Scenarios and Results

We analyze the economywide impacts for three scenarios:

(1) Increase in labor supply from public assistance recipients joining the labor force;

(2) Recession; and

(3) Economic growth.

The macroeconomic assumptions that accompany each scenario are presented in table 1. Each scenario focuses on the low-skill and other entry-level labor markets. Base data for households, industry, and labor occupations, from which simulation results can be compared, are presented in tables 2-4.

Increase in Labor Supply from Welfare-to-Work

Between 1996 and 2000, the caseload for AFDC-TANF and the FSP fell, with many leavers entering the labor force. We use a CGE model to explore the potential magnitude of the labor market impacts of the reduction in public assistance caseload and the move into the labor force. Our simulation experiments provide a qualitative finding of whether the labor market impacts are large or small. Using simulation analysis is especially useful in studying the impact of a policy change because policy changes happen in a dynamic economy without the ability to do a controlled experiment. The simulation also allows us to isolate the impacts of the policy change.

For our scenario analysis with the CGE simulation model, we assume an exogenous increase to the labor supply by moving into the labor force some of the nonworking adults of low-income households who are receiving public assistance from AFDC-TANF and/or the FSP. We assess the labor market impact from the influx of low-skill workers while allowing aggregate capital stocks to expand and keeping the rate of return to capital at the rate in the base.[12] We assume that those who leave the programs and take a job take a full-time job and lose all of their program benefits from food stamps, AFDC-TANF, and any unemployment insurance. We further assume

[12]With fixed aggregate capital, the low-skill wage impacts are larger by 8 percent. With capital stocks fixed by sector of production, the low-skill wage impacts are larger by 13 percent.

Table 1—Macroeconomic assumptions used in scenarios

	Scenario			
	Labor supply welfare reform	1996-2000 growth	Average recession	Trend growth, 1957-2000
Assumptions	1a and 1b 2a and 2b	1c and 1d	3	4
	Average annual percent change			
Growth rates for:				
Real GDP	1.6	4.1	-1.9	3.4
Real fixed investment	0	9.1	-14.4	4.6
Real exports	1.4	6.8	1.5	6.5
Real imports	1.3	12.4	-7.6	6.9
Real capital stocks	1.9	3.3	-2.0	3.1
Employment	1.8	2.3	-1.3	2.1
Nominal exchange rate	0	5.4	10.0	5.4

Source: ERS tabulations of data from U.S. Department of Commerce, Bureau of Economic Analysis.

that other program benefits, such as the earned income tax credit (EITC) and child care, do not adjust.[13]

We develop two sets of two scenarios, for sensitivity analysis purposes. First, we distinguish scenarios by the number of public assistance recipients entering the labor force. In one set of scenarios, we assume that the labor supply increases by 2.4 million people who leave AFDC-TANF and/or the FSP and enter the labor force between 1996 and 2000 (see appendix A). This scenario assumes that 70 percent of those leaving AFDC-TANF take a job. In a second set of scenarios, we assume that 50 percent of those leaving AFDC-TANF take a job, which results in a 2-million-worker increase in the labor supply. These two estimates of AFDC-TANF leavers taking jobs are high and low estimates. By using both assumptions, we can get a sense of the range of the impact.

Second, we distinguish the types of occupations taken by public assistance recipients entering the labor force. For each of the scenarios characterized by the total change in labor supply, we first assume that all the new

[13]The full loss of AFDC and food stamps overstates the loss of transfer income, and the absence of any adjustment to EITC and other programs, such as child care and Medicaid, understates any increases in program transfers. The assumption of taking a full-time job overstates the increased earnings for some workers who will take part-time jobs. We do not take into account any work-related expenses, such as commuting or child care costs.

Table 2—Household characteristics, 1996 base values

Characteristic	Consumer units	Food stamp benefits	Other government transfers	Income tax	Labor supply	Labor income	Net income[1]
	Thousands	--------------$ billions---------------			*Million people*	------$ billions------	
Total households	108,828	21.9	1,020.1	886.9	131.4	3,994.5	5,447.4
By income group:							
Low-income	23,321	21.9	204.0	1.8	14.9	96.2	322.9
Welfare, no work	3,840	10.9	60.9	0	0	0	71.8
Welfare, with work	3,518	11.0	52.2	0.4	3.7	24.4	87.2
Nonwelfare, working and not working	15,963	0	91.0	1.5	11.2	71.7	164.0
Mid-income	58,090	0	507.6	213.4	51.8	1,624.1	1,986.7
High-income	27,418	0	308.5	671.7	64.7	2,274.3	3,137.8
By family type:							
Single-parent	10,633	13.2	94.3	26.6	9.2	207.2	317.6
Low-income	5,454	13.2	65.7	.3	3.4	27.1	105.6
Welfare, no work	1,494	6.5	26.4	0	0	0	32.9
Welfare, with work	1,844	6.7	29.6	.1	1.4	11.1	47.1
Nonwelfare, working and not working	2,116	0	9.8	.2	2.0	16.0	25.6
Mid-income	2,552	0	15.0	3.4	1.7	50.0	61.8
High-income	2,628	0	13.5	22.8	4.1	130.0	150.2
Other family types	98,195	8.7	925.8	860.3	122.2	3,787.4	5,129.8
Low-income	17,867	8.7	138.3	1.5	11.5	69.1	217.3
Welfare, no work	2,346	4.3	34.5	0	0	0	38.8
Welfare, with work	1,675	4.4	22.6	.2	2.3	13.4	40.1
Nonwelfare, working and not working	13,847	0	81.2	1.3	9.2	55.7	138.4
Mid-income	55,538	0	492.6	210.0	50.2	1,574.1	1,924.9
High-income	24,790	0	294.9	648.8	60.6	2,144.2	2,987.6

[1]Net income is personal income less income tax and is equal to earnings, capital income plus transfers, or consumption plus savings.
Source: ERS.

workers take low-skill jobs in the short-term OJT occupation. This some-what extreme assumption produces pronounced results that allow us to easily trace the impact of the influx of recipients through the economy. Second, we make a more realistic assumption that the new workers take jobs distributed by occupation in proportion to the distribution of occupations held by working adults of other low-income households. In this scenario, the low-skill short-term OJT occupation accounts for 56 percent of the jobs, entry-level jobs account for 80 percent (including the short-term OJT jobs), and the other 20 percent involve some work experience and post-high school education.

Table 3—Aggregate conditions by sector, 1996 base values

Employment sector	Labor	Production	Exports	Imports	Income
	Millions jobs	1996 $ billions	------------$ billions------------		
Farm	2.320	237.0	20.3	5.6	97.5
Construction	7.860	857.8	.1	0	389.5
Food processing	1.717	442.1	25.7	23.3	124.8
Energy	1.405	627.5	11.5	81.6	228.9
Trade and transportation	23.566	1,843.4	139.6	9.1	965.7
Tobacco and alcohol	.130	79.2	9.4	5.6	33.3
Textile and apparel	1.971	197.7	22.8	69.9	67.7
Other nondurable manufacturing	5.162	919.2	90.7	89.0	396.7
Durable manufacturing	11.214	1,902.4	373.0	539.8	742.6
FIRE[1]	9.293	2,371.5	58.4	1.8	1,374.5
Restaurants	7.725	311.4	15.5	0	131.4
Health	9.780	688.4	1.5	0	449.0
Education	2.008	98.9	11.2	.6	56.9
Other services	47.254	2,709.0	50.6	4.5	1,977.8
Total	131.405	13,285.6	830.4	830.8	7,036.3

[1]FIRE refers to the finance, insurance, and real estate sector.
Source: ERS.

Table 4—Aggregate labor market by worker skill level, 1996 base values

Skill level	Labor supply	Labor wage
	Thousand jobs	$/year
Total labor	131,405	30,407
By occupational group:		
Professional degree	1,728	96,587
Doctoral degree	329	39,970
Master's degree	895	33,524
Work experience plus bachelor's or higher degree	9,375	57,270
Bachelor's degree	14,337	45,179
Associate's degree	4,000	38,848
Post-secondary vocational training	8,359	25,907
Work experience in a related occupation	10,227	32,513
Long-term on-the-job training	14,594	31,426
Moderate-term on-the-job training	17,432	29,460
Short-term on-the-job training	50,129	18,439

Source: ERS.

Our scenarios are labeled as follows:

1a = Labor supply increases by 2.4 million workers, who all take short-term OJT jobs.

1b = Labor supply increases by 2.4 million workers, and the distribution of jobs new workers take is the same as the distribution of jobs held by working adults of other low-income households.

2a = Labor supply increases by 2.0 million workers, who all take short-term OJT jobs.

2b = Labor supply increases by 2.0 million workers, and the distribution of jobs new workers take is the same as the distribution of jobs held by working adults of other low-income households.

In addition, we extended analysis of scenario 1b to include macroeconomic conditions of 1996-2000:

1c = Macroeconomic growth of 1996-2000, with a labor supply increase of 13.2 million workers, which includes the 2.4 million labor supply increase from public assistance recipients moving into the labor force with a distribution of occupations as in 1b.

1d = Macroeconomic growth of 1996-2000, without the labor supply increase from public assistance recipients (for comparison with 1c).

Our analysis focuses on the wage impacts of low-skill workers entering the labor force. We assume those already working do not adjust their labor supply in response to the wage adjustment that arises from the labor supply influx (zero labor supply elasticity—perfectly inelastic). Given our assessment that the labor supply of low-skill workers is inelastic, making the assumption of a perfectly inelastic labor supply curve will not affect the results much. Our analysis assesses the wage adjustments necessary for firm demand to absorb the new labor supply while also allowing firms to adjust their capital stocks.

Scenario 1a

With 2.4 million new workers taking low-skill jobs in short-term OJT occupations, the labor supply for this occupational group increases by 4.8 percent, from 50.1 to 52.5 million workers. As firms expand capacity by 1.4 percent and the economy adjusts to totally absorb the new labor supply, low-skill wages fall by 7.2 percent (table 5, first 2 columns and fig. 1i). This wage impact is within the range of estimates in the literature discussed earlier, making it consistent with others' findings. Wages for the other occupations rise from 1.6 percent to 4.1 percent because these workers are now relatively scarce as the economy expands. The inelastic labor demand for the occupations is an important influence on the wage impact relative to the given labor supply shock.

In addition to assessing and comparing the labor market impact from the scenarios, we also assess and compare the impact on households. The change in real net income is a monetary measure summarizing the change to household well-being. From the income side, it equals earnings, returns to the

ownership of capital assets, and transfers, but net of personal income taxes. From the expenditure side, it equals personal consumption plus savings.[14]

We assess the impact on low-income households that were receiving public assistance and moved into jobs and compare it with the impact on other low-income households who were already working, and with the impact on mid- and high-income households. For those who move from public assistance into jobs, the change to real net income is the net outcome of a reduction in transfer income and an increase in earnings. The net outcome is, therefore, indeterminate. For the other low-income households those who are not public assistance recipients—real net income falls as wage adjustments reduce earnings. They compete for the same low-skill jobs as the new job entrants.[15]

For the mid- and high-income households, real net income increases from a reduction in taxes, an increase in earnings, and an increase in returns to capital. Personal income taxes are reduced to offset the reduction in public

[14]Adjusting the nominal change in net income for price changes creates the real net income measure. Price changes are small and have little impact on the results.

[15]Adjusting the nominal change in net income for price changes creates the real net income measure. Price changes are small and have little impact on the results.

Table 5—Labor market results from moving program recipients to work

Occupational group	Scenario 1a, change in:		Scenario 1b, change in:		Scenario 1c, change in:		Scenario 1d, change in:	
	Labor supply	Wage	Labor supply	Wage	Labor supply	Wage	Labor supply	Wage
	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent
Total labor	2,400	-0.1	2,400.0	0.0	13,202	13.5	10,791	14.2
By occupational group:								
1 Professional degree	0	4.0	3.9	4.7	32	17.5	28	14.2
2 Doctoral degree	0	2.1	5.4	-.6	11	11.3	5	13.1
3 Master's degree	0	2.2	0	2.8	14	19.5	14	17.5
4 Work experience plus bachelor's degree	0	2.1	41.2	2.1	193	16.7	151	15.2
5 Bachelor's degree	0	2.2	88.9	1.6	321	19.3	231	18.3
6 Associate's degree	0	4.1	18.7	4.4	83	18.2	64	15.6
7 Postsecondary vocational training	0	2.6	111.7	.9	248	14.4	135	14.6
8 Work experience in a related occupation	0	1.7	217.8	-1.6	386	13.8	165	16.4
9 Long-term OJT training	0	1.6	178.7	-.4	1,936	16.9	1,736	18.0
10 Moderate-term OJT training	0	2.1	378.0	-1.5	2,497	10.9	2,074	13.4
11 Short-term OJT training	2,400	-7.2	1,355.7	-2.3	7,481	4.4	6,189	6.9
By aggregate occupation groups:								
High-skill groups (1-3)	0	3.2	9.0	3.5	57	17.4	48	15.1
Mid-skill groups (4-8)	0	2.3	478.0	1.1	1,231	16.6	745	16.4
Entry level (9-11)	2,400	-3.7	1,912.0	-1.8	11,914	8.0	9,999	10.3

Scenarios:
1a = Labor supply increases by 2.4 million persons, and all new workers take short-term OJT jobs.
1b = Labor supply increases by 2.4 million persons, and the distribution of jobs new workers take is the same as the distribution of other low-income households.
1c = Macroeconomic growth of 1996-2000, with a labor supply increase of 13.2 million persons. Included in the labor supply increase are 2.4 million welfare recipients moving into the labor force in the same distribution of occupations as other low-income households (as in 1b).
1d = The macroeconomic growth of 1996-2000, without the labor supply increase from welfare recipients (for comparison with 1c).

OJT = On the job.
Source: ERS simulation analysis.

assistance expenditures and maintain budget neutrality for the policy change. Earnings increase for these households because their members work in high-skill jobs for which wages increase. The returns to capital increase as the use of capital increases in the expanding economy.

In scenario 1a, with all new jobs in the low-skill, short-term OJT occupations, real net income (table 6) falls by $1.7 billion for the low-income households receiving public assistance with no working members but assumed to take a job and lose their benefits. This translates into an average loss of $450 per household. Earned income does not compensate for the loss of $20.4 billion of government transfers ($7 billion of FSP benefits and $13.4 billion of AFDC-TANF and unemployment insurance). For the other low-income households—the welfare-with-work households and the households not receiving public assistance—earned income falls by $2.4 billion (-$0.6 billion to -$1.8 billion), as the increased supply of low-skill labor lowers wages, and their real net income falls by $1.8 billion (-$0.4 billion to -$1.4 billion). However, the mid- and high-income households have large gains in real net income ($102 billion altogether, or $1,000 per household). Looking at the household subgroups, low-income single parents who move

Table 6—Household results from moving welfare recipients to jobs in short-term on the job training, Scenario 1a

Household scenario	Consumer units[1]	Change in:					
		Food stamp benefits	Other government transfers	Income tax	Labor supply	Labor income	Net income
	Thousands	--------------$ billion--------------			Thousands	------$ billion------	
Total households	108,828	-7.0	-13.4	-4.1	2,400	28.5	98.5
By income group:							
Low-income	23,321	-7.0	-13.4	0	2,400	16.2	-3.5
Welfare, no work	3,840	-7.0	-13.4	0	2,400	18.6	-1.7
Welfare, with work	3,518	0	0	0	0	-.6	-.4
Nonwelfare, working and not working	15,963	0	0	0	0	-1.8	-1.4
Mid-income	58,090	0	0	-3.7	0	5.4	14.5
High-income	27,418	0	0	-0.4	0	6.9	87.5
By family type:							
Single-parent	10,633	-4.7	-9.8	-0.4	1,491	10.6	-1.4
Low-income	5,454	-4.7	-9.8	0	1,491	11.0	-3.4
Welfare, no work	1,494	-4.7	-9.8	0	1,491	11.9	-2.6
Welfare, with work	1,844	0	0	0	0	-.4	-.3
Nonwelfare, working and not working	2,116	0	0	0	0	-.5	-.5
Mid-income	2,552	0	0	-0.1	0	-.1	0
High-income	2,628	0	0	-0.3	0	-.3	2.0
Other family types	98,195	-2.3	-3.6	-3.7	909	17.9	99.9
Low-income	17,867	-2.3	-3.6	0	909	5.2	-.1
Welfare, no work	2,346	-2.3	-3.6	0	909	6.7	.9
Welfare, with work	1,675	0	0	0	0	-.2	-.1
Nonwelfare, working and not working	13,847	0	0	0	0	-1.3	-.9
Mid-income	55,538	0	0	-3.6	0	5.5	14.5
High-income	24,790	0	0	-0.1	0	7.2	85.5

[1]The number of consumer units by household type are base values and do not change in the scenario.
Source: ERS simulation analysis.

from public assistance to work receive the largest reduction in real net income ($2.6 billion, or $1,740 per household) as increased earnings fail to offset the reduction in transfers. These results occur under the assumption of full-time employment but with no other adjustment of transfers.

Scenario 1b

When the new workers take a mix of occupations, similar to the occupations held by adults of low-income households that already work, the labor market impacts are considerably different (see table 5). In this scenario, the labor supply for short-term OJT occupations expand by 2.7 percent, 50.1 to 51.5 million workers, and wages fall by 2.3 percent (see fig. 1i). The wages for the other entry-level jobs, moderate-term OJT and long-term OJT occupations, also fall as labor supply increases. In addition, wages in the work experience in a related occupation category also decline, which is as expected because these occupations are tied to the three entry-level occupational groups.[16] Wages for non-entry-level jobs rise due to their relative scarcity in an expanding economy. Wages adjust less in this scenario as the new workers are spread over a broader range of occupations and skill levels.

Comparing the wage adjustment of scenario 1b with that of 1a, we see a much larger wage adjustment in 1a of -7.2 versus a wage adjustment of -2.3 in 1b. The large difference in these two adjustments is because of the inelastic demand for low-skilled workers. The steep demand curve results in a relatively large wage change for a given supply shift.

Overall, the economy expands more than in the previous scenario, with real GDP growing by 1.6 percent and capital stocks expanding by 2.2 percent as a result of the increase in labor supply (table 7). Comparing the impacts of the two scenarios, 1a and 1b, indicates that economywide returns go to the new welfare-to-work workers who have a range of skills, which allows them to work a greater variety of occupations. This result suggests that effective education and training programs (i.e., those that stimulate job entry in a mix of occupations) for low-skilled adults could benefit not only the individuals but the overall economy as well.

The impact on household real net income improves and even switches sign for those who move from public assistance to work, when the jobs taken are distributed over all occupations in proportion to the occupations worked by similar low-income households who already work. Real net income increases by $2.6 billion ($700 per household) for the low-income households who leave public assistance to take a job and who lose their benefits (table 7). On average, for all households in this group, earned income increases enough to compensate for the reduction of $20.4 billion of government transfers. This switch in results, from a change in net income of -$1.7 billion in scenario 1a to a change of $2.6 billion in scenario 1b, illustrates the importance of skill level of job entry. Even single parents who move from public assistance to work break even with earnings offsetting lost transfers. The impacts for all the other households remain similar to those in the previous scenario, but the negative impact is mitigated so the losses are smaller and the gains are larger. For the other low-income households—those working and not receiving public assistance—the reduction in earnings is only half those in the previous scenario. Real net income for the mid- and high-income households increases by 33 percent compared with the previous scenario.

[16]The doctoral degree occupational group has an abnormal result of falling wages for a high-skill occupation. Because some low-income households have a member with a doctoral degree, the labor supply of this group is increased, along with other low-income households. We suspect that this is a result of first, small cell size, second, postdoctoral programs, and third, low-paying, high-skill jobs with amenities or other benefits, such as flexible hours.

Scenarios 1c and 1d

The above scenarios allow us to isolate the welfare-to-work policy change from the other changes in the economy that occurred over 1996-2000. As we now know, 1991-2001 was the longest economic expansion on record, and the second half of that period was remarkable in generating economic growth. The high growth of the late 1990s was fueled by large productivity increases, which are usually not seen in the latter half of an expansion. Consequently, the actual influx of public assistance recipients into the labor force occurred during a time of unprecedented growth.

During 1996-2000, an average of 3.3 million new jobs were created annually (see appendix A). Entry-level jobs grew an annual average 3.5 percent, while jobs in other occupational groups grew by 0.6 percent. By our estimate, close to 3 million of the new jobs generated by the economy were entry-level jobs, and fully half of those were low-skill jobs requiring only short-term on-the-job training. Therefore, entry-level jobs generated 90 percent of the new jobs in the economy, a favorable situation for both public

Table 7—Household results from moving welfare recipients into a distribution of jobs, Scenario 1b

| Household scenario | Consumer units[1] | Change in: | | | | | |
		Food stamp benefits	Other government transfers	Income tax	Labor supply	Labor income	Net income[2]
	Thousands	--------------$ billion---------------			*Millions*	------$ billion------	
Total households	108,828	-6.9	-13.5	-8.2	2,400	24.0	128.4
By income group:							
Low-income	23,321	-6.9	-13.5	-.1	2,400	21.8	1.7
Welfare, no work	3,840	-6.9	-13.5	0	2,400	23.0	2.6
Welfare, with work	3,518	0	0	0	0	-.3	-.2
Nonwelfare, working and not working	15,963	0	0	-.1	0	-.9	-.7
Mid-income	58,090	0	0	-5.9	0	1.0	13.1
High-income	27,418	0	0	-2.3	0	1.3	113.5
By family type:							
Single-parent	10,633	-4.6	-9.9	-.5	1,491	13.9	2.6
Low-income	5,454	-4.6	-9.9	0	1,491	14.2	-.3
Welfare, no work	1,494	-4.6	-9.9	0	1,491	14.6	.1
Welfare, with work	1,844	0	0	0	0	-.2	-.1
Nonwelfare, working and not working	2,116	0	0	0	0	-.2	-.2
Mid-income	2,552	0	0	-.1	0	-.1	0
High-income	2,628	0	0	-.4	0	-.2	2.9
Other family types	98,195	-2.3	-3.6	-7.7	909	10.1	125.8
Low-income	17,867	-2.3	-3.6	-.1	909	7.6	2.0
Welfare, no work	2,346	-2.3	-3.6	0	909	8.4	2.6
Welfare, with work	1,675	0	0	0	0	-.2	-.1
Nonwelfare, working and not working	13,847	0	0	0	0	-.7	-.4
Mid-income	55,538	0	0	-5.8	0	1.1	13.1
High-income	24,790	0	0	-1.9	0	1.5	110.7

[1]The number of consumer units are base values and do not change in the scenario.
[2]Net income is household income net of personal income taxes, where household income is earnings, capital income, and transfers.
Source: ERS simulation analysis.

assistance recipients who were working and those who were not working but who were looking for jobs.

We perform two additional scenarios to provide insight into the impact of the welfare-to-work policy of public assistance on the labor market in the late 1990s. Scenario 1c has the actual high-growth macroeconomic conditions of 1996-2000 (see table 1). Labor supply increased by 13.2 million, which includes 2.4 million public assistance recipients moving into the labor force into a mix of occupations, as in scenario 1b. For comparison, scenario 1d has the macroeconomic conditions of 1996-2000 but without the recipients moving into jobs; instead, they continue to participate in public assistance. Whereas, in 1b, we isolate the policy change from the macroeconomic changes, in 1d, we isolate the macroeconomic changes from the policy change. The labor market results for these two scenarios are in table 5.

In scenario 1b, we saw that the influx of public assistance recipients into the labor force depressed wages in the entry-level occupations, which is what we would expect in theory, as the influx is an increase in the labor supply of entry-level workers. The influx of entry-level workers also generates a modest increase in GDP as a result of the larger labor force (fig. 1i). However, scenario 1c incorporates the high GDP growth of the late 1990s, which results in a large increase in labor demand. The result is an increase in jobs and an 8-percent increase in wages for entry-level workers (fig. 1j).

For comparison, we looked at the macroeconomic conditions of 1996-2000, without the influx of public assistance recipients. In this scenario, wages increase for entry level workers by 10.3 percent, a greater increase than in scenario 1c. The influx of recipients into the labor force depresses wages, but not such that wages actually decline. Instead, the influx depresses wage **growth** over 1996-2000 by 2.3 percentage points. Although wages increase, the increase would have been greater without the influx of recipients. Consequently, the movement of public assistance recipients into the work-force between 1996 and 2000 did indeed negatively affect the entry-level labor market, although the prosperity of the late 1990s buoyed wages such that the negative impact on wages was not obvious.

Looking at the wages of high-skill occupations, we see that their wages grow 17.4 percent in scenario 1c but only 15.1 percent in scenario 1d. High-skill workers are better off **with** the influx of public assistance recipients into the labor force because, first, high-skill workers become relatively scarce once the recipients join the labor force and, second, greater economic growth comes with a larger labor force. Indeed, we estimate that real GDP growth would have been 1 percentage point lower over 1996-2000 **without** the movement of recipients into the labor force (not reported in tables).

Scenarios 2a and 2b

The alternate assumption of 50 percent of those leaving the AFDC-TANF program becoming employed, resulting in 2 million new workers, is used in scenarios 2a and 2b, although results are not presented here. (Results are available upon request from the authors.) We found that the influx of 2 million new workers, 16 percent fewer than in the previous scenarios, resulted in a wage impact 16 percent smaller in scenario 2a than in scenario 1a.

With all new employment in the short-term OJT occupation, the labor supply for this low-skill occupation rises by 4 percent and wages fall by 6.1 percent compared with 7.2 percent in scenario 1a. The wages for other occupations rise by 1.3 percent to 3.4 percent. Real net income falls by $1.3 billion for the low-income households who leave public assistance and take jobs, compared with $1.7 billion for scenario 1a. Real net income for the other low-income households drops by $1.6 billion, as earnings are lower due to the fall in low-skill wages. The results are similar but more moderate than those in scenario 1a. We conclude that the qualitative results are the same with either the 70-percent or 50-percent assumption—wages for all low-skill workers decline, and those households who leave public assistance to work lose real net income with the lower earnings and loss of transfers.

In scenario 2b, 2 million new workers take jobs distributed over the occupations in which other low-income households work, resulting in wage impacts that are also about 16 percent less than in scenario 2a with the larger employment impact. Real net income for those moving from public assistance to work increases by $2.2 billion, while it falls by $0.8 billion for the other low-income households. Again, these results are similar to those in scenario 1b, so the 50-percent assumption does not change our findings.

Labor Supply Scenario Findings

We find that the influx of public assistance recipients affected the labor market between 1996 and 2000, following welfare reform. If we isolate the influx from the strong macroeconomic growth of 1996-2000, we find lower real wages for low-skill workers. Consequently, this policy change affected all low-skill workers, not just public assistance recipients who entered the labor force. This finding held up over various assumptions of the magnitude of the influx and of the skill levels of the individuals leaving public assistance to work.

Looking at the influx of public assistance recipients into the labor force during the strong economy and tight labor market of the late 1990s, we find reduced wage growth for low-skill workers. However, the larger labor force contributed to the strong economic growth, producing an additional 1 percentage point of real GDP growth over 1996-2000.

We get mixed results when we analyze whether the public assistance recipients who enter the labor force are better off working than receiving transfer payments. Depending on the wage impact, recipients were either worse off (scenarios 1a and 2a) or better off (1b and 2b). These findings show how the conditions of the labor markets can make all the difference in a low-skill individual's well-being. An influx of more or fewer workers into an occupational group can have an impact across a large number of households.

We use two different assumptions of the number of individuals leaving public assistance to work—2.4 million and 2.0 million—for sensitivity analysis. Some may find the 2.4 million assumption overly optimistic and at the high end of the range of likely possibilities. We find that using the more conservative assumption of 2.0 million as an alternative generated similar findings; so our qualitative conclusions are the same.

Recession Scenario

In analyzing the labor market impacts from the movement of public assistance recipients into jobs between 1996 and 2000, one important question is, what would have happened if there had been a recession? In a downturn, it would be more difficult for program participants to find jobs, and some individuals may lose their jobs and enroll in public assistance programs. To answer this question, we use scenario analysis with the CGE model to assess the impact of a recession on low-skill occupations relative to other occupations. In the model, the occupational mix is endogenous; that is, the occupational mix impact is determined by final demand. This feature of the model is necessary to determine if a recession disproportionately affects one or more occupational groups, and particularly, how the low-skill occupations are affected.

Each recession has its own personality in terms of duration, depth, and diffusion through the economy. In addition, crucial economic indicators, such as interest rates or exchange rates, may be different, reflecting the particular financial market conditions of each recession. We chose to use a stylized average of the seven recessions starting with the recession of 1957-58.[17] The recession scenario is characterized by declining real GDP, job loss, and a drop in investment.

The recession that began in March 2001 was not included in the stylized average. Because the labor market lags the rest of the economy in a recovery, the employment impacts of the recession linger for some time, making it premature to include the 2001 recession in our analysis. Looking over March 2001 to March 2002, 1.7 million jobs, or 1.26 percent, were lost, the same job loss in the average recession. Other indicators, however, show a milder recession than average, with positive but slight GDP growth.

To incorporate the macroeconomic assumptions into the CGE model, investment growth is made exogenous, and the change in real GDP, employment, exports, and imports are targeted, using capital stocks and the exchange rate as controls for targeting. Real wages are fixed, allowing the labor market effects of the recession to occur through employment loss by occupation. Our focus here is the impact across occupational groups to analyze the effects on low-skill jobs. Once an estimate of the impact of a recession on the unemployment rate is made, we use past trends for the relationship between changes to the FSP caseload and unemployment rate to estimate the impact of a recession on the FSP caseload.

Hanson and Gundersen (2002) have summarized the findings from a number of econometric studies that have estimated the relationship between the FSP caseload and unemployment rate, after controlling for a number of other factors, such as policy changes.[18] Research results suggest that the current period (1-year) effect of a 1-percentage-point change in the unemployment rate is about 700,000 more food stamp recipients and about 1.3 million more recipients in the longer run. A common assumption among the reviewed studies is that the relationship between the unemployment rate and FSP caseloads is symmetrical over the business cycle. However, there are two asymmetries, one with the unemployment rate over the business cycle and the other with the relationship of caseload change to unemployment during the growth phase of the business cycle, which differs from the relationship

[17]Many business cycle economists use a post-World War II average cycle as a comparison when analyzing a specific cycle or recession. They also exclude the two postwar recessions, 1948-49 and 1953-54, when calculating an average cycle, as there was much structural change in the economy between 1945-56 (Perry and Schultze, 1993).

[18]For TANF, estimates for the change in caseload range from 4 to 6 percent in the short run for a 1-percentage-point change in the unemployment rate and 6 to 9 percent in the long run (Blank, 2001).

during a recession. The unemployment rate rises faster during a recession than it falls during a recovery and growth phase (Zarnowitz, 1992, p. 256-9). In contrast, the change in FSP caseload relative to a change in the unemployment rate tends to fall at a greater pace during an economic recovery than it rises during a recession, an issue in need of further investigation.

In the average recession scenario (scenario 3), 1.7 million workers, about 1.3 percent, lose their jobs (table 8). For the occupational groups, the job loss is not evenly distributed. The largest job loss is in the low-skill, short-term OJT occupation (493,000), which accounts for 30 percent of the total job loss. This percentage is less than the occupation's share of initial employment, which is 38 percent of total employment. So, although this loss is disproportionately less than what some other occupations face, it is the largest in magnitude. The three on-the-job-training occupations that make up the entry-level jobs together account for almost 70 percent of the total job loss, which is disproportionately more than their initial share of employment (63.4 percent). As entry-level jobs are likely opportunities for participants in public assistance programs, an average recession seems to have a disproportionate impact on the types of jobs held by potential program participants.

The types of households affected by the job losses are primarily (89 percent) mid- and high-income households, which is proportionate to the initial distribution of jobs among households (table 9). Though two-thirds of the

Table 8—Aggregate labor market results from average recession and trend growth scenarios

Occupational group	Average recession, Scenario 3, change in:		Trend growth, Scenario 4, change in:	
	Labor supply	Wage	Labor supply	Wage
	Thousands	*Percent*	*Thousands*	*Percent*
Total labor	-1,667.8	-1.27	2,870.4	2.18
By occupational group:				
1 Professional degree	-16.2	-.94	53.9	3.12
2 Doctoral degree	.3	-.10	4.2	1.29
3 Master's degree	-2.1	-.24	10.7	1.20
4 Work experience plus bachelor's degree	-102.9	-1.10	206.8	2.21
5 Bachelor's degree	-149.9	-1.05	281.2	1.96
6 Associate's degree	-39.9	-1.00	136.0	3.40
7 Postsecondary vocational training	-98.0	-1.17	208.8	2.50
8 Work experience in a related occupation	-124.4	-1.22	206.4	2.02
9 Long-term OJT training	-332.0	-2.28	245.5	1.68
10 Moderate-term OJT training	-309.7	-1.78	433.2	2.49
11 Short-term OJT training	-493.1	-.98	1,083.7	2.16
By aggregate occupational groups:				
High-skill (1-3)	-18.0	-.6	69.0	2.30
Mid-skill (4-8)	-515.0	-1.1	1,039.0	2.20
Low-skill or entry level (9-11)	-1,135.0	-1.4	1,762.0	2.10

Source: ERS simulation analysis.

job losses are in entry-level occupations, only 13 percent of the job losses are from low-income households (186,000) because a large number of entry-level jobs are held by members of mid- and high-income households. Further-more, there is the question of who, among those employed household members, loses his or her job and who retains his or her job during a reces-sion. The low-income household members who have moved most recently from public assistance programs into jobs may be more likely to lose their jobs because they would have less seniority and work experience than other employees. Consequently, this analysis may overstate the impact for mid- and high-income households and understate for low-income households. However, we still conclude that the qualitative findings of this scenario are a large loss of low-skill jobs and loss of earnings across income levels.

From the approximately 200,000 jobs lost by low-income households, the FSP would gain an estimated 500,000 participants, assuming an average of 2.5 people per household and that FSP participation by all low-income people losing a job. Given that the unemployment rate increases by 1.4 percentage points in the recession scenario, the FSP caseload increases by about 350,000 people per percentage-point change in the unemployment rate. This number is smaller than even the static econometric estimates, which range between 700,000 to 1 million per percentage-point change in the unemployment rate (Hanson and Gundersen, 2002).

So far, our analysis of the impact of a recession on FSP caseload has not taken into account the fact that some mid-income households could have their incomes fall below the program eligibility levels if members lose their

Table 9—Household results, average recession scenario, Scenario 3

| Household scenario | Consumer units[1] | Change in: | | | | | |
		Food stamp benefits	Other government transfers	Income tax	Labor supply	Labor income	Net income
	Thousands	---------------$ billion---------------			*Thousands*	------$ billion------	
Total households	108,828	0	0	3.8	-1,667.8	-85.1	-51.9
By income group:							
Low-income	23,321	0	0	0	-186.1	-2.1	-3.4
Welfare, no work	3,840	0	0	0	0	0	-.4
Welfare, with work	3,518	0	0	0	-46.2	-.5	-1.0
Other	15,963	0	0	0	-140.0	-1.6	-2.0
Mid-income	58,090	0	0	-1.6	-660.2	-34.7	-34.1
High-income	27,418	0	0	5.4	-821.5	-48.3	-14.4
By family type:							
Single-parent	10,633	0	0	0	-111.4	-4.4	-4.1
Low-income	5,454	0	0	0	-40.1	-.6	-1.1
Mid-income	2,552	0	0	0	-20.6	-1.1	-1.1
High-income	2,628	0	0	0	-50.7	-2.7	-1.9
Other family types	98,195	0	0	3.8	-1,556.4	-80.7	-47.8
Low-income	17,867	0	0	0	-146.0	-1.5	-2.3
Mid-income	55,538	0	0	-1.6	-639.6	-33.6	-33.0
High-income	24,790	0	0	5.4	-770.8	-45.6	-12.5

[1]The number of consumer units by household type are base values and do not change in the scenario.
  Source: ERS simulation analysis.

jobs. We have looked only at the impact on households that were already low-income at the start of the recession scenario. With the income level defining the low-income households at 130 percent of the poverty line, households in the mid-income group could move into poverty if members lose their jobs and enter the FSP. We estimate that, historically, anywhere from 812,000 to 3.894 million people, or an average of 2.5 million, fall into poverty per percentage-point increase in the unemployment rate.[19] Only 25 percent of mid-income people moving into poverty would have to enroll in the FSP to bring the increase in FSP caseload up to 1 million per percentage-point change in the unemployment rate.

Growth Scenario

A growth scenario is a useful indicator of how the entry-level labor market will fare after the recent recession. The high rates of growth in the late 1990s cannot be expected to continue, and so trend values are reasonable assumptions. For the growth scenario, we use macroeconomic assumptions that are average annual values over 1957-2000—the trend rates for this period. The trend rates for GDP growth, fixed investment, capital stocks, and job growth are lower than those of 1996-2000. As with the recession scenario, the occupational mix is endogenous and so is determined by final demand.

Under trend growth, scenario 4, employment increases by 2.87 million jobs per year (table 8). The entry-level occupations are a relatively large share of the new jobs, 1.76 million, of which most (1.084 million) are the low-skill, short-term OJT jobs. As expected, households with working members are better off.

Growth is good for the economy, and spurs the movement of public assistance recipients into the workforce. The question here is whether or not a disproportionate impact may occur for low-skill and other entry-level jobs. We find that the benefits of trend growth are fairly proportional across the occupational groups, both in terms of job growth and wage increases. The result is that the low-skill, short-term OJT occupations have a proportional benefit from growth. This translates into the creation of a large number of jobs, which is useful for moving public assistance recipients into the workforce.

Although trend growth provides insight into the current expansion, it cannot be used as a forecast. Just as each recession has its own personality, so does each expansion. Furthermore, our scenario assumes uniform productivity growth over all industries, and if productivity growth were to vary among industries, the impacts would differ in both employment and wage effects.

Summary of Scenario Results

Our scenario analysis produces two main findings that answer our two research questions. First, in investigating the labor market impact of the influx of public assistance recipients into the workforce since welfare reform, we found that the influx of recipients into the labor market did, indeed, affect wages. In our scenario focusing on the policy change impact and controlling for macroeconomic conditions, this wage impact was in the form of an actual reduction in real wages. When we added in the high-growth macroeconomic conditions of 1996-2000, the wage impact appeared

[19]Rates of increase in poverty per increase in the unemployment rate have been found in other studies, ranging from 1.6 million to 3.2 million (Blank and Blinder, 1986; Tobin, 1994; Haveman and Schwabish, 2000; LeBlanc, 2001).

as reduced wage growth. So, wages grew, but not as much as they would have had not the 2.4 million welfare recipients entered the labor force. At the same time, this increase in the labor force produced an increase in GDP, which benefited the overall economy.

Our second finding addresses the question of how changes in macroeconomic conditions affect public assistance programs. We find that economic growth benefits the labor market proportionately across all occupations. A recession, however, can have differential impacts. In our average recession scenario, we find that entry-level jobs took a disproportionate hit in terms of job loss. Thus, welfare reform in a recession faces multiple hurdles—low-income, low-skill workers lose their jobs and public assistance recipients looking for jobs will find few job vacancies.