3 per gallon in the wake of hurricane Katrina and again reached the $3 per gallon level before falling to about $2. Did we see traffic congestion magically disappear with the price of gasoline increasing $1 or more per gallon? Was America's national security strengthened by those high gasoline prices? Of course not – so Professor Mankiw's plan to raise gasoline taxes by $1 over a decade would almost certainly not accomplish his desired results.

Raising gasoline taxes for Pigouvian purposes advances a dangerous view of tax policy, where government attempts to use the tax code as a tool to centrally plan economic decisions. The fundamental purpose of taxes is to raise necessary revenue for government programs, not to micromanage a complex market economy with subsidies and penalties. The tax system's central aim should be to minimize distortions in the economy, and to interfere as little as possible with the decisions of free people in the marketplace.

If policymakers wish to salvage the reputation of gasoline taxes as the "best taxes," they would be wise to reestablish the linkage of gasoline taxes with road spending and reject superfluous Pigouvian levies.

Options for Reform

Today's system of highway finance casts serious doubt on the legitimacy of gasoline taxes in their current form. Elected officials throughout the country would be wise to examine options to bring gasoline taxes back into the framework of the benefit principle.

One of the most prominent proposals to reform the federal gasoline tax is a plan that would gradually "devolve" most of the responsibility of taxing gasoline and building roads to the states. In the 1990s former Congressman John Kasich and former Senator Connie Mack sponsored this legislation to give states more authority over the practice of taxing gasoline.

Congressman Jeff Flake and Senator Jim DeMint have recently introduced similar legislation in Congress that would reduce the federal tax on gasoline to 3.7 cents per gallon and the federal levy on diesel to 5.0 cents per gallon by 2013.[73] Congressman Scott Garrett has also introduced legislation that would allow for devolution of gasoline taxes to the states.[74]

Because many states constitutionally require gasoline taxes to adhere to the benefit principle, this transfer of tax authority would improve the tax system overall. The federal government's longstanding practice of determining the "optimal" ways to spend gas tax dollars from the states and the resulting inequity of transportation spending would end, thereby wiping out the constant struggle between donor and beneficiary states.

The pervasive and politically motivated practice of earmarking gasoline tax revenue for projects that are marginally related to transporta-

72 See note 9.

73 For more information on legislation introduced in the 109th Congress, including a full description of the Transportation Empowerment Act (H.R.5205 and S. 2512) see http://thomas.loc.gov

74 For more information on Representative Garrett's legislation (H.R.3497 in the 110th Congress) also see http://thomas.loc.gov

tion would be curbed at the federal level; as the federal government cedes more control over gasoline taxes and transportation spending, the significant costs of federal transportation requirements could correspondingly be reduced.

Under such a devolution plan, the respective states should ensure that the surge of new gasoline tax revenue would be reserved for road spending. As we mentioned in our discussion of the benefit principle, only 29 states have any requirement that directly links gasoline tax revenue to road construction and maintenance. State lawmakers are not immune from similar political pressures that federal lawmakers face to finance transportation based on political factors over transportation priorities. Therefore state lawmakers would be wise to draft constitutional requirements that ensure state gasoline tax revenue is exclusively directed to road construction and repair.

When looking to produce a "good" gas tax, lawmakers would be wise to follow the examples from the first state gas taxes, which were tremendously popular because they largely followed the benefit principle. Lawmakers should first make an evaluation of legitimate road construction and maintenance needs and then simply levy a tax on road users so that the revenue matches road spending. The tax on road users should retain a broad base by avoiding credits and deductions. An ideal gasoline tax should also avoid the numerous pitfalls of gasoline tax holidays.

The Future of Gasoline Taxes

What happens if the expanding use of fuel-efficient vehicles leads to a reduction in the usage of gasoline, while road usage remains constant – or even increases? Many government officials and public policy analysts are concerned about this scenario, because it would lead to a reduction of government revenue through various forms of gasoline taxes. The government promotion and subsequent increase of hybrid vehicle use in the United States serves as a good example.

New technology is unquestionably changing the equation for transportation funding in the 21st century. If benefit-principle taxation is going to survive, it may also have to adapt to navigate these uncharted waters. For instance, Oregon is experimenting with a pilot project that charges road users based on the actual mileage they drive, rather than using gasoline consumption as a rough proxy for miles traveled.

Oregon's pilot project uses global positioning system (GPS) technology to record the number of miles driven within the state. The 280 individuals who volunteered for the test program are charged 1.2 cents for each mile they drive rather than paying traditional gasoline taxes.[75] Drivers are charged a higher amount for driving in metropolitan areas during rush hour. While this technology is appealing to some transportation officials, many have grave concerns with giving the government this additional "big brother" authority.

Others have suggested the expanded use of tolls to fund road construction and repair. Secretary of Transportation Mary Peters appears to understand the quickly changing nature of highway finance and is a proponent of expanding the use of tolls to assist in highway funding. Peters stated, "You just can't depend on the federal government to bring the money in that was around when the interstate system was first built."[76]

Expanding the use of tolls and private roadways would also allow for congestion-based pricing for road use. This approach may in fact be the only effective means to mitigate the significant problem of road congestion that many major metropolitan areas face today. The first experiment with high occupancy/toll lanes (HOT lanes) was in metro Los Angeles on State Route 91. After witnessing the success of that pilot project, which allowed drivers to pay electronic tolls to use a private roadway that utilized unused highway capacity, the popularity of the idea spread.

The ever-increasing support for alternative financing of highways is not surprising, considering the popularity of the original HOT lane project in California, where 91 percent of users have a favorable experience.[77] According to a recent survey by the American Automobile Association, while 70 percent of American motorists think more money is needed to improve roads, only 21 percent favored increasing gasoline taxes to fund the improvements.[78] However, the poll found that the top choice to provide needed funds was tolling, with a full 52 percent in support.

75 See Jeffrey Leib, "Oregon may get some mileage out of fee experiment," *The Denver Post,* (June 1, 2006).

76 See Deb Riechmann, "Bush Taps Peters for Transportation," The Associated Press, (September 5, 2006).

77 Ted Balaker and Sam Staley, "The Road More Traveled: Why The Congestion Crisis Matters More Than You Think, And What We Can Do About It," Roman and Littlefield Publishers, 2006.

78 "AAA Survey Finds Tolls Beat Taxes," Surface Transportation Innovations, Reason Foundation, Issue No. 38, December 2006.

Public opinion on the merits of tolling has advanced dramatically since the early days of the Highway Trust Fund. General Lucius Clay, who chaired the federal panel responsible for choosing between tolling and freeways, once feared that "a federal toll road system would precipitate a revolution in the western states."[79]

Considering today's strong public support for alternative transportation solutions, lawmakers created a provision in the 2005 highway bill (SAFTEA-LU) that allowed for 15 "Express Toll Lanes" pilot projects, which will allow the addition of value-priced lanes to congested interstates.[80] This federal action only adds to the momentum of private financing of roadways. According to the Reason Foundation, privately financed roadways (including HOT lanes) are becoming increasingly popular among localities as well.

Future advances in technology may eventually require different forms of user taxes to fund roads.[81] However, even if vehicles ran completely on vegetable oil in 25 years, benefit principle taxes should be levied on that fuel to ensure road users bear the cost of the roads they use. The ever-expanding use of value-priced roads, such as HOT lanes, is one of the most promising developments for the future of benefit-principle taxation.

Conclusion

For the past 100 years, American motorists have been enamored with better roadways for public use, and the benefits of increased personal mobility cannot be overstated. Gasoline taxes provided a vast majority of the funding required to bring the United States into the automobile age and build the interstate highway system. For generations, Americans thought of gasoline taxes as the price of mobility in America; however, with increasing mismanagement of gasoline tax funds at the state and federal levels, drivers see less and less connection between gasoline taxes at the pump and spending to build and maintain roads.

Gasoline taxes in America were built upon the premise that they would serve as a user fee for road use and if the benefit principle is to work, governments must ensure that gasoline tax dollars are spent to build and maintain roads for the benefit of users who pay the gasoline tax.

The early gasoline taxes in the states proved that American motorists understand the utility of gasoline taxes when the revenue is spent to build and improve roadways. Unfortunately, today many lawmakers at the state and federal level are allowing gasoline tax dollars to be spent on programs that have little or nothing to do with transportation needs – let alone highway needs.

Current gasoline taxes have unquestionably departed from their historical justification which was rooted in the benefit principle of taxation. The somewhat recent acceleration in the movement away from the benefit principle is to the considerable detriment of sound tax policy, quality public roads, millions of motorists and the overall integrity of government "trust funds."

If benefit-principle taxation is to survive as the foremost source of road funding, lawmakers must insist on more oversight to ensure revenue from gasoline tax "user fees" does not support "bridges to nowhere," or museums, or graffiti removal, but is instead used to build the roads of the 21st century, providing a fair and equitable transportation system for all American motorists.

79 James A. Dunn Jr., The Importance of Being Earmarked: Transport Policy and Highway Finance in Great Britain and the United States, *Comparative Studies in Society and History*, Vol. 20, No. 1, January 1978, pp. 29-53

80 Robert Poole, in, "The Road More Traveled: Why The Congestion Crisis Matters More Than You Think, And What We Can Do About It," Roman and Littlefield Publishers, 2006.

81 Richard E. Wagner Ph.D., "State Excise Taxation: Horse-and-Buggy Taxes in an Electronic Age," *Tax Foundation Background Paper,* No. 48 (May 2005).

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