The Impact of Mergers and Concentration on the Economy

by

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Abstract

The recent wave of rapid mergers appears to be due to: (1) the deregulation of specific industries since 1978, and (2) the removal and the relaxation of the U.S. Justice Department's antitrust rules against vertical and horizontal mergers in 1982 and 1984, respectively. The purpose of this research is to investigate quantitatively the impact of business mergers and concentration on economic performance, measured by the growth of nominal and real GNP. Using a distributed lag regression model, the findings suggest that increased economic concentration resulting from mergers can slow the growth of output and employment. Therefore, if economic growth is important, policy makers should prevent, or at least slow down this increase in economic concentration.

Today, large corporations dominate the American economy. Some giant corporations straddle several sectors of the economy as diversified "conglomerates." This trend is predominantly due to mergers rather than to internal growth of firms. For instance, the share of the assets of all 200 of the largest manufacturing firms relative to total manufacturing firms increased significantly from 47.7 percent in 1950 to 60.4 percent in 1970. However, the same measure declined slightly to 59.7 percent in 1980.[1]

Three periods of intensive merger movements transformed the economy into this current state of high concentration (Simic, 1984). The first, a horizontal merger movement—mergers between competitors—started in 1897 and ended in 1903. This period transformed the economy into a true national market economy. The second major merger movement, mainly a horizontal one, occurred during 1924 to 1931, resulting in oligopolies dominating industries. The third began after World War II and continued through the early 1970s until the decline of the stock market. This conglomerate merger movement diversified the structure of big business.

Recently, under the Reagan administration, a new wave of mergers began. Although much new anti-trust legislation has been passed in the years since the first merger movement of 1897-1903, it has failed to halt increasing concentration in business and industry. The Council of Economic Advisors (1985) gave two reasons for the current wave of mergers: (1) The removal and the relaxation of the U.S. Justice Department's antitrust rules against vertical and horizontal mergers in 1982 and 1984 respectively; (2) the wave of deregulation of several industries since 1978.

Generally, economists advocate competition, oppose monopoly power and business concentration. It is argued that business concentration results in the concentration of economic and, therefore, political power. One of many studies of concentration, Neuman, Bobel and Haid (1985), showed that a given degree of domestic concentration brings about a higher degree of market power during the upswings of a business cycle (a seller's market), compared to times of lower economic activity (a buyer's market), when market power is reduced, in particular by increased import competition.

Aggregate concentration is a measure of the degree of competition and concentration of economic power in the economy as a whole.[2] Aggregate concentration has been increasing for the largest 200 firms in the U.S. since 1947, the first year for which the concentration measure was calculated (Statistical Abstract of the U.S.). Curry and George (1983) noted that the general trend of U.K. concentration is steeper today than that of the U.S. The U.K. concentration started at the turn of the century at a lower initial level compared to the U.S. concentration, but in the 1970s was at a distinctly higher level. It has been argued that mergers have been the dominant factor in increasing aggregate concentration and economic power (Curry and George, 1983).

Allan Gruchy (1985) concluded that the prospects for a coordinated and sustained attack on the problems of corporate concentration and restructuring of industry in the United States are not good. Nevertheless, it is important to investigate the impact that economic concentration has on the economy as a whole. As of the present, the issue of the effect of aggregate concentration on the growth of the economy has received little attention.

It is also widely claimed by economists that monetary and fiscal policy have an impact on the performance of the economy. Monetarists argue that monetary policy has a positive effect on the performance of the economy in the short run and a neutral effect in the long run. On the other hand, the Keynesian scholars argue that fiscal policy has a stronger effect than monetary policy on the economy.

To test the monetary and fiscal policy effects, different models and procedures have been used by these two camps to point out

their views. One of the well-known models used by the monetarists is the St. Louis equation. This model is a reduced form distributed lag equation that has evolved over many years. The estimated results of this equation conclude that monetary policy is a more powerful tool than fiscal policy.

Since both monetary and fiscal policy are claimed to influence the economy, a model that includes the aggregate concentration ratio, monetary policy and fiscal policy impact on the economy is employed in this study. The objective of this research is to estimate the impact and the significance of each of these three variables on the performance of the economy, measured by the growth of nominal and real Gross National Product (GNP).[3]

The Model

A revised version of the St. Louis model that is used by some monetarists has been employed for the estimated measurement of the impact of concentration on the U.S. economy. In this way, the impact of these three variables—two of them already tested by the St. Louis equation—will be estimated and compared. Before presenting the model of this study a brief history and description of the St. Louis model is explained.

Since its first introduction (Andersen and Jordan, 1968), the St. Louis equation has changed. Its original specification was in the form of a first difference polynomial distributed lag as follow:

$$DYt = a + \sum_{i=0}^{4} bi\, DMt-i + \sum_{i=0}^{4} ci\, DGt-i + \sum_{i=0}^{4} di\, DRt-i + et, \qquad (1)$$

where Y = Nominal GNP
M = Money supply, M1
G = High employment federal government expenditures[4]
R = High employment federal government revenues.
e = error term.

The coefficients a, b, c, and d were the parameters of the equation, and the D's were first differences, that is DY = Yt − Yt−1. The parameters of each lagged variable were constrained to lie on a fourth degree polynomial. The model was also constrained with both endpoint parameters to equal zero.

In a subsequent article DR in the equation (1) was excluded from the equation, but other variables and constraints were the same (Andersen & Carlson, 1970). Finally, the St. Louis equation changed into a growth rate specification (Carlson, 1980) as follow:

$$\dot{Y}t = a + \sum_{i=0}^{4} bi\, \dot{M}t-i + \sum_{i=0}^{4} ci\, \dot{G}t-i + et, \qquad (2)$$

where dots over M and G represent the annual rate of growth. Other variables are the same as in equation 1.

To test the effect of aggregate concentration on the economy, equation 2 has been employed, with an additional independent variable, the aggregate concentration ratio. The structure of such an equation is

$$\dot{Y}t = a + \sum_{i=0}^{4} bi\, \dot{M}t-i + \sum_{i=0}^{4} ci\, \dot{G}t-i + d\,Ct + et, \qquad (3)$$

where C represents the aggregate concentration ratio; all other variables and constraints are the same as before; that is, the parameters of M's and G's are constrained to lie on a fourth degree polynomial and both endpoint parameters of M's and G's to equal zero.

In sum, the concentration ratio has been added to the current specification of the St. Louis model to test the impact of aggregate business power on the performance of the economy, estimated by the growth of nominal and real GNP.

Empirical Results

Quarterly data of 1971 to 1983 for the growth of GNP were regressed on the current and four quarter lagged growth of money supply, M1, the current and four quarter lagged growth of high-employment federal government expenditure, and current and one-quarter-lagged annual data for aggregate asset concentration by the 200 largest corporations (CR 200), calculated by the U.S. Bureau of the Census. It should be noted that the time period of the data for the St. Louis equation is from II/1962 to III/1982, a longer period of time than the data in this study, which is from I/1971 to IV/1983.[5] This study investigates the estimated effect of aggregate concentration separately on both the nominal and real GNP.

Impact on Nominal GNP

The results of the Almon (1965) distributed lag multiple regression for the nominal GNP (equation 3) are shown in Table 1. The current specification of the St. Louis equation is also shown in the table for comparison. All the variables in both models (the St. Louis and the model used in this study) are in nominal terms.

As Table 1 indicates, the current concentration ratio, Co, is used in one equation, and the one-time-lagged concentration ratio, C-1, is employed in the other. Longer time lags of the concentration ratio, C, have been tested, but they were not significant. For both cases considered here, the impact of aggregate concentration on the growth rate of nominal GNP is negative and significant, as indicated by significant 't' values.

Surprisingly, the results also indicate that the fiscal policy impact is negative and not significant for all current and lagged growth rates of high employment government expenditures, but the monetary policy effect is strong and significant. Similarly, the results of the St. Louis equation suggest that the effect of fiscal policy is not significant. Interestingly, with the incorporation of the aggregate concentration ratio in the equation, all signs of the current and lagged money supply variables became positive and more of them appeared significant. However, the signs of all current and lagged fiscal policy effects became negative and the 't' value of most lagged government spending became more significant (see Table 1).

The results, also, suggest that the long-run effects of monetary and fiscal policies are positive and negative, respectively. These conclusions are indicated by the estimated coefficients of the sum of the money supply variables (Sum M) and the government spending variables (Sum G).

Impact on Real GNP

To investigate further the impact of aggregate concentration on the performance of the economy, the real GNP is substituted for nominal GNP in equation 3. The estimated parameters of the equation are shown in Table 2. It appears that the results of the equations for the impact on real GNP are similar to those of the impact on nominal GNP. That is, the effect of business concentration in the growth of real GNP is significantly negative. The major difference is that, for the case of the real GNP equation in table 2, the explanatory power of the equations, measured by $\bar{R}2$, has increased to 0.52 for both equations, the one using the current concentration ratio, Co., as well as the one using lagged concentration ratios, C-1. Furthermore, with respect to the effect on the real GNP, 't' values are all significant.

Again, as the estimated coefficients of the monetary policy variables show, the short-run effect of monetary policy on real GNP is positive and significant. Unexpectedly, the short-run impact of fiscal policy on real GNP, indicated by the coefficients on the G's is negative and significant. According to the results, the long-run effect of monetary policy on real GNP is positive and significant (see Sum M in Table 2). But, the sum of the estimated coefficients, Sum G, suggest that the long-run effect of fiscal policy is significantly negative.

Summary and Conclusions

The high level of economic concentration in the U.S. has occurred largely as a result of three great periods of mergers and acquisitions. Recently, a new, large-scale merger movement has begun, in spite of the existence of substantial anti-trust laws and the warnings of economists about monopoly power and increased economic concentration.

The effect of economic concentration, measured by aggregate concentration ratio, on the growth of nominal and real output have been tested in this study. The results confirm the view that economic concentration and mergers can slowdown the growth of output and employment in the economy and retard increases in the standard of living.

The reason of the economic slowdown due to economic concentration might be that the response of firms with higher concentration (and, therefore, market power) to business cycles is more of an output response than a price adjustment. This appears to be especially true during recessions.

The results of this study suggests the need for stronger enforcement of anti-trust laws and prevention of mergers that increase economic concentration. Specifically, recent mergers will likely have negative impacts on the economy in the future and should be prevented or at least slowed down.

On the other hand, the results of estimated negative signs for the aggregate concentration parameters for both nominal and real GNP growth may be because higher concentration as the result of mergers occurs during economic slowdowns. It can be argued that recession (represented by the slow growth of nominal or real GNP) is the cause of increased mergers and acquisitions and the resultant higher concentration ratios. In other words, mergers and economic concentration can be an effect rather than a cause of the economic slowdown. If that is the case, the conclusions of the results of the equation in this study are questionable and need further investigation.

Similarly, the positive relationship between the growth of the money supply and the growth of nominal and real GNP may be due to the higher demand (rather than supply) for money during expansion and lower demand for money during the recessionary phases of business cycles. In other words, as the Keynesians claim, the recessions reduce the demand for money; thus, the cause factor is the level of aggregate demand—not the size of the money supply.

Notes

1. See Concentration in Manufacturing, Census Bureau, *Statistical Abstract of the United States*. U.S. Department of Commerce, 1981, p. 541.
2. Industrial concentration ratios miss two very important dimensions of economic concentration and power: the conglomerate and aggregate concentration. Considering these two, the economic concentration and power are larger. See Dugger.
3. Nominal Gross National Product, GNP, is the market value of all final goods and services produced by the economy in one year. Real GNP is a measure of real value of all final goods and services produced by the economy in one year. Real GNP is calculated by dividing nominal GNP by the GNP deflator, a measure of inflation.
4. High employment federal government spending is total federal government spending, assuming full employment in the economy. Similarly, high employment federal government revenue is the total tax and non-tax federal revenue, assuming full employment of the labor force. The assumption of full employment in both measures is required to eliminate any (structural) changes in government spending or revenue due to the business cycles. Because during a recession (boom) government spending automatically increases (declines). Similarly, during a recession (boom) government tax collection declines (increases).
5. Aggregate concentration data for all of the earlier periods are not available.

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Table 1
Ordinary Least Squares
Estimated Results of Equation (3) for Nominal GNP

Variable	Estimated coefficients *					
	St. Louis**		This Study			
Constant	1.643	(1.07)	169.027	(2.95)	171.596	(3.11)
Mo	0.474	(3.37)	0.201	(1.76)	0.213	(1.87)
M-1	0.441	(3.09)	0.288	(2.12)	0.299	(2.22)
M-2	0.356	(2.51)	0.285	(2.72)	0.288	(2.79)
M-3	−0.179	(0.15)	0.219	(3.21)	0.213	(3.26)
M-4	0.022	(0.15)	0.115	(2.33)	0.107	(2.25)
Co			−3.569	(2.82)		
C-1					−3.630	(2.97)
Sum M	1.114	(4.69)	1.107	(2.62)	1.120	(2.79)
Go	0.108	(2.21)	−0.016	(1.27)	−0.015	(1.23)
G-1	0.034	(0.71)	−0.029	(1.94)	−0.029	(1.97)
G-2	−0.096	(2.04)	−0.037	(2.61)	−0.038	(2.72)
G-3	0.040	(0.84)	−0.036	(2.51)	−0.039	(.269)
G-4	−0.004	(0.09)	−0.245	(2.02	−0.027	(2.24)
Sum G	0.082	(0.82)	−0.142	(2.60)	−0.148	(0.27)
SE	3.58		4.61		4.56	
$\bar{R}2$	0.33		0.31		0.33	
DW	2.01		1.75		1.70	
F (5, 33)			3.00		3.21	

* t-statistics in parentheses.
** Source: Batten, Dallas & Daniel Thornton, 1983.

Table 2
Ordinary Least Squares
Estimated Results of Equation (3) for Real GNP

Variable	Estimated coefficients *			
Constant	170.614	(3.77)	164.046	(3.70)
Mo	0.228	(2.51)	0.234	(2.55)
M-1	0.321	(3.00)	0.324	(2.99)
M-2	0.313	(3.78)	0.307	(3.71)
M-3	0.235	(4.36)	0.223	(4.25)
M-4	0.120	(3.07)	0.108	(2.84)
Co	−3.762	(3.76)		
C1			−3.621	(3.69)
Sum M	1.215	(3.77)	1.195	(3.71)
Go	−0.032	(3.11)	−0.030	(2.96)
G-1	−0.049	(4.06)	−0.047	(3.98)
G-2	−0.053	(4.74)	−0.053	(4.72)
G-3	−0.045	(3.99)	−0.047	(4.08)
G-4	−0.027	(2.82)	−0.029	(3.01)
Sum G	−0.205	(4.76)	−0.206	(4.71)
SE	3.63		3.66	
$\bar{R}2$	0.52		0.52	
DW	1.69		1.67	
F (5, 33)	7.21		7.05	

* t-statistics in parentheses.