

DOES IT PAY TO WORK IN THE UNITED STATES?

Jagadeesh Gokhale and Laurence J. Kotlikoff***

Introduction

Does it pay to work? That is a tough question to answer. In general, more work means a higher income and, therefore, higher taxes. A higher income usually also leads to fewer entitlement benefits (such as Food Stamps). Moreover, the effects of working today are not limited to today's higher taxes and today's loss of entitlement benefits. Income earned today also affects future taxes and future benefits. In particular, there are five important links between today's decisions and their future consequences:

- Earning more today typically leads to more saving and, therefore, more assets and more income from assets in the future; however, that higher future capital income will result in higher future capital income taxes.
- More assets and more income in the future will also mean fewer future benefits from entitlement programs that are linked to the assets and the income of the recipients (such as Medicaid).
- Earning more today will typically lead to more consumption in the future, because asset accumulation makes more consumption possible; however, that higher consumption will result in higher consumption taxes.
- Earning more income today will lead to higher Social Security benefits in the future.
- More non-Social Security income in the future, caused by higher earnings and more saving today, will increase the tax on future Social Security benefits.

1. Calculating the costs and benefits of working

As the above list indicates, understanding the full consequences of deciding to work requires taking into account all future taxes workers will pay plus all future transfer payments workers will lose from going to work. To illustrate this lifetime tax analysis we have chosen a representative, two-earner couple. The couple is assumed to rent in the early years and eventually buy a house. They have two children, who grow up and attend college. As a result, the couple has an opportunity

* Senior Economic Advisor, Federal Reserve Bank of Cleveland and Visiting Fellow, American Enterprise Institute.

** Professor of Economics, Boston University and Research Associate, National Bureau of Economic Research.

This paper is an updated version of "Does it Pay to Work?" by Jagadeesh Gokhale, Laurence J. Kotlikoff and Alexey Sluchinsky, available at <http://www.nber.org/papers/w9096>

to interact with the tax system in numerous ways, e.g., taking advantage of the mortgage interest deduction and the child tax credit, deciding whether to itemize deductions, paying FICA taxes, paying state income taxes, and using their after-tax earnings to pay sales taxes.

We assume that couples enter the labor market at a specific wage and that their income grows by 1 percent per year in real terms, and consider this couple at different income levels. For example, if they earn a low income they benefit from the Earned Income Tax Credit and the credit for retirement account contributions. If they earn a high income, they are penalized by the phase-out of itemized deductions and the alternative minimum tax. We approach entitlement benefits in a similar way. If they earn a low-income, the family qualifies for a host of “welfare” benefits – including cash assistance, Food Stamps, Medicaid, etc. If they earn a higher income or have assets, these benefits phase out.

Our approach is also probabilistic. In any given year, there is some chance one or both spouses will die. The death of a spouse triggers entitlement benefits for the remaining spouse and the children (such as survivors benefits under Social Security). These benefits are also affected by what the deceased spouse was earning. We calculate expected taxes and expected benefits for the couple. We do so by calculating the taxes and benefits for each possible lifetime. To get an expected result, we sum over all possible lifetimes, each weighted by its probability of occurring.

Our approach is also comprehensive. We include every major tax and transfer program. In the case of taxes, we include employer-paid taxes, whether they be corporate income taxes or employer-paid FICA taxes.

1.1 The complexity of the U.S. tax and transfer benefit programs

It is difficult to exaggerate the complexity of the taxes and transfer programs facing American workers. Mastering just the federal income tax represents a major challenge because it has so many special provisions. The list includes the inflation-indexation of tax brackets, the partial – but graduated – taxation of Social Security benefits above two non-inflation-indexed thresholds, the treatment of retirement account contributions and withdrawals, the phase-out of itemized deductions, the earned income tax credit, the child tax credit, the alternative minimum tax, and the recently legislated credit to low-income households for contributing to retirement accounts.

If the federal income tax weren’t hard enough to follow, almost all states have income taxes with their own special provisions. For example, Massachusetts has a special exemption for the elderly, a child deduction, a rental deduction, and a deduction for employee-paid payroll taxes. Compared to these taxes, the Federal Insurance Contributions Act (FICA) payroll tax may seem straightforward.

Thanks to the growth of a variety of interrelated social welfare programs, the U.S. system of transfer benefits has become extremely complicated. It includes such

programs as Food Stamps, Medicaid, traditional “welfare” (now called Temporary Assistance for Needy Families), Supplemental Security Income (SSI), Housing Assistance Programs, the Low-Income Home Energy Assistance Program (LIHEAP), the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), etc.

1.2 *Software program*

Understanding the effective net tax on work requires an intertemporal model capable of carefully determining tax and transfer payments at each stage of a person’s life cycle, based in part on economic choices in prior periods. This study uses *ESPlanner*, a financial planning software program developed by Economic Security Planning, Inc., to study the net tax levied on workers with different earnings capacities. *ESPlanner* smooths households’ living standards subject to constraints on their capacities to borrow. In so doing, it makes highly detailed, year-by-year federal and state income tax and Social Security benefit calculations.

1.3 *Reporting the results*

In expressing the results of this study, we have chosen multiples of the minimum wage. A full-time worker earning the minimum wage of \$5.15 an hour will earn \$10,700 a year. When both spouses earn the minimum wage, their family income will be \$21,400. If both spouses earn twice the minimum wage, (at \$10.30 an hour), their joint annual income will be \$42,800. And so forth.

2. **Lifetime taxes and lifetime transfer benefits**

In order to assess the consequences of going to work, we need to calculate over a lifetime the extra taxes paid and extra benefits received or sacrificed as a result of that decision. In what follows, all lifetime taxes and transfer benefits are reported as present values.

2.1 *Lifetime taxes*

Table 1 presents the couple’s expected lifetime taxes and benefits, measured in current dollars. If we ignore the lowest income levels, the table shows:

- A couple earning twice the minimum wage can expect to pay more than \$300,000 in taxes over the course of their lifetime – an amount equal to about seven times their initial annual income.
- A couple earning in the range of \$100,000 can expect to pay close to a million dollars in lifetime taxes – an amount equal to almost ten times their initial annual earnings.

Table 1

Lifetime Taxes and Benefits by Income
(*thousands of constant 2000 US Dollars*)

Multiple of the Minimum Wage	Initial Annual Household Earnings	Lifetime Taxes	Lifetime Benefits	Lifetime Taxes as a Multiple of Annual Initial Earnings	Lifetime Benefits as a Multiple of Initial Annual Income	Lifetime Taxes as a Multiple of Lifetime Benefits	Average Net Tax Rate (Lifetime Net Taxes/Lifetime Earnings; percent)
0	0.0	0.0	489.0	n.a.	n.a.	n.a.	n.a.
1	21.4	101.5	268.6	4.7	12.6	0.38	-32.2
1.5	32.1	206.4	109.1	6.4	3.4	1.89	14.8
2	42.8	302.3	93.7	7.1	2.2	3.23	22.9
3	64.3	509.6	90.7	7.9	1.4	5.62	30.1
4	85.7	746.2	104.1	8.7	1.2	7.17	34.4
5	107.1	994.5	110.6	9.3	1.0	8.99	37.8
6	128.5	1271.0	116.8	9.9	0.9	10.88	41.0
7	150.0	1533.0	123.1	10.2	0.8	12.45	42.9
8	171.4	1785.4	127.7	10.4	0.7	13.98	44.2
9	192.8	2014.9	127.7	10.5	0.7	15.78	45.1
10	214.2	2242.0	127.7	10.5	0.6	17.56	45.7
15	321.4	3435.6	127.7	10.7	0.4	26.90	48.4
20	428.5	4601.4	127.7	10.7	0.3	36.03	49.6
30	642.7	6933.5	127.7	10.8	0.2	54.30	50.8
40	857.0	9265.7	127.7	10.8	0.1	72.56	51.4

Source: Authors' Calculations.

- At higher levels of income, expected lifetime taxes tend to be between ten and eleven times initial annual earnings, regardless of the amount earned.

On the tax side, then, the U.S. fiscal system is mildly progressive. As a percent of lifetime income, the tax burden tends to rise modestly as income rises, and then levels off once income gets much above \$100,000.

2.2 *The composition of lifetime taxes*

One reason why the overall tax system is not more progressive is that people pay different types of taxes at different income levels. Although the rate structure of the federal income tax system is fairly progressive, payroll taxes tend to be proportional to income (although typically capped at a certain income level) and consumption taxes tend to be regressive – taking a larger portion of family income, the lower the income level. In general, the tax burden borne by lower income families tends to be weighted toward proportional and regressive taxes. As Table 2 shows:

- For a family earning \$32,100 a year (1.5 times the minimum wage), half the taxes paid are payroll taxes and only 30 per cent are paid in the form of income taxes.
- By contrast, for a family earning \$321,400 (15 times the minimum wage), three-fourths of all taxes are paid in the form of income taxes, and less than one in five tax dollars are paid in the form of payroll taxes.

2.3 *Lifetime transfer benefits*

Returning to Table 1, note that a couple in which both spouses initially earn the minimum wage and remain at the bottom of the income ladder throughout their work lives, can expect to pay more than \$100,000 in taxes over their lifetime. However, they can expect to receive back almost \$270,000 in benefits. Hence, a low-income household gets a very good return on its taxes. (Note however, that it is very difficult to work fulltime and earn only a minimum wage income for four to five decades). Going beyond the lowest income level, Table 1 shows that:

- A couple earning twice the minimum wage (\$42,800) can expect to receive about \$94,000 in lifetime entitlement benefits, measured in current dollars.
- At four times the minimum wage (\$85,700) expected entitlement benefits rise to \$104,000.
- After an income level of about \$150,000, they reach about \$127,000, where they remain, regardless of the size of the family's income.

Unlike taxes, which tend to be proportional to income once a certain income level is reached, transfer benefits tend to be constant once a certain income level is reached. This means that benefits as a percent of income tend to fall as income rises.

Table 2
Components of Lifetime Taxes as a Percent to Lifetime Earnings and Total Lifetime Taxes

Multiple of the Minimum Wage	Initial Annual Household Earnings (thousands of constant 2002 US Dollars)	As A Percent of Lifetime Earnings			As A Percent of Total Lifetime Taxes		
		Payroll Taxes	Income Taxes (Personal plus Corporate)	Consumption Taxes	Payroll Taxes	Income Taxes (Personal plus Corporate)	Consumption Taxes
1	21.4	13.9	0.1	6.4	68.1	0.5	31.4
1.5	32.1	13.9	8.3	5.6	50.0	29.9	20.1
2	42.8	13.9	11.3	5.2	45.7	37.2	17.1
3	64.3	13.9	15.6	4.8	40.5	45.5	14.0
4	85.7	13.9	19.3	4.4	37.0	51.3	11.7
5	107.1	13.9	22.0	4.2	34.7	54.9	10.5
6	128.5	13.9	24.9	4.0	32.5	58.2	9.3
7	150.0	13.9	26.5	3.8	31.4	60.0	8.6
8	171.4	13.6	27.7	3.8	30.2	61.4	8.4
9	192.8	12.4	29.3	3.7	27.3	64.5	8.1
10	214.2	11.5	30.6	3.7	25.1	66.8	8.1
15	321.4	8.7	35.2	3.6	18.3	74.1	7.6
20	428.5	7.3	37.2	3.6	15.2	77.3	7.5
30	642.7	5.8	39.4	3.6	11.9	80.7	7.4
40	857.0	5.0	40.4	3.5	10.2	82.6	7.2

Source: Authors' Calculations.

- At twice the minimum wage, couples can expect to get back about \$1 in transfer benefits for every \$3 they pay in taxes.
- At four times the minimum wage, couples can expect to get back less than one in seven dollars they pay in taxes.
- And at about \$200,000 in income, they get back less than one in sixteen.

2.4 *Composition of transfer benefits*

The principle reason why transfer programs tend on the whole to be more progressive than the tax system is the existence of programs that are means tested. Although rich and poor alike participate in Medicare and Social Security, only low-income families have access to means-tested benefits, the most important of which is Medicaid. As Table 3 shows:

- About 70 per cent of all transfer benefits received by a couple earning the minimum wage over the course of their work life consists of Medicaid benefits; and only one in four dollars is in the form of Social Security and Medicare benefits.
- By contrast, a couple earning \$150,000 (seven times the minimum wage) receives all of its transfer benefits in the form of Social Security (73 per cent) and Medicare (27 per cent).

2.5 *Policy implications*

From these observations, three conclusions with important public policy implications can be drawn. First, most Americans can expect to get back only a fraction of what they pay in taxes in the form of entitlement benefits (although they do receive other government services that are presumably worth paying for). Second, the system as a whole is quite progressive – with low- and moderate-income families doing much better in terms of their relationship with the state than higher income families. Third, most of the progressivity in the U.S. fiscal system comes on the benefit side rather than on the tax side of fiscal policy.

One way to appreciate the amount of overall progressivity in the system is to calculate an average lifetime net tax rate, defined as the ratio of lifetime taxes net of any transfer benefits received to lifetime income. The result of that calculation is shown in Figure 1. As in Table 1, Figure 1 shows that a couple in which both spouses earn the minimum wage over the whole of their work life can expect to receive far more in transfer benefits (including their EITC refund) than they will pay in taxes. (Yet, as noted above, it is very difficult to stay at the minimum wage over one's entire work life.) At 1.5 times the minimum wage, the couple experiences a positive net tax burden, however, and from that point on those who earn more pay more of their income (on net) to the state. Although progressive overall, it is only mildly so at higher income levels.

Table 3
The Distribution of Transfers by Type and Household Earnings

Multiple of the Minimum Wage	Initial Annual Household Earnings (thousands of constant 2000 Dollars)	Lifetime Benefits	Share of Lifetime Benefits (percent)			
			Social Security	Medicare	Medicaid	Other
0	0.0	489.0	0.0	6.9	51.7	41.4
1	21.4	268.6	11.4	12.6	70.0	6.0
1.5	32.1	109.1	33.9	31.0	33.5	1.6
2	42.8	93.7	46.4	36.1	17.1	0.4
3	64.3	90.7	62.4	37.3	0.0	0.3
4	85.7	104.1	67.3	32.5	0.0	0.2
5	107.1	110.6	69.3	30.6	0.0	0.1
6	128.5	116.8	71.1	28.9	0.0	0.0
7	150.0	123.1	72.5	27.5	0.0	0.0
8	171.4	127.7	73.5	26.5	0.0	0.0
9	192.8	127.7	73.5	26.5	0.0	0.0
10	214.2	127.7	73.5	26.5	0.0	0.0
15	321.4	127.7	73.5	26.5	0.0	0.0
20	428.5	127.7	73.5	26.5	0.0	0.0
30	642.7	127.7	73.5	26.5	0.0	0.0
40	857.0	127.7	73.5	26.5	0.0	0.0

Source: Authors' calculations.

3. Lifetime marginal net tax rates

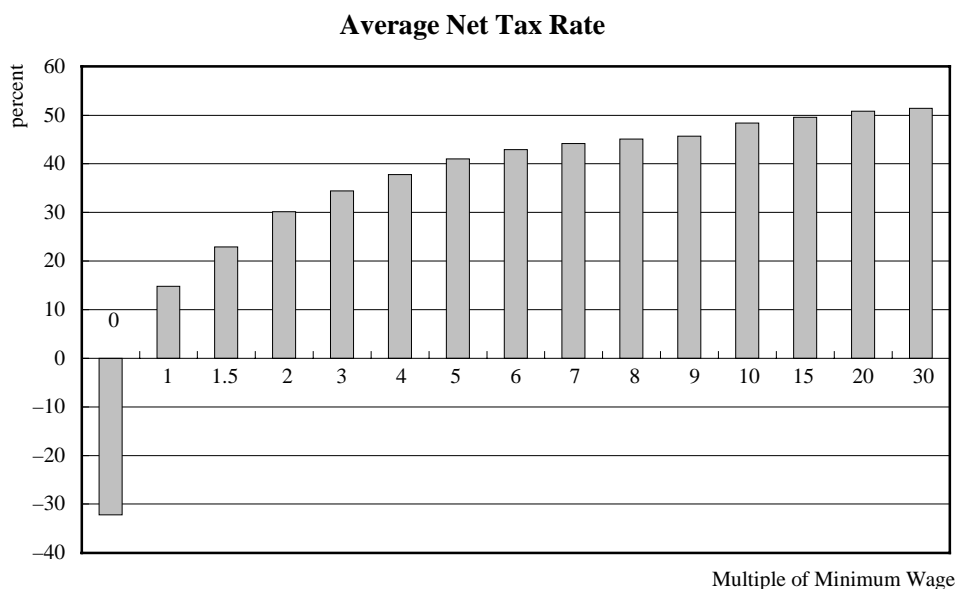
To those for whom progressivity is an important value, these results should be heartening. The disappointment is that this progressivity comes at a terrible price. Many entitlement benefits, it turns out, are available to people whether they work or not. And when they decide to work, the withdrawal of benefits plus the imposition of taxes creates very high marginal tax rates.

3.1 Working versus Not Working

To calculate marginal tax rates we ignore benefits that people are entitled to whether or not they work. Instead we want to identify any changes in taxes paid and benefits received as a result of the decision to work rather than not work. The additional taxes paid plus the net reduction in transfer benefits received divided by the income from working is called the marginal net tax rate. These are depicted in Table 4.

The first thing to note is that all full-time working households face marginal net work-tax rates in excess of 50 per cent! In going to work, all American households hand over half or more of every dollar they earn to state and federal government in taxes paid net of benefits received. Second, note that the lowest income households face the highest marginal net tax rates:

Figure 1



Source: Authors' calculations.

Table 4

Marginal Net Tax Rates on Working Full- and Part-Time
(percent)

Multiple of the Minimum Wage	Full-Time Marginal Net Work/Tax Rate	Change in Taxes	Change in Benefits	Half-time Marginal Net Work/Tax rate	Marginal Net Tax Rate on Switching from Part- to Full-Time Work
1	66.5	20.2	44.4	36.4	96.8
1.5	80.6	27.5	51.1	55.0	106.3
2	72.2	30.1	39.9	66.5	77.9
3	63.0	34.0	26.9	80.6	45.5
4	59.1	37.3	19.5	72.2	46.0
5	57.5	39.8	15.3	67.1	48.0
6	57.5	42.5	12.5	63.0	51.9
7	57.0	44.0	10.6	60.7	53.3
8	56.6	44.8	9.1	59.1	54.0
9	56.1	45.1	8.1	58.1	54.1
10	55.7	45.4	7.4	57.5	53.8
15	55.2	47.1	5.0	56.8	53.5
20	54.7	47.6	3.7	55.7	53.6
30	54.2	48.2	2.6	55.2	53.2
40	54.0	48.3	1.8	54.7	53.3

Source: Authors' calculations.

- The marginal net tax rate of households earning 1.5 times the minimum wage is 81 per cent; *families at this income level get to keep less than one-fifth of the income they earn.*
- At two times the minimum wage the marginal net tax rate is 72 per cent; *these families get to keep less than 30 cents out of each dollar they earn.*

Third, marginal net tax rates actually decline as income rises. On the whole, marginal net tax rates tend to be regressive, imposing the highest burdens on those with the lowest earnings.

Perhaps the most striking feature of Table 4 is that the minimum wage household faces a 67 per cent net marginal tax on working full time. This family gets to keep only one in every three dollars it earns on net! The principal reason is that households who don't work receive very substantial transfer benefits. Many of these benefits are either lost entirely or substantially reduced when the household goes to work full time. In addition, the household must pay federal income, state income, and FICA taxes on its earnings. Offsetting these factors is the increase in Social Security benefits associated with working and the availability of the earned income tax credit.

Households earning 1.5 times the minimum wage also lose benefits when they go to work. But they lose essentially all of their earned income tax credits. In addition, their higher earnings limit the degree of progressivity of the Social Security benefit schedule.¹ This is the reason marginal net tax rates are higher for households earning 1.5 times the minimum wage than for those with higher incomes.

3.2 *The composition of marginal net tax rates*

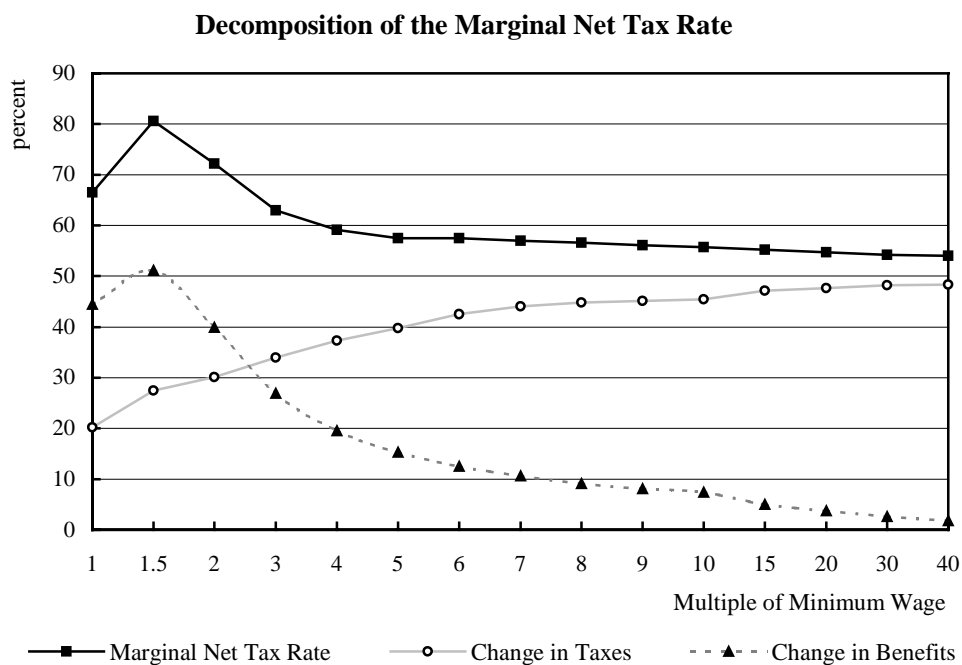
Figure 2 also shows the composition of marginal net tax rates for couples at different income levels. Note that the loss of benefits is more important the lower the family's income. Conversely, direct taxes on income become more important the higher the family's income. For example:

- At \$32,100 (1.5 times the minimum wage), two-thirds of the marginal net tax rate consists of the loss of transfer benefits, while a little more than one in five dollars is lost to income and payroll taxes.²
- At \$64,300 (3 times the minimum wage) slightly more half of the marginal net tax rate consists of additional income and payroll taxes, while slightly less than half arises from lost benefits.

¹ The loss of benefits is, of course, experienced by higher earning couples when they go to work. But the higher the level of earnings, the smaller is this loss as a share of the increase in spending associated with working.

² Note: These are payroll taxes net of increases in Social Security benefits.

Figure 2



Source: Authors' calculations.

- At \$321,400 (15 times the minimum wage), four in five dollars of the marginal net tax is lost to income and payroll taxes.

3.3 Working part-time

Table 4 also shows marginal net tax rates for those who go from no work to part-time work and from part-time to full-time work. As the table reveals, fiscal policy discourages full-time work more than half-time work for low and moderate income couples:

- At the minimum wage, the marginal net tax rate on going to work half-time is 36 versus 67 per cent for working full-time.
- At 1.5 times the minimum wage, the rate for half-time work is 55 versus 81 per cent for full-time work.
- At 2 times the minimum wage, the rate for half-time work is 67 versus 72 per cent for full-time work.

Fiscal policy, in other words, encourages families at the bottom of the income ladder to work half-time rather than full-time, if they work at all. However, at higher income levels, these incentives are reversed.

- A family earning 3 times the minimum wage faces a marginal net tax rate of 81 per cent for half-time work versus 63 per cent for full-time work.
- At 4 times the minimum wage, the rates are 72 per cent for half-time versus 59 per cent for full-time.

Another way of looking at this issue is to ask what happens to people who switch from working half-time to full-time. As the table shows:

- A minimum wage couple who switches from half-time to full-time work will lose 97 cents out of every extra dollar they earn.
- At 1.5 times the minimum wage, the couple will lose \$1.06 for every \$1.00 they earn; for this couple, *working more literally means having less*.

3.4 Marginal net tax rates at different ages

Table 5 shows marginal net tax rates for couples at different ages. Note that at higher income levels, marginal net tax rates are roughly the same regardless of the amount earned. However, at lower-income levels, there is a significant difference. Specifically:

- At 1.5 times the minimum wage, the marginal net tax rate is 60 and 61 per cent for couples ages 25 and 35 respectively.
- However, at ages 55 and 65, these rates drop to 14 and 22 per cent respectively.

The difference seems to stem from those tax and spending programs that relate to children and are means tested. These provisions steeply raise marginal net tax rates for young couples. Ironically, fiscal policies designed to help children are the ones most responsible for discouraging low and moderate-income families from working.

4. Conclusion

To understand lifetime average and marginal net tax burdens, we have included in fine detail every major tax and transfer program affecting American households. What emerges is a picture of a fiscal system with six characteristics:

- The U.S. fiscal system is highly progressive over the bottom half of the income distribution. Couples working full-time and earning the minimum wage get back 32 cents in benefits (net of taxes) for every dollar they earn; while couples earning \$64,000 (or 3 times the minimum wage) pay 30 cents in taxes (net of benefits) per dollar earned. The system is only mildly progressive over the top half of the income distribution, however.

Table 5
Marginal Net Tax Rates on Working At Different Ages

Multiple of the Minimum Wage	Initial Annual Income (thousands of constant 2002 US Dollars)	Household's Age				
		25	35	45	55	65
1	21.4	9.7	23.8	16.6	12.6	24.5
1.5	32.1	59.6	61.1	16.5	14.1	21.6
2	42.8	52.8	52.9	9.4	10.3	17.6
3	64.3	47.9	48.2	14.8	31.7	35.2
4	85.7	47.1	46.7	15.2	37.9	40.7
5	107.1	46.7	45.5	16.0	40.3	40.6
6	128.5	48.4	46.2	17.7	43.4	44.9
7	150.0	48.3	45.2	19.6	45.3	46.5
8	171.4	47.9	44.9	20.6	45.5	46.7
9	192.8	47.6	43.2	20.2	44.6	48.3
10	214.2	47.4	42.3	19.5	45.6	48.2
15	321.4	47.9	41.6	25.8	45.2	45.3
20	428.5	45.0	40.8	32.2	44.3	43.8
30	642.7	44.3	33.6	44.7	44.6	43.6
40	857.0	44.1	27.1	43.8	43.3	42.1

Source: Authors' calculations.

- Most of the progressivity in the U.S. fiscal system comes from means tested spending programs, rather than taxes, and these are concentrated at the bottom of the income ladder.
- Workers at every income level face very steep lifetime marginal tax rates. In fact, virtually all full-time American workers lose more than half of their earnings in taxes and foregone transfer benefits.
- The very highest marginal net tax rates are imposed on the lowest-income earners, largely because of the withdrawal of means-tested tax and spending benefits. Indeed, working couples in the bottom half of the income distribution only get to keep a third or less of the income they earn, on net.
- If low-income households work at all, the U.S. fiscal system strongly encourages part-time work rather than full-time work. Couples earning 1.5 times the minimum wage will actually reduce their standard of living if they work full-time rather than half-time.
- The principal reason for very high marginal net tax rates for low-income households is the existence of means tested tax and welfare benefits tied to children. For example, a 25-year-old couple with children, earning 1.5 times the minimum wage, will give up 60 cents for every dollar earned. However, the marginal net tax rate on that same couple drops to 14 per cent at age 55, when they are well past the child-rearing years.

Overall, our system is very generous to those at the bottom of the income ladder. But the price of that generosity is an incentive structure that strongly discourages labor market participation among those with the lowest skills.

REFERENCES

- Altig, D., A. Auerbach, K. Smetters and J. Walliser (2001), "Simulating Fundamental Tax Reform in the U.S.", forthcoming in *The American Economic Review*.
- Boskin, M.J., L.J. Kotlikoff, D.J. Puffert and J.B. Shoven (1987), "Social Security: A Financial Appraisal Across and Within Generations," *National Tax Journal*, vol. 40, No. 1, March, pp. 19-34.
- Bradford, D.F. (ed.) (1995), *Distributional Analysis of Tax Policy*, Washington, D.C., AEI Press.
- Browning, E.K. (1995), "Tax Incidence Analysis for Policy Makers," in D. Bradford (ed.), *Distributional Analysis of Tax Policy*, Washington, D.C., The AEI Press.
- Caldwell, S.B., M. Favreault, A. Gantman, J. Gokhale, T. Johnson and L.J. Kotlikoff (1999), "Social Security's Treatment of Postwar Americans," in J. Poterba (ed.), *Tax Policy and the Economy*, 13, pp. 109-48.
- Fullerton, D. and D.L. Rogers (1995), "Distribution Effects on a Lifetime Basis," in D.F. Bradford (ed.), *Distributional Analysis of Tax Policy*, Washington, D.C., AEI Press, pp. 262-94.
- (1993), *Who Bears the Lifetime Tax Burden?*, Washington, D.C., The Brookings Institution.
- Gokhale, J. and L.J. Kotlikoff (2002), "Social Security's Treatment of Postwar Americans: How Bad Can It Get?" in M. Feldstein and J. Liebman (eds.), *The Distributional Aspects of Social Security and Social Security Reform*, Chicago, University of Chicago Press, pp. 207-62.
- (2003), "Who Gets Paid to Save," forthcoming in J. Poterba (ed.), *Tax Policy and the Economy*, Cambridge, MA, MIT Press.
- Hubbard, G.R., J. Skinner and S.P. Zeldes (1995), "Precautionary Saving and Social Insurance," *Journal of Political Economy*, Vol. 103, No. 2, April, pp. 360-99.
- Hurd, M.D. and J.B. Shoven (1985), "The Distributional Impact of Social Security," in David Wise (ed.), *Pensions, Labor, and Individual Choice*, Chicago, IL, University of Chicago Press.
- Myers, R.J. and B.D. Schobel (1993), "An Updated Money's-Worth Analysis of Social Security's Retirement Benefits," *Transactions*, Society of Actuaries, No. 44, pp. 247-75.
- Pechman, J. (1985), "Who Paid the Taxes, 1966-1985," Washington, D.C., The Brookings Institution.
- (1990), "The Future of the Income Tax," *American Economic Review*, March, pp. 1-20.
- Poterba, J. (1989), "Lifetime Incidence and the Distributional Burden of Excise Taxes," *American Economic Review*, May, pp. 325-30.