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HOW ACCURATE ARE QUALITY-OF-LIFE RANKINGS ACROSS CITIES?

Joseph Gyourko

Early rankings of cities by quality of life relied solely on such amenities as beaches and sunshine. Then economists added fiscal variables—local taxes and publicly provided services—to the measures. A recent study of quality of life measures the extent to which a city's combined traits influence wages and land prices. A ranking of 130 U.S. cities follows. But how much do these rankings really tell us?

ACTIVIST MONETARY POLICY FOR GOOD OR EVIL?

The New Keynesians vs. the New Classics

Tom Stark and Herb Taylor

How does monetary policy affect the real economy? There is little agreement on this issue, but two groups each think they have the answer. The New Classics believe that monetary policy has an impact on output and employment only when it catches the public by surprise. Meanwhile, the New Keynesians claim that even unsurprising policy actions can—and do—have a sustained impact. Can either side claim to know for sure?

How Accurate Are Quality-of-Life Rankings Across Cities?

*Joseph Gyourko**

Quality-of-life comparisons across localities routinely attract the attention of executives, workers, local public officials, and academics. Private firms, many in relocation or vacation-related businesses, were the first to gauge the relative attractiveness of different areas. These firms gathered data on climate, culture, employment, home prices, and wages,

all of which they thought influenced the quality of life. Then they weighted these factors in some ad hoc manner to compute an index number reflecting the quality of life in each community.

Many of these earlier efforts tended to interpret low home prices and high wages as evidence of a high quality of life, and the cities with these traits were rated as relatively more attractive. But in the late 1970s, economists introduced an entirely new methodology for ranking areas that reversed the interpretation of home prices and wages. Economists tend to

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view relatively low land prices and high wages as signs that an area is unattractive. Alternatively, they view high land prices and low wages as evidence that an area is relatively more attractive.

In a city such as San Francisco, for example, land prices are higher and wages are lower than they otherwise would be because of the presence of high-quality amenities—good weather, scenic views, and nearness to the ocean—for which an entrant to the community is willing to pay a great deal. The payment is in terms of higher land prices and/or lower wages because the people willing to pay the most for a house and accept the least in terms of wages are most likely to obtain one of the scarce sites and jobs in the area. Consequently, you are not necessarily better off if you live in a high-quality-of-life city such as San Francisco. The reason, of course, is that you have to pay more to enjoy San Francisco's higher quality of life.

More recent studies suggest that a locality's quality of life depends on more than amenities. Locally provided services and taxes have nearly as much influence on the quality of life as weather and pollution. Introduction of the public-service and tax variables into the quality-of-life literature has enabled economists to put a value on something policymakers long have claimed is important. The ability to provide quality service while restraining taxes improves the attractiveness of a jurisdiction. While local weather and amenity conditions usually cannot be altered by the community, the fiscal climate is under its control. Finally, the latest evidence also introduces a note of caution about the preciseness of quality-of-life rankings. Given limited data, it is still very difficult to distinguish among most cities' quality of life.

ESTABLISHING A VALUE FOR THE QUALITY OF LIFE

The value of any area's special characteristics is determined by what people are willing to

pay in order to live there—in other words, the sum of what they are willing to pay for each local trait that either contributes to or detracts from the area's quality of life.¹

The issue is how to determine the prices of these local traits. It is not immediately clear how much people are willing to pay for an amenity such as extra sunshine. Sunshine is not a standard good traded in a visible market. But even though there is no explicit price for sunshine, there is an implicit one. Assume you are considering moving into either Community A or Community B. These communities are alike in all respects except that Community A tends to experience one more day of sunshine per year than Community B. Because sunshine is something you like, you are willing to pay some positive dollar amount for more of it. For example, if you are willing to pay \$100 more to move into Community A, then that is the price of the added sunshine you expect to enjoy in Community A. Because the added sunshine is the only difference between the two communities, your willingness to pay the extra \$100 must be due to the sunshine differential.²

CAPITALIZATION INTO WAGES AND RENTS

There are two ways in which you could pay your extra \$100. One is by bidding up land prices so that you are able to obtain one of the

¹Growing interest in this topic has produced the so-called "quality of life" literature. Rosen (1974, 1979) and Roback (1980, 1982) provided the initial conceptual and empirical underpinnings for this literature.

²If you are the marginal entrant to the community, \$100 is the true implicit market price of sunshine. The marginal entrant is the person who determines the price. The added \$100 this person is willing to pay is just enough to secure a site in the community. Other people may place higher valuations on the extra sunshine, but they will not have to bid more than an extra \$100 because they will not have to pay any more than the marginal entrant. Entrants who value the amenity more than the marginal entrant does are said to be inframarginal.

scarce housing sites in the community. However, it is not necessarily true that you will ultimately pay \$100 more for a house in Community A than you would pay in Community B. Part of the cost of the added sunshine may be paid in the form of lower wages than you would accept in Community B. What must be the case is that the wage and land price differentials total to the \$100 value of the added days of sunshine you will receive during your stay in Community A. The extent to which your wages are lower or your land price is higher is the extent to which an amenity's value is capitalized into the local labor and land markets, respectively. Precisely how much of the price of sunshine is reflected in land prices versus wages depends on supply and demand conditions in the local land and labor markets.³

To measure the local quality of life, economists attempt to determine the price of every local trait that potential entrants would find important. They then multiply these prices by the quantities of the relevant traits existing in each community to determine each trait's contribution to the local quality of life. These prices can be estimated in terms of annual dollar amounts. If a day of sunshine is worth \$10, and the community typically experiences 100 days of sunshine per year, then the annual value of the locality's sunshine is \$1000 (\$10 x 100 days). The total annual value of the local quality of life is simply the sum of the values of all the locality's traits. (For more detail, see *Compensating Differential Models and the Quality of Life*, p. 6.)

THE IMPORTANCE OF THE LOCAL FISCAL CLIMATE

In addition to amenities, government services help determine a locality's quality of life.

These services differ from pure amenities in that they are produced and have explicit tax prices. If a service, such as education, is fully priced via local taxes (in other words, you pay in taxes exactly what you think the service is worth), there will be no implicit price for the service in terms of capitalization into wages or land prices.

Consider again Community A and Community B. Now assume that Community A also provides a superior education system that you estimate will be worth \$500 per year more than Community B's education system. If Community A charges you \$500 more in property taxes, the education service is fully priced via taxation. You would not be willing to pay an added premium to enter the community in terms of bidding up land prices or accepting lower wages. However, the absence of any effect on wages or land prices does not imply that better education service is worthless or that it is irrelevant in determining the local quality of life. The superior education truly is worth an extra \$500 a year to you.

Of course, if the extra taxes in Community A are less than \$500, some of the value of the superior education will be capitalized in wages and land rents. To capture the influence of taxes and services on the attractiveness of an area, economists control for both in estimating the quality of life. Recent research suggests that intercity differences in local fiscal conditions have nearly as much independent influence on quality-of-life rankings as do differences in pure amenities.

Public-Sector Unionization. A related issue is whether the nature of local public-sector labor markets also influences the quality of life across cities. The past two decades have witnessed a striking increase in unionization among public-sector work forces. The issue for the quality of life is whether these highly unionized local public-sector work forces obtain compensation premiums or engage in overstaffing. Consider the land and labor market

³Gyourko and Tracy (1989a, 1989b) and Roback (1980, 1982) provide the details on relative land and labor market conditions that lead to capitalization into land prices versus wages.

Compensating Differentia

Urban economists use compensating differential models to analyze how differences across communities in amenities and fiscal conditions influence local land prices or wages. The economic value of a local amenity or publicly provided service is determined by the land price you are willing to pay and the wage you are willing to accept in order to locate in some jurisdiction. Thus, wages (W) and land prices (L) in city j are influenced by the quality of local amenities (A_j), the quality of publicly provided services (G_j), and a series of local taxes (T_j), as shown in equations (1) and (2):*

$$(1) \quad W_j = W\{A_j, G_j, T_j\}$$

$$(2) \quad L_j = L\{A_j, G_j, T_j\}$$

Estimation of equations (1) and (2) generates regression coefficients, which document by how much wages and land prices are affected by small differences in taxes or in the quality of amenities or services. Both land prices (rents) and wages are measured in terms of annual expenditures (Table 1). Each trait's coefficient is the so-called hedonic, or implicit, price of the trait.

*In practice, housing prices typically are used in lieu of land prices because a consistent land price series does not exist for most cities. Thus, equation (2) is augmented with a vector of housing quality controls. Workers, not just housing, differ in quality. Variables controlling for worker quality (for example, education level and experience), as well as the type of job and industry, normally are included in equation (1). See Gyourko and Tracy (1991) for these and other details with respect to the estimation of the land price and wage equations. Moreover, equations (1) and (2) are the reduced forms of a simultaneous system determining wages and rents, and the ultimate land or labor price of an amenity will depend on its value not only to consumers but to producers as well. For example, clean air is valued by consumers, but it may reduce productivity for some firms because of the need to invest in pollution-control equipment. The positive value to consumers would tend to raise land rents while the cost to firms would tend to lower them. As a result, the net effect could be positive or negative. See Voith (1991).

impacts if Community A and Community B have equally productive public workers, but Community A pays its unionized workers a 10 percent premium including better pension benefits. The higher compensation has to be financed by higher taxes, either now or in the future. To compensate for the higher taxes, a potential entrant into Community A should insist on a lower price for land and/or demand higher wages. This capitalization into lower land prices or higher wages would indicate a lower quality of life. However, after controlling for current taxes and services, recent findings indicate that differences in public-sector

unionization levels do not materially affect land prices or wages.

A RANKING OF CITIES

Economists have used the implicit prices of amenities and local fiscal characteristics to rank areas according to their attractiveness. Blomquist, Berger, and Hoehn, in a 1988 study, ranked counties by their quality of life using a standard set of pure amenities. More recently, Gyourko and Tracy, in 1990, produced a ranking of cities that considers the fiscal climate along with amenities. They estimated the prices of traits, then used them to calculate an index

Prices and the Quality of Life

Since these local traits are not traded on visible exchanges, their prices are revealed only implicitly through their impacts on local land and labor markets.

Estimating equations (1) and (2) reveals prices for traits in both the land and labor markets. It is important to note that each trait's full implicit price is determined by its impact across both markets. By definition, the full implicit price for trait k (FP_k) is the sum of its land market price (LP_k) and the negative of the labor market price (WP_k), as shown in equation (3):

$$(3) \quad FP_k = LP_k - WP_k$$

To understand this formula, consider a favorable trait, such as sunshine, and an unfavorable trait, such as heating degree days. All else constant, a city with more sunshine probably will have higher land prices and lower wages. Note that sunshine has a positive impact on prices in the land market and a negative impact on wages in the labor market. Subtracting the negative labor market impact from the positive land market impact ensures a positive full price for sunshine, as intuition would suggest.

However, more heating degree days generate lower land prices and higher wages, all else constant. This is because added heating degree days imply more days with temperatures below a moderate 72 degrees. These conditions typically are associated with a higher degree of personal un-comfortableness, as well as higher energy costs. Subtracting the positive labor market price of this trait leads to its negative full price. Thus, the use of equation (3) means that traits with positive (negative) full prices are viewed as beneficial (detrimental) by entrants.

The value of the local quality of life simply is the sum (Σ) of the value of all the locality's traits. The basic quality-of-life index (QOL_j) is created as follows:

$$(4) \quad QOL_j = \sum_k (FP_k * T_{kj})$$

where T_{kj} represents the quantity of trait k in city j .

value for the quality of life.⁴ The prices represent the annual costs or benefits of a 1 percent increase in the local trait (Table 1, p. 8.).

Estimating Prices. Among the local amenities, the percentage of sunny days and being situated on a coast have the largest prices. The

results indicate that a 1 percent increase in the amount of sunny days is worth almost \$28 per year. Of this amount, nearly \$22 is paid in terms of added housing expenditures and about \$6 is paid in terms of lower wages. The strong influence of being near an ocean, major gulf, or one of the Great Lakes is indicated by the high positive price for the coast variable. The estimates from Gyourko and Tracy show that being on a coast was worth almost \$1090 per year. That is, an entrant to a coastal city was willing to pay at least that much more per year in a combination of higher land rents or lower wages.

Many of the tax and service measures are

⁴Gyourko and Tracy (1991) offer a detailed description of how the city trait prices were estimated and how the rankings were computed. The data used cover 130 cities throughout the United States. Most of the variables, whose names are self-explanatory, are for the years 1979-80. The cost-of-living index is derived from the Bureau of Labor Statistics' intermediate family budget adjusted to measure the nonland cost of living.

TABLE 1
Annual Trait Prices^{a,b}

City Trait	Full Price	
Precipitation (annual inches)	-\$1.22	(8.45)
Cooling degree days (thousands per year)	-8.86	(5.59)
Heating degree days (thousands per year)	-22.58	(8.49)
Average relative humidity (%)	-3.61	(22.95)
Sunshine (% of possible days)	27.87	(26.82)
Average wind speed (mph)	21.39	(13.64)
Particulate matter (micrograms per cubic meter)	-2.01	(7.15)
Coast	1089.86	(560.28)
Nonland cost-of-living index	-27.70	(115.55)
Violent crime rate (per 100 capita)	-12.40	(2.97)
Student/teacher ratio	-3.76	(10.33)
Fire department quality rating (1 = best; 10 = worst)	-3.55	(6.36)
Hospital beds (per 1000 capita)	11.85	(3.53)
Property tax rate	-6.14	(2.37)
State and local income tax rates	-5.36	(2.41)
State corporate tax rate	15.30	(4.91)
Percentage of public union organization	-2.89	(4.54)
SMSA ^c population (millions)	-0.30	(1.20)
Percentage of the labor force working in another SMSA	3.49	(4.15)

^aThe calculations of trait prices are based on a 1 percent change about the mean of the variables. The exception is the dichotomous COAST variable, whose prices are based on a discrete change from noncoast to coastal status. All figures in these three columns are annualized. We assume 1.5 wage earners per household and that each wage earner works 49 weeks. These are the sample averages.

^bStandard errors of the implicit prices are in parentheses.

^cSMSA is the abbreviation for standard metropolitan statistical area.

also quite influential. Consider violent crime and tax rates on property and income. Clearly, increases in the incidence of violent crime lower the quality of life. All else constant, an entrant to the average city in terms of crime would require \$12.40 in annual compensation if that city were to experience a 1 percent increase in the incidence of violent crime.⁵ As expected, higher property or income tax rates have negative prices, if the service level is held constant. If taxes are higher in some city, but the locality provides no commensurate increase in service provision, we would expect an entrant to the area to demand compensation in terms of lower land rents or higher wages.

Computing Index Values. Implicit prices are used to compute quality-of-life index values by comparing each city to a hypothetical city having the average values of all city traits. The index, measured in 1979 dollars, reflects the premium individuals are willing to pay to live in any given city relative to a hypothetical city with the average amenities and fiscal conditions across all 130 cities in our sample.

⁵This is the same as saying that the entrant would pay a negative \$12.40 in the city with more crime. Hence, the negative price.

Summary statistics illustrate the relative effects of the local amenity and fiscal conditions on the differences in quality of life across cities (Table 2). The full range of quality-of-life values based on all city traits is \$8227. That is, an entrant was willing to pay at least \$8227 more per year to live in the top-ranked city versus the bottom-ranked city. This band is wide because of some extreme cities. For a more representative view, let us focus on the middle of the distribution and analyze what statisticians call the interquartile range. The interquartile range reveals how much more per year an entrant is willing to pay to live in the city ranked in the 25th percentile (rank 32 out of 130) versus the city ranked in the 75th percentile (rank 97 out of 130). That range is only \$1484.

For the moment, let us consider the impact of the 11 amenity values separately.⁶ All else

⁶The amenity variables include precipitation, cooling degree days, heating degree days, relative humidity, sunshine, wind speed, particulate matter, coast, nonland cost of living, SMSA population, and percent of population working in another SMSA. The tax/service variables include violent crime rate, student/teacher ratio, fire department quality, number of hospital beds, property tax rate, income tax rates, and the corporate tax rate.

TABLE 2

Amenity and Fiscal Impacts on Quality-of-Life Rankings

Variable Set	Quality-of-Life Range	Quality-of-Life Interquartile Range
All city traits	\$8227	\$1484
Amenity component	\$3979	\$1372
Tax/service component	\$6582	\$1188

constant, one would pay \$3979 more to live in the top-amenity city than in the city with the worst amenity set. There is a particularly wide range for the impact of the seven tax/service variables (\$6582). However, looking only at the middle of the distribution shows that the fiscal characteristics have only a slightly less strong effect than amenities on the differences in quality of life across cities (\$1188 versus \$1372).⁷ Even if the traditional amenity levels were the same for all 130 cities, differences in fiscal climate and public services would still result in a difference of at least \$1188 between a city ranked in the 25th percentile and a city ranked in the 75th percentile.

While readers undoubtedly will have quarrels with specific cities' relative positions in the quality-of-life ranking, the overall rankings accord with common sense (Table 3, p. 12). Norwalk, CT, and Pensacola, FL, are the top-ranked cities. Stamford, CT, San Diego, CA, and San Francisco, CA, also are in the top 20 percent. Newark, NJ, Detroit, MI, and Flint, MI, are among the lowest-ranked cities. Wilmington, DE, with a ranking of 31, is rated just among the top 25 percent. Philadelphia, PA, falls in the bottom half of the range, with a ranking of 101.

A NOTE OF CAUTION

Previous quality-of-life studies end after pronouncing the best and worst cities. Unfortunately, the rankings are not reliable enough to stop there. The underlying problem is that the estimation of the trait prices is imprecise. If there is estimation error in the trait prices,

there must also be estimation error in the quality-of-life index values, which are themselves based on the trait prices.⁸ It turns out that we can confidently differentiate among qualities of life only when comparing the top-ranked cities to the lowest-ranked cities.

For example, the estimation errors are so large that we cannot confidently distinguish between the rankings of cities such as Wilmington (31), which is estimated to be in the top quarter of the distribution, versus Charleston, WV, which is ranked just below the middle of the distribution (71). Given the estimation error, there is about a two-thirds probability that Charleston's ranking actually is anywhere between 47 and 95. The analogous interval for Wilmington is between 12 and 50.⁹ This inability to confidently rank one city above another holds true for most of the cities in the sample. Statistically meaningful distinctions generally can be made only between top-ranked and bottom-ranked cities. For example, we can confidently distinguish between any of the top-20-ranked cities and the bottom-20-ranked cities.

CONCLUSION

What do these results mean for quality-of-life rankings? First, local fiscal conditions as

⁷In the wage equation, the partial R^2 for the fiscal variables was almost identical to the partial R^2 for the amenity variables. In the housing-expenditure equation, the partial R^2 for the fiscal variables was about one-third as great as the partial R^2 for the amenity variables. Compared with the amenity variables, then, the fiscal variables explain as much of the variation in wages, but about one-third as much of the variation in housing expenditures.

⁸The numbers in parentheses in Table 3 are the standard errors of the index values or of the rankings themselves and provide a measure of the imprecision of the underlying estimation. The standard error is a widely used measure of variability. Statistically, there is a two-thirds probability that the ranking or index value is within one standard error of its estimated value. While our estimate of Norwalk's quality-of-life index number is \$3986.26, the standard error of \$1135.10 implies a two-thirds probability that the true index value is between \$2851.16 and \$5121.36 (\$3986.26 ± \$1135.10).

⁹The standard error of Charleston's ranking is about 24 and that for Wilmington is about 19. Recall that this implies a two-thirds probability that Charleston's ranking is between 71 ± 24 (between 47 and 95) and that Wilmington's ranking is between 31 ± 19 (between 12 and 50).

well as amenities truly influence the attractiveness of localities. The most recent evidence suggests that the effect of fiscal conditions on the quality of life rankings is nearly as great as the effect of natural locational advantages. Moreover, the influences of these local traits on the quality of life can be measured in terms of their impact on local land and labor markets.

Finally, many other local traits influencing the quality of life have not yet been captured, such as cultural and recreational opportunities. It is the omission of these traits that makes the rankings so imprecise. Given current data and estimation techniques, we simply cannot effectively distinguish among most cities. To do so requires much better data.

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TABLE 3
Quality-of-Life Index Values and Rankings

City ^a	Ranking	Index Value	City ^a	Ranking	Index Value
Norwalk, CT	1	3986	Tyler, TX	24	1175
	(4.1) ^b	(1135) ^c		(14.6)	(605)
Pensacola, FL	2	2963	Odessa, TX	25	1118
	(4.0)	(714)		(17.1)	(671)
Gainesville, FL	3	2819	Erie, PA	26	1103
	(7.3)	(890)		(18.4)	(706)
San Diego, CA	4	2574	Phoenix, AZ	27	1097
	(8.4)	(860)		(26.5)	(1038)
Stamford, CT	5	2497	Knoxville, TN	28	1071
	(9.4)	(875)		(10.7)	(412)
Columbia, SC	6	2459	Lafayette, LA	29	930
	(14.7)	(1137)		(15.2)	(548)
Santa Rosa, CA	7	1955	Monroe, LA	30	905
	(11.4)	(744)		(11.1)	(404)
Bridgeport, CT	8	1944	Wilmington, DE	31	898
	(9.3)	(630)		(19.2)	(666)
Tucson, AZ	9	1822	Waco, TX	32	880
	(13.5)	(780)		(21.4)	(745)
Shreveport, LA	10	1802	Springfield, MO	33	753
	(7.3)	(473)		(11.8)	(386)
Lancaster, PA	11	1784	Sacramento, CA	34	703
	(9.0)	(547)		(18.0)	(564)
Modesto, CA	12	1678	Lubbock, TX	35	690
	(9.4)	(550)		(20.3)	(650)
Asheville, NC	13	1577	Los Angeles, CA	36	605
	(11.8)	(622)		(15.1)	(930)
New Orleans, LA	14	1565	Birmingham, AL	37	590
	(10.8)	(570)		(25.8)	(823)
Fall River, MA	15	1549	Jersey City, NJ	38	573
	(16.5)	(795)		(29.7)	(984)
Danbury, CT	16	1498	Fresno, CA	39	542
	(22.1)	(1009)		(24.6)	(773)
Amarillo, TX	17	1475	Roanoke, VA	40	518
	(16.9)	(795)		(16.7)	(490)
Jacksonville, FL	18	1463	Columbia, MO	41	464
	(13.1)	(630)		(22.5)	(667)
San Francisco, CA	19	1416	El Paso, TX	42	438
	(16.4)	(796)		(25.8)	(787)
San Jose, CA	20	1403	Savannah, GA	43	428
	(16.2)	(740)		(20.8)	(600)
New Britain, CT	21	1389	Richmond, VA	44	398
	(23.1)	(1003)		(20.4)	(575)
Lake Charles, LA	22	1388	Topeka, KS	45	383
	(15.9)	(725)		(14.4)	(392)
New Bedford, MA	23	1316	Baton Rouge, LA	46	376
	(17.9)	(765)		(18.9)	(540)

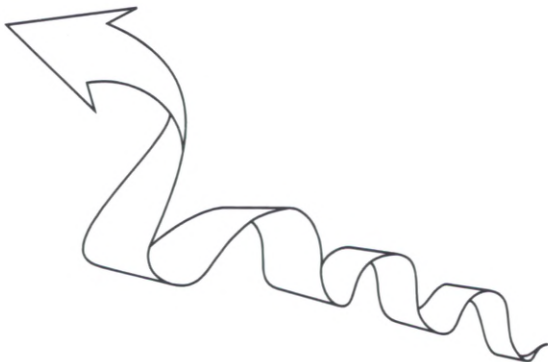
City ^a	Ranking	Index Value	City ^a	Ranking	Index Value
Albuquerque, NM	47 (23.4)	365 (673)	Decatur, IL	72 (18.4)	-161 (495)
Memphis, TN	48 (20.2)	325 (576)	Colorado Springs, CO	73 (22.0)	-165 (598)
Orlando, FL	49 (20.0)	308 (545)	Lincoln, NE	74 (18.1)	-185 (470)
Fort Wayne, IN	50 (16.1)	303 (437)	Altoona, PA	75 (27.7)	-187 (820)
Evansville, IN	51 (16.5)	286 (455)	Huntsville, AL	76 (19.1)	-199 (519)
Pittsburgh, PA	52 (27.4)	275 (846)	Anderson, IN	77 (18.2)	-234 (458)
Fayetteville, NC	53 (19.8)	274 (543)	Oklahoma City, OK	78 (24.4)	-257 (694)
Mobile, AL	54 (24.7)	250 (712)	Billings, MT	79 (26.7)	-285 (786)
Wichita, KS	55 (17.7)	246 (474)	Syracuse, NY	80 (24.8)	-301 (707)
Lynchburg, VA	56 (16.3)	241 (439)	Columbus, GA	81 (22.4)	-305 (634)
Worcester, MA	57 (21.6)	216 (599)	Buffalo, NY	82 (27.1)	-314 (806)
Austin, TX	58 (23.7)	180 (666)	Canton, OH	83 (14.8)	-340 (375)
Lawton, OK	59 (21.0)	178 (578)	Omaha, NE	84 (12.8)	-379 (337)
San Antonio, TX	60 (25.7)	110 (740)	Springfield, IL	85 (14.0)	-409 (362)
Waterbury, CT	61 (24.1)	107 (684)	Miami, FL	86 (29.1)	-445 (925)
Springfield, OH	62 (14.1)	101 (363)	South Bend, IN	87 (15.6)	-468 (430)
Jackson, MS	63 (18.7)	18 (504)	Salem, OR	88 (21.1)	-488 (604)
Chattanooga, TN	64 (18.9)	-41 (496)	Tulsa, OK	89 (13.7)	-496 (377)
St. Joseph, MO	65 (17.9)	-53 (479)	Portland, ME	90 (26.5)	-498 (812)
Pueblo, CO	66 (21.0)	-89 (564)	Akron, OH	91 (15.8)	-520 (438)
Manchester, NH	67 (26.5)	-100 (765)	Harrisburg, PA	92 (24.3)	-537 (724)
Terre Haute, IN	68 (15.4)	-112 (404)	Cincinnati, OH	93 (16.8)	-544 (484)
Bakersfield, CA	69 (27.6)	-120 (807)	Cedar Rapids, IA	94 (18.1)	-544 (529)
Macon, GA	70 (16.9)	-140 (453)	Indianapolis, IN	95 (16.3)	-600 (477)
Charleston, WV	71 (23.5)	-158 (647)	Reno, NV	96 (29.1)	-639 (977)

City ^a	Ranking	Index Value	City ^a	Ranking	Index Value
Sioux City, IA	97 (17.9)	-675 (553)	Muncie, IN	114 (12.9)	-1373 (595)
Dayton, OH	98 (18.2)	-699 (532)	Ann Arbor, MI	115 (14.9)	-1450 (697)
Des Moines, IA	99 (14.0)	-700 (440)	Cleveland, OH	116 (10.9)	-1492 (560)
Trenton, NJ	100 (21.7)	-715 (679)	Rockford, IL	117 (7.0)	-1532 (399)
Philadelphia, PA	101 (20.7)	-736 (813)	Peoria, IL	118 (6.5)	-1634 (411)
Louisville, KY	102 (13.3)	-794 (429)	Spokane, WA	119 (11.6)	-1815 (728)
Columbus, OH	103 (11.6)	-811 (384)	Portland, OR	120 (8.7)	-1874 (607)
Seattle, WA	104 (25.1)	-816 (848)	Kansas City, MO	121 (5.4)	-1900 (441)
Rochester, NY	105 (20.8)	-842 (671)	Atlanta, GA	122 (9.7)	-1916 (671)
Tacoma, WA	106 (21.7)	-846 (723)	Hartford, CT	123 (13.9)	-1931 (871)
Mansfield, OH	107 (20.4)	-965 (710)	Baltimore, MD	124 (9.4)	-1934 (662)
Boise, ID	108 (13.6)	-972 (486)	Newark, NJ	125 (9.8)	-2477 (914)
Toledo, OH	109 (12.9)	-1013 (479)	Las Vegas, NV	126 (9.0)	-2832 (1027)
Boston, MA	110 (18.3)	-1067 (703)	Grand Rapids, MI	127 (2.6)	-2947 (589)
Minneapolis, MN	111 (20.8)	-1147 (816)	Saginaw, MI	128 (1.4)	-3668 (646)
Chicago, IL	112 (17.3)	-1209 (1031)	Detroit, MI	129 (1.1)	-4153 (751)
Tuscaloosa, AL	113 (13.7)	-1259 (584)	Flint, MI	130 (1.2)	-4241 (786)

^aCertain cities, such as New York and St. Louis, were not included in the analysis because of lack of data.

^bThe numbers in parentheses in column 2 are estimated standard errors, which were calculated using a sample of 100,000 simulated rankings. Housing and wage coefficient vectors were drawn from the relevant normal distributions implied by the appropriate regression analysis. Full implicit prices and associated quality-of-life rankings were calculated for each set of simulated coefficient vectors. The reported standard error for a city ranking is the standard deviation in the sample of the given city's simulated rankings.

^cThe numbers in parentheses in column 3 are estimated standard errors of the index values.



Activist Monetary Policy for Good or Evil?

The New Keynesians vs. the New Classicals

*Tom Stark and Herb Taylor**

Economic analysts and policy practitioners argue endlessly about how long it takes for monetary policy actions to affect output or employment, how long the effects will last, or how large they will be. But underneath it all, the truth is that economists cannot agree on

how monetary policy affects the real economy in the first place. Theoreticians are offering two different explanations, each with its own implications for the way monetary policy ought to be conducted.

Perhaps the most popular explanation for money's impact was first proposed about 15 years ago by a group of economists now known as the New Classicals. These economists see episodes of money affecting economic activity as temporary aberrations that occur only when monetary policy actions happen to catch the

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public by surprise. Because they see these episodes as harmful, the New Classical economists think that central banks should avoid such surprises. They think that a central bank should just announce a simple money growth plan and stick to it. Such a policy, they say, would minimize economic disruptions and make inflation predictable.

In the last few years a group of economists labeled the New Keynesians has begun mounting a challenge to the New Classical view. The New Keynesians claim that under the right circumstances even widely publicized monetary policy actions can have a sustained impact on output and employment. And they claim that this impact can be used to help counteract what they see as the economy's tendencies toward excessive volatility and unemployment. So the New Keynesians think that a good central bank conducts an activist monetary policy—it actively manages the supply of money and credit to keep the economy close to full employment.

Which side is right? Is an activist monetary policy good or evil? Neither side has all the answers, but both command serious attention in a very important policy debate.

THE NEW CLASSICALS' CASE AGAINST ACTIVIST POLICY

Like the great Classical economists of the last century, the New Classics see the market system naturally bringing the economy to its peak level of efficiency. They see markets as a network of competitive auctions in which prices respond quickly and completely to changes in economic conditions. Basing their decisions on these market prices, households and firms automatically deploy the economy's real

resources—its labor, raw materials, factories, and equipment—fully and efficiently. Activist monetary policy has no place in this world. Policy actions designed to alter the pattern of economic activity are ineffective and unnecessary.

Competition among many small households and firms makes the Classical economy efficient. In the Classical system, overall supply and demand conditions determine the prices people pay and the wages they earn. No business or individual is big enough to manipulate market conditions to its own advantage. Any firm that tried to charge above-market prices for its product would lose all of its customers to competing producers.

Any worker that held out for above-market wages would lose his or her job to competing workers.

This environment may sound harsh, but it gives firms the incentive to perform at peak efficiency. Given the wage-price structure, each firm faces just one basic decision: how much to produce. And in its quest for profits, the firm will automatically choose a production level that balances consumer preferences with resource availability.

Consider the typical firm. For each unit it produces, it gets the market price. It also incurs costs equal to the price of the requisite labor and materials. The more it produces, the more it is prone to operating inefficiencies that push up per-unit production costs. At some point, the cost of producing another unit would exceed the product's market price. Expansion beyond that point would cut into profits, so the firm expands no further. Following this strategy not only maximizes the firm's own profits, it promotes overall economic efficiency as well.

The New Classics: Monetary policy might affect economic activity, but don't count on it.

The product's market price measures its worth to the consumer. Wages and other input prices measure workers' and resource suppliers' valuation of their time and materials. So, in effect, the firm is producing only the units whose benefits to the consumer justify the burden their production imposes on workers and other resources.

Of course, economic conditions are constantly changing. Consumers' preferences shift away from one product and toward another; a new production technology comes along and displaces an old one. But in the Classical view, market prices and wages adjust quickly to changes in supply and demand, providing firms with the incentives to keep the economy's resources fully and efficiently employed. With the market system allocating resources so effectively, there is no reason to use monetary policy to alter the level of economic activity. But it's just as well. Because in the Classical world, any attempt at activist policy would fail.

The Classical economists developed the theory that money has no effect on economic activity. Clearly, prices are crucial to people's economic decisions in the Classical system. And usually we think of prices being quoted in terms of money. Yet the Classical economists maintained that changing the money supply would have no impact on output or employment. How can this be?

The Classics claimed that when the money supply changed, all prices and wages would change in equal proportion, leaving the relationships among them unchanged. Consequently, households and firms would stick by their original employment and production decisions, leaving the real economy unaffected.¹

¹To see this, suppose that initially bread costs \$1 and workers earn \$6 an hour, making a loaf of bread worth 10 minutes' work. If both prices and wages double, bread goes to \$2 and wages go to \$12, but a loaf of bread still trades for 10 minutes' work.

Suppose, for instance, that the central bank pumps up the money supply. This increases the overall demand for goods and services, pushing up market prices. But workers recognize that higher prices erode the purchasing power of their wages. So they are willing to work the same hours and expend the same effort only if they get wage increases commensurate with the increase in market prices. Firms, competing for workers, agree to pay for the raises out of their inflated sales revenues, and they maintain their original level of employment and output. All that remains of the money supply increase are higher prices and wages.

The Classical economists recognized that, as a practical matter, these adjustments to a change in the money supply would not always proceed as smoothly as their theoretical analysis might suggest. But their message comes through clearly enough: the money supply ultimately affects the level of prices, not the level of economic activity.

The New Classical economists reinvigorated the Classical argument that monetary policy is generally ineffective. The Classical perspective on money's role in the economy was among the casualties of the Great Depression. The Keynesian Revolution swept through the economics profession and gave birth to the activist monetary policies of the postwar period. But in the early 1970s, some economists resurrected the Classical viewpoint. In fact, by combining parts of the Classical tradition with the notion of "rational expectations," these New Classical economists emerged with an even stronger position: monetary policy cannot systematically affect the real economy. Instances in which monetary policy actions alter employment or output levels are occasional, random events.

The New Classical analysis of money's impact on the economy is a variation on the old adage "knowledge is power." In keeping with their Classical tradition, the New Classics main-

tain that markets are competitive enough to drive the economy to full employment, and responsive enough to keep it there in the face of shifting economic conditions. To this they simply add that a key element in markets' responsiveness is market participants acting upon rational expectations about where the economy is headed. The New Classicals assume that market participants understand the underlying structure of the economy and use the available data on current economic conditions to formulate accurate forecasts about future economic performance. Presumably, participants' actions in the marketplace today reflect those rational expectations.

The New Classicals go on to argue that market participants pretty much know what to expect from the monetary authority. Competitive market prices and wages automatically reflect those expectations, thus neutralizing the impact of any anticipated policy actions on output and employment. Admittedly, policy actions that take people by surprise can affect economic activity. But, the New Classicals point out, such "surprises" must, by definition, be occasional and without pattern. So the monetary authority cannot systematically influence the level of output or employment.

The New Classicals emphasize that even when a monetary policy action does take people by surprise, its impact is temporary. It lasts only as long as it takes for the markets to find out what the central bank has done and respond. And in the interim, people—particularly workers—are not necessarily better off.²

Textbook versions of the New Classical view assume that product prices respond to sudden

shifts in economic conditions more quickly than wages do. For one thing, wage agreements, whether formal or informal, may cover several months, a year, or even several years—all periods much longer than it takes for product prices to change. Even where wages are set more frequently, workers usually agree to a certain wage without the benefit of complete information on the prices of the products they intend to buy. Consequently, when an unexpected monetary expansion comes along and pushes up product prices, firms find they can retain, and perhaps even expand, their work force without raising wages very much. And they make the most of the opportunity. They pay a slightly higher wage, hire more workers, produce more output, and sell it at the new, higher prices. Hence the expansionary monetary policy boosts aggregate employment and output.³

Of course, the workers eventually catch on. They shop. They see the higher product prices. And the next time they negotiate a wage, they demand compensation for their loss in purchasing power. Once wages rise as much as prices have, firms revert to their original hiring and production patterns. So money is, in the last analysis, neutral.

Overall, the New Classical analysis of money's impact on the economy casts activist monetary policy in a very dim light. First of all, the New Classicals see the economy exhibiting a strong

²Thomas Sargent and Neil Wallace, in their article "'Rational' Expectations, the Optimal Monetary Instrument and the Optimal Money Supply Rule," *Journal of Political Economy* (April 1975) pp. 241-54, present a clear statement of the New Classical notion that expected monetary policy actions have no effect on economic activity.

³Analyses stressing the role of wage contracts in limiting short-run wage flexibility can be found in Stanley Fischer's "Long-Term Contracts, Rational Expectations, and the Optimal Money Supply Rule," *Journal of Political Economy* (February 1977) pp. 191-205, and John Taylor's "Aggregate Dynamics and Staggered Contracts," *Journal of Political Economy* (1980) pp. 1-24. The idea that wages adjust imperfectly because workers are not completely aware of current product prices is more consistent with the original New Classical formulation by Robert Lucas in "Some International Evidence on Output-Inflation Tradeoffs," *American Economic Review* (June 1973) pp. 326-34.

tendency toward full employment that makes it unnecessary for the monetary authority to focus on the level of economic activity. But even beyond that, attempts to conduct an activist policy do more harm than good. An expansionary policy anticipated by the public simply creates instant inflation. If, as occasionally happens, the policy is not anticipated by the public, it affects output and employment essentially by tricking people into producing at a pace they would not have chosen if they were fully informed.

Given this perspective, the New Classical's advice to policymakers is straightforward: do not try any surprise moves. Choose a simple money growth plan consistent with your inflation goals. Announce the plan far enough in advance to allow markets to react. Then just follow the plan.⁴

THE NEW KEYNESIANS' CASE FOR AN ACTIVIST POLICY

The New Keynesians don't see things quite the way the New Classical do. The New Keynesians see an economy in which firms face only limited competition. These imperfectly competitive firms restrict their output to keep prices high and respond only partially to shifting demand conditions. As a result, the economy shows the tendencies toward underemployment and price "stickiness" that are very much a part of the traditional Keynesian perspective. The

New Keynesians believe that in this world, regardless of how people form their expectations, monetary policy can and should be used to expand the level of economic activity.

Without strict market discipline, firms are less likely to achieve maximum economic efficiency. The difference between the Classical competitive firm and the imperfectly competitive firm is simple: the competitive firm must take the market price of its product as a given, whereas the imperfect competitor has the power to set price to its own advantage. And the right price structure for the imperfect competitor is not necessarily best for the overall economy.

In the competitive market, each firm is small and its output is nothing special. So its decision about how much to supply has no appreciable impact on the market price. If Farmer Jones decided to withhold some of his wheat from the market, how far could he drive up the price of wheat? If he tried to charge extra for Farmer Jones Wheat, who would pay the premium? No one.

Imperfect competitors have larger operations. Their product may have some special characteristic—real or imagined—that differentiates it in the mind of consumers. For these firms, size or special niche gives them some power over the price of their products. If General Mills were willing to cut its supply of breakfast cereal, cereal prices would rise. And if it decides to increase the price of Wheaties®, some people would be willing to pay the premium.

In short, the imperfectly competitive firm has some advantage that frees its pricing structure from the strict discipline of the market. Of course, the firm is still subject to the Law of Demand: the higher the price it sets, the fewer

The New Keynesians: Monetary policy can and should be used to affect real activity.

⁴The New Classical argument for this approach to monetary policy has most recently been articulated by Bennett McCallum in *Monetary Economics: Theory and Policy* (Macmillan, 1989).

units it will sell. So it must choose between setting a high price and selling to a limited number of customers, or setting a low price and grabbing the lion's share of the market. But one thing is for sure: it will not set as low a price as a Classical competitive market would establish. It will always find it profitable to set a higher price and maintain it by keeping output below competitive levels.

Exercising market power may make individual firms more profitable, but it imposes costs on society as a whole. From the social standpoint, imperfect competitors' prices are too high and their production is too low. Society would be better off if these firms would cut their prices to levels more consistent with resource costs. This would expand sales, production, and employment to more socially desirable levels.

Neither the notion of imperfect competition nor its impact on social welfare are original to the New Keynesians.⁵ But the analysis offers them a rationale for their belief that the economy tends to underemployment. And it offers them something more—a jumping-off point for a new theory of how monetary policy can help alleviate the problem.

The New Keynesians believe monetary policy can work on imperfect competitors. Traditional theories of imperfect competition can explain underemployment, but they cannot explain why monetary policy should be effective in combating it. As long as prices and wages respond flexibly, the monetary authority is still powerless to affect firms' output and employment decisions. But the New Keynesians add a new wrinkle to the theory of imperfect competition: imperfectly competitive firms'

prices are not as flexible as competitively established market prices. So real activity may respond to monetary policy actions.

In the Classical world, competitive markets adjust prices quickly and completely to every shift in economic conditions. In a world of imperfect competition, firms must set prices. When demand shifts are relatively small, these firms may not find changing prices worthwhile. It may be more profitable to maintain current prices and adjust production accordingly.

Economists have labeled the costs firms bear when they change their product prices "menu costs." That name captures the most obvious cost of repricing: printing new menus and catalogs and changing price tags and signs. But there are other costs as well. To find the new profit-maximizing price, the firm must estimate the likely nature, magnitude, and duration of the shift in customer demand. That kind of research and analysis uses up resources. In addition, frequent price changes may alienate customers and cost the firm some of its good will.

It's difficult to say how large menu costs are. It may seem that, as a practical matter, the cost of changing prices ought to be relatively small. But the New Keynesians emphasize that the benefits to changing prices can be small for imperfect competitors, too. So even small menu costs can thwart a price change.

When the demand for an imperfect competitor's product increases, the firm can respond in any number of ways. At one extreme, it can take the opportunity to raise its prices without losing sales. At the other extreme, it can hold the line on prices and take the opportunity to pick up sales volume. If the demand shift that the firm is experiencing is large, then choosing the right strategy can have a substantial impact on profits. But if the demand shift is relatively small, there is little advantage to choosing one over the other. A firm that simply maintains its original prices will not get as much as it could

⁵The term "imperfect competition" is used here as a convenient expression for "monopolistic competition," a market model that can be traced back to the work of E.H. Chamberlin in the 1930s. Texts such as Paul Samuelson's *Economics* (McGraw-Hill) provide readable discussions of this market type.

on each unit, but it will sell more units. So its profits will not be substantially compromised.⁶ Once menu costs—even small ones—enter the equation, they can tip the scales in favor of maintaining current prices. Thus the profit-maximizing imperfect competitor may choose to accommodate a small demand shift without changing the price of its product.

This tendency for prices to be sticky in an imperfectly competitive environment affords the central bank some opportunity to influence overall output and employment. Suppose the central bank increases the money supply and thereby boosts overall demand for goods and services. Further suppose that individual firms decide that the demand increase is too small to make a price adjustment profitable. Instead, they decide to hold the line on prices and fully accommodate the increased demand for their products. In order to increase their output, they begin to hire more workers. So both output and employment pick up. Meanwhile, since product prices are not rising, workers are not demanding an inflation adjustment to their wages, so both wages and prices remain relatively constant.⁷

The New Keynesians recognize that the central bank's ability to raise output and employment

in this way is circumscribed. If monetary policy actions create too large a demand shift, firms are more likely to raise prices than increase output. Furthermore, every firm faces different demand conditions and menu costs. Some will have lower thresholds for changing prices than others. So almost any policy action is likely to affect aggregate prices as well as aggregate output. In short, the New Keynesians acknowledge that a central bank cannot engineer dramatic or persistent increases in output and employment without driving up prices and wages. Nonetheless, New Keynesian analysis suggests that an activist policy can be successful, if used judiciously.

Overall, the New Keynesians see the potential for an activist monetary policy to improve the performance of an imperfectly competitive economy. Monetary policy may not be a cure-all, but it can help offset what New Keynesians see as the economy's chronic bias toward underproduction and underemployment in modern, imperfectly competitive economies.

Add to this underlying bias the fact that the economy is subject to sudden shifts in overall demand, and the New Keynesians' case for an activist monetary policy seems even stronger. For if price stickiness accentuates the impact of monetary policy on economic activity, it also accentuates the impact of other demand shifts as well. Thus a sudden decline in overall demand could drop the economy well below its potential level of performance. This suggests that monetary policymakers should be alert to these shifts and stand ready to offset them.⁸

WHO'S RIGHT?

Both the New Classics and the New Keynes-

⁶This idea is sometimes called the PAYM insight because it emerged from the work of economists Michael Parkin, George Akerlof, Janet Yellen, and N. Gregory Mankiw. Specific references are to Parkin's "The Output-Inflation Tradeoff When Prices Are Costly to Change," *Journal of Political Economy* (1986) pp. 200-24; Akerlof and Yellen's "Can Small Deviations From Rationality Make Significant Differences to Economic Equilibria?" *American Economic Review* (September 1985) pp. 708-21; and Mankiw's "Small Menu Costs and Large Business Cycles: A Macroeconomic Model of Monopoly," *Quarterly Journal of Economics* (May 1985) pp. 529-37.

⁷Olivier Blanchard and Nobuhiro Kiyotaki develop this argument formally in "Monopolistic Competition and the Effects of Aggregate Demand," *American Economic Review* (September 1987) pp. 647-66.

⁸Prospects for this kind of policy get some theoretical support in Lars Svensson's "Sticky Goods Prices, Flexible Asset Prices, Monopolistic Competition, and Monetary Policy," *Review of Economic Studies* (1986) pp. 385-405.

ians offer explanations for monetary policy's impact on the economy. But the New Keynesian approach certainly casts activist monetary policy in a more positive light. Which explanation should we believe? One way to evaluate competing theories is to "let the data decide." But at this point, empirical tests do not provide a clear answer.

The New Classical theory has been around longer and been subjected to more empirical study. The results are not favorable to the hard-line New Classical view that only unexpected policy actions affect real activity. Statistical analyses seem to show output and employment responding to anticipated policy actions too. But, ironically enough, these kinds of results have prompted some New Classicals to support a theory that attributes even less potency to monetary policy actions: the *real business cycle* theory. According to this theory, monetary policy never causes fluctuations in economic activity. Rather, anticipated fluctuations in the economy cause the public to increase or decrease their demand for money. The central bank and the financial system simply accommodate these demand fluctuations.⁹

The New Keynesian theory is relatively new, and empirical evidence is scantier. There is some supportive evidence, however. In countries where inflation is relatively low, which would suggest that expansionary monetary policies have not been pursued too aggressively, policy shifts seem to have more impact on real activity—as the New Keynesians would predict. But tests of the New Keynesian model are really in too early a stage to provide a

convincing case one way or another.¹⁰

Empirical issues aside, there are unsettling aspects to both the New Classical and the New Keynesian models. Perhaps the most unsettling theoretical aspects have to do with the functioning of the labor market. Both groups admit they have trouble explaining why monetary policy actions that affect output have such a large effect on employment and such a small effect on wages. According to the New Classical theory, an unexpected increase in product demand induces firms to produce more because it pushes the product price up before wages have had a chance to rise in response. But firms need more workers in order to expand production. Won't that increased demand for labor itself push up wages?

The New Classicals' answer: some, but not much. True to their Classical perspective, they maintain that labor markets are competitive. They simply assume that labor supply is very sensitive to wage changes. Thus when labor demand increases, it evokes many more hours of work at only a slightly higher wage. The problem is that, as a practical matter, willingness to work does not seem to be all that sensitive to wage changes.

New Keynesians face a similar conundrum. According to them, when firms face a small increase in product demand, they hold the line on prices and expand output. Again, to expand output, firms need more workers. Granted, product prices are not increasing, so there is no inflation pressure on wages. But won't firms have to raise the wage they pay in order to

⁹Frederic Mishkin provides a more complete discussion of the evidence on the New Classical hypothesis in *A Rational Expectations Approach to Macroeconometrics* (University of Chicago Press, 1983). For a good discussion of the real business cycle view and its monetary policy implications, see "Monetary Policy with a New View of Potential GNP," by John Boschen and Leonard Mills, this *Business Review* (June/July 1990) pp. 3-10.

¹⁰This New Keynesian result is presented by Laurence Ball, N. Gregory Mankiw, and David Romer in "The New Keynesian Economics and the Output-Inflation Trade-Off," *Brookings Papers on Economic Activity* (1988:1) pp. 1-65. For an up-to-date discussion of the empirical evidence on the New Keynesian economics, as well as a good evaluation of its theoretical underpinnings, see Robert Gordon, "What Is New Keynesian Economics?" *Journal of Economic Literature* (September 1990) pp. 1115-71.

induce more people to work? The New Keynesians' answer is no. True to the Keynesian tradition, they claim that there is a pool of involuntarily unemployed workers from which firms can always draw workers at the going wage. But to explain the involuntary unemployment, they must resort to some unconventional theories of the labor market.

Imperfectly competitive firms charge high prices, which restricts both output and employment. Nonetheless, the New Keynesians claim, these firms tend to pay the people they do employ relatively high wages. Different economists offer different reasons for this tendency. Proponents of the "efficiency wage" theory emphasize that by paying workers more than they would expect to earn if they had to go look elsewhere for a new job, the firm gives the worker the incentive to perform more effectively. Proponents of the "insider/outsider" theory emphasize that employees whose experience on the job is valuable to the firm can exact wage concessions from the firm. In either case, with wages high and employment opportunities limited, there is routinely a pool of willing workers unable to get jobs. Whenever firms want to expand output, they can tap this pool for workers without increasing the wage they pay.¹¹

In short, both the New Classicals and the New Keynesians have a long way to go before either can proclaim their approach to be theoretically complete.

THE ACTIVIST POLICY DEBATE RENEWED

When the New Classical economics came on the scene in the early 1970s, it jolted academic economists and policymakers as well. The New Classicals were trying to explain precisely why monetary policy actions affect real activity. They concluded that money temporarily affects output and employment by tricking people into deviating from their preferred activity levels. This conclusion hardly cast activist monetary policy in the most favorable light, but there was little theoreticians could offer in rebuttal.

Now the New Keynesian school is offering an alternative explanation for money's impact on economic activity. That analysis, based on theories of imperfect competition, looks more favorably on activist monetary policy. The New Keynesians conclude that the economy tends toward underemployment and that an activist policy can help overcome the problem.

The New Keynesians can hardly claim to have overcome the New Classical paradigm. But they have reinvigorated the battle over the efficacy of an activist monetary policy.

¹¹Lawrence Katz provides an excellent overview of these modern labor market theories in "Some Recent Developments in Labor Economics and Their Implications for Macroeconomics," *Journal of Money, Credit, and Banking* (August 1988, Part 2) pp. 507-30.



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