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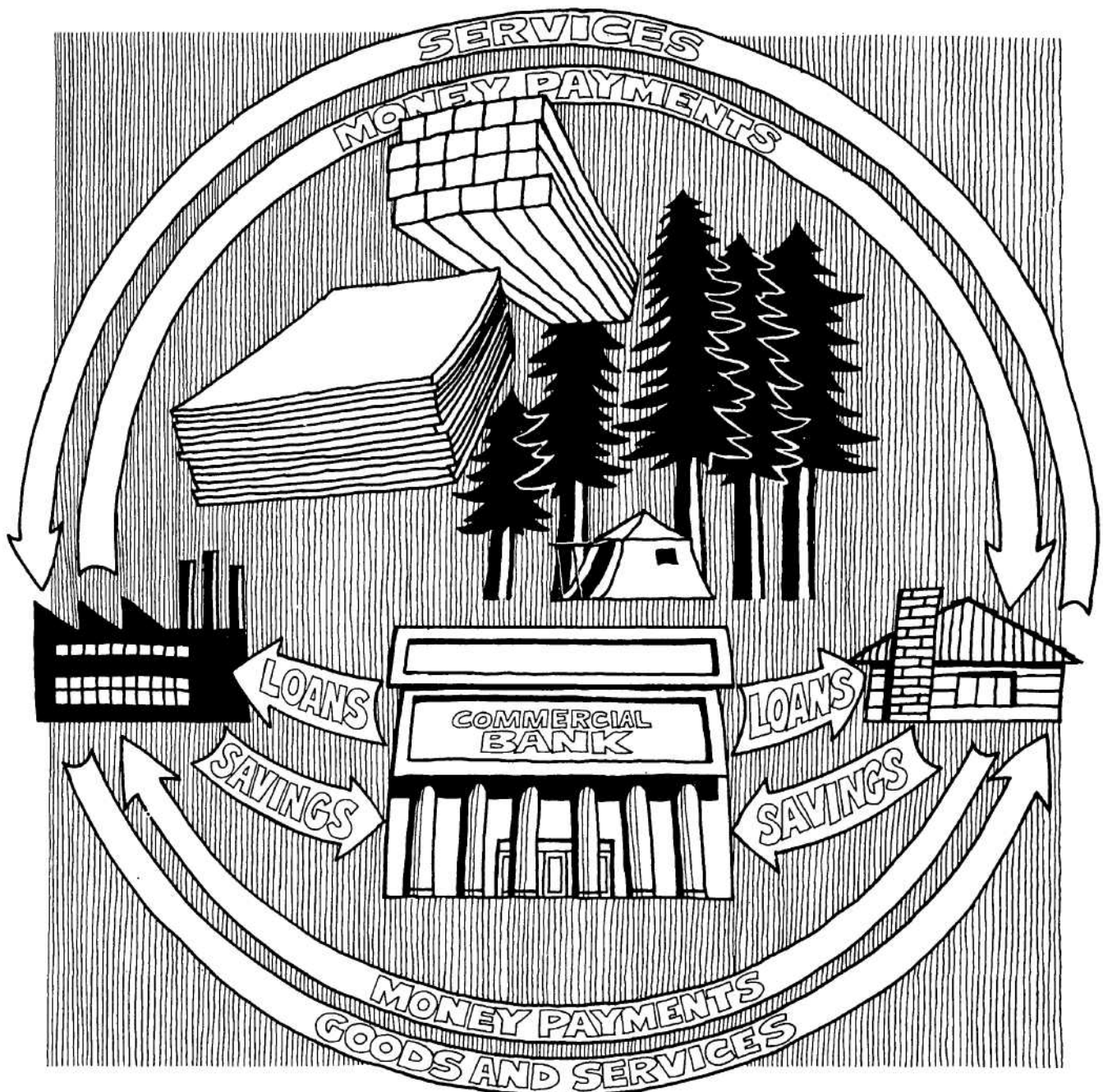
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# Stages of Growth Theory and Money Flows From Commercial Banks in Timber-Dependent Communities

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# Stages of Growth Theory and Money Flows From Commercial Banks in Timber-Dependent Communities

## Reference Abstract

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The flow of funds from commercial banks in western Oregon may indicate how a timber shortfall will affect community stability. Results suggest the inappropriateness of a single public forest management policy.

Keywords: Economic theory (-forest management, economic impact, economic growth, management planning (forest), policy (forest), Oregon (western).

## Research Summary Research Paper PNW-279 1980

Barring a major change in public and private forest management policy, western Oregon can anticipate a substantial shortfall in log production during the next two decades. The extent to which this shortfall might influence employment is uncertain. A continuing influx of new industries could provide jobs for workers laid off by the wood-using industries. But it is quite likely not all communities will benefit from the expected growth of western Oregon.

Current regulations require that USDA Forest Service planning embrace the concern for community stability. Departures from the timber-base harvest schedule can be considered when a community would be adversely impacted by strict adherence to current policies. This study examines the flow of funds from commercial banks as a possible means for determining how various timber-dependent communities might respond to the anticipated timber shortfall.

Loan-to-deposit ratios and outflow elasticities were used to trace the flow of funds. Unlike the remainder of western Oregon, both indicators disclosed a protracted outflow of funds from commercial banks in the Medford and Roseburg areas.

In light of other indicators, the outflow of funds observed in the Medford and Roseburg areas is unusual. Growth in population and per capita income exceeds the average for the State of Oregon. Furthermore, lending by other major financial institutions in all of western Oregon has grown substantially in recent years. But these differences in trends can be reconciled in terms of the stages-of-regional-growth theory. That is, the protracted outflow of funds from commercial banks may indicate that the Medford and Roseburg areas have advanced to a more mature stage of development than other timber-dependent communities in western Oregon. If so, forest resource management policies designed to achieve economic stability elsewhere may not be appropriate for the Medford and Roseburg areas.



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# Introduction

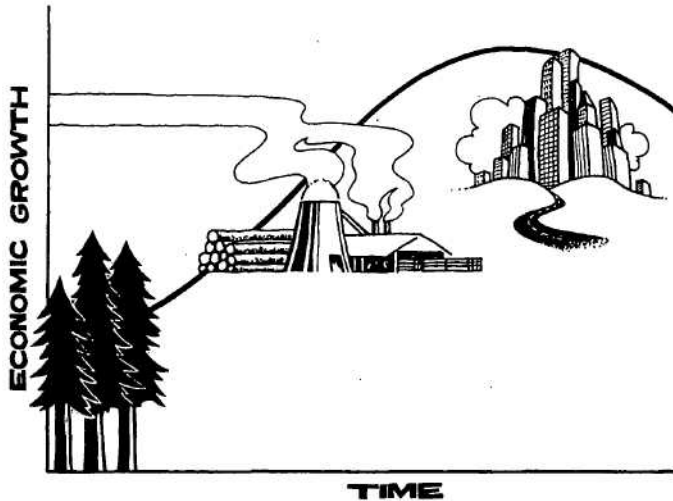
Regulations recently issued by the U.S. Department of Agriculture regarding land and resource management planning in the National Forest System (36 CFR Part 219) stipulate that community stability be considered when assigning regional objectives to designated forest planning areas (Section 219.4 (b) (2)). Regarding timber, the regulations stipulate that departures from the "base harvest schedule"<sup>1</sup> will be considered when, "Implementation . . . would cause a substantial adverse impact upon a community in the economic area in which the forest is located," (Section 219.13 (iii) (B)). Currently, there is no acceptable means for determining the long-term consequences of a base harvest schedule on community stability. Until we develop such a mechanism, we will not be able to rationalize departures in terms of community impacts.

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<sup>1</sup>"Base timber harvest schedule: The Timber Harvest Schedule in which the planned sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade of the planned period and this planned sale and harvest for any decade is not greater than long-term sustained yield capacity." 36 CFR Part 219 National Forest System Land and Resource Management Planning, Section 219.3.

Given the rapid growth of Oregon's economy during the past decade, economic stability of timber-dependent communities would seem unlikely to be of concern. But what about the future? Although Oregon's economy is diversifying the timber industry still dominates-- particularly outside the Portland area. Furthermore, several studies have predicted that unless private and public forest management policies are radically altered, western Oregon will experience a significant log production shortfall within the next 10 to 15 years. Beuter et al. (1976), for example, forecast a 21-percent decline in timber harvesting in western Oregon between 1980 and the year 2000. In fact, log production data suggest that the decline has already commenced. Average annual production for the 1971-1975 period was 5-percent lower than for the previous 5-year period (Brodie et al. 1978).

The shortfall will not be uniform throughout western Oregon. Current log production in the northern coastal area can probably be maintained indefinitely, whereas the Eugene area will experience a 40-percent decline. Log production in the Roseburg and Medford areas is forecast to decline about 20-percent.



Analyzing the flow of funds is one way to identify an area's stage of development. The flow between areas serves to equalize the rates-of-return among competing investment opportunities. Consequently, the relative strength of an economy can be judged on the basis of its net lending position. As Borts (1971, pp. 189-217) points out,

Capital will flow from areas of high savings and low investment to areas of low savings and high investment. To the extent that investment levels are related to rates of growth, this means the capital also will flow from slowly to rapidly growing regions.

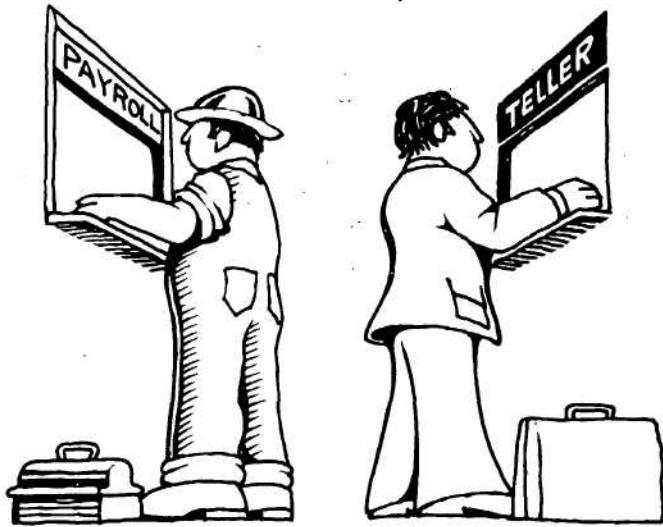
## Stage of Development an Important Consideration

The magnitude of the expected shortfall will help identify economic communities that could be adversely affected. But it is conceivable that departures from the "base harvest schedule" could be justified for say, the Roseburg area and not the north Willamette Valley even though the Roseburg area is not expected to experience as sharp a decline in timber production. A growing, diversifying economy will more likely be able to absorb a reduction in timber production than a slower growing, more timber-dependent area. In other words, a shortfall in timber production will undoubtedly play a significantly different role depending upon an area's stage of development (Castle and Youmans 1968). Consequently, information regarding an area's stage of development is essential in determining whether or not the base harvest schedule would cause economic hardship.

To properly identify an area's stage of development, one must examine economic change over an extended period. Romans (1965), for example, observed a 30-year period, 1929-59. The examination should also consider movement of capital stocks as well as money flows. Such an analytical task at the region or state level is formidable, but possible. At the sub-state level, however, the lack of accessible, economic time series data prevents a comprehensive analysis. Hence, the need for a less rigorous technique (i.e. involving fewer variables). In this paper, I examine the flow of funds from commercial banks as a possible indicator of the growth potential of timber-dependent communities.



# Strategic Role of Commercial Banks in Rural Areas



Commercial banks are often the most important financial institution in rural areas, but as Verbrugge (1976) observed, "Commercial banks, regardless of size, do not typically provide the long-term credit needed for capital expansion." Though their funds may not be large compared to industry's total needs, the role of commercial banks in promoting the expansion of the economic base can be pivotal (Tweeten and Brinkman 1976). As Mittleider and Helgeson (1978) observed,

The financial performance of banks . . . can have a direct bearing on the economic development which takes place . . . since the location of new industry may be determined by the availability of credit for its operations as well as for its employees, customers, and suppliers.

## Banking Activity in Western Oregon

For the purposes of this analysis, I divided western Oregon into eight sub-areas (figure 1). These sub-areas coincide with those delineated by Maki et al. (1968). Banking data were obtained from the annual reports of the Oregon Superintendent of Banks. These

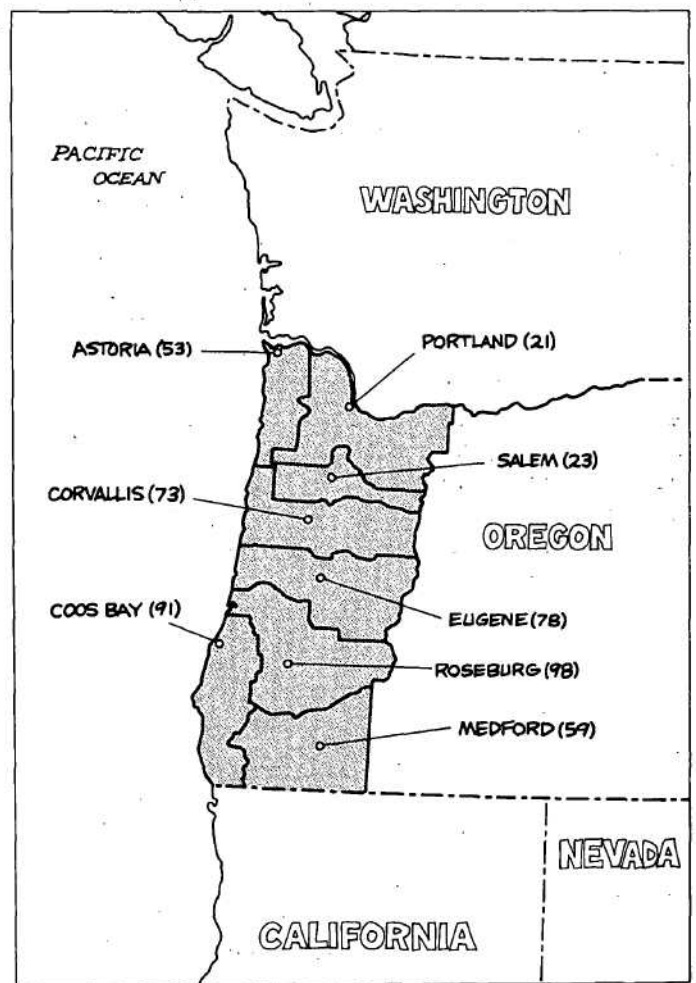


Figure 1.--Eight sub-areas in western Oregon. Numbers in parenthesis are 1971 timber-dependency indices or the percent of a sub-area's excess employment accounted for by the lumber and wood products industry. Cf., Wilbur R. Maki and Dennis L. Schweitzer (1973).

reports provide the status of loans and deposits, as of December 31, for each bank—including individual branches—in Oregon.<sup>2</sup> This analysis was for a 25-year period, 1953-1977. In order to avoid short-term aberrations resulting from changing monetary policy, I summarized loan and deposit data for 5-year intervals.

Savings and lending activities at commercial banks in Oregon increased substantially between 1953 and 1977. In constant 1967 dollars, total deposits in commercial banks in Oregon during the 5-year period 1953-57 averaged \$2.3 billion,<sup>3</sup> whereas during the 1973-77 period, they averaged \$4.4 billion, or an increase of nearly 90 percent. Between 1953 and 1977, lending increased by nearly the same dollar amount—from \$1.1 to \$3.0 billion. But in percentage terms, growth in lending exceeded saving by a substantial margin. With the exception of the Astoria area, growth of lending relative to savings was evident throughout western Oregon (figure 2). But absolute and percentage changes can be misleading regarding the flow of funds.

<sup>2</sup>The State's two large branch banks—First National Bank of Oregon and the U.S. National Bank—changed reporting procedures for the period 1973-77. Consequently, the annual report data for 1973-77 does not coincide with earlier periods. But with the banks' assistance, I was able to construct consistent loan and deposit series for the entire 25-year period.

<sup>3</sup>Unless otherwise specified, all bank transactions are reported in constant 1967 dollars. The Bureau of Labor Statistic's Consumer Price Index for all urban consumers in Portland, Oregon was used to deflate actual transactions.

ACME COMMERCIAL BANK	
ASSETS	LIABILITIES
CASH	ACCOUNTS PAYABLE
DEPOSITS IN OTHER BANKS	CAPITAL GOODS
SECURITIES	SURPLUS
LOANS	DEPOSITS

## Banks Commit Some Funds to Non-Local Use

A fundamental maxim of banking is the avoidance of non-earning assets. This is apparent from table 1 which describes what happens when a hypothetical bank receives a new demand deposit of \$100. The three-step sequence corresponds to numbers on the balance sheet:

Step (1) A new demand deposit of \$100 is shown as a bank liability. The corresponding asset account has two components: (a) required reserves—\$10 assuming a 10-percent marginal rate, and (b) excess reserves of \$90.

Step (2) For all intent and purposes, a significant share of the excess reserve account is depleted instantly. In this example, the bank "creates" new money by loaning \$60 (i.e., the new demand deposit). The customer can then draw funds from the balancing liability account.

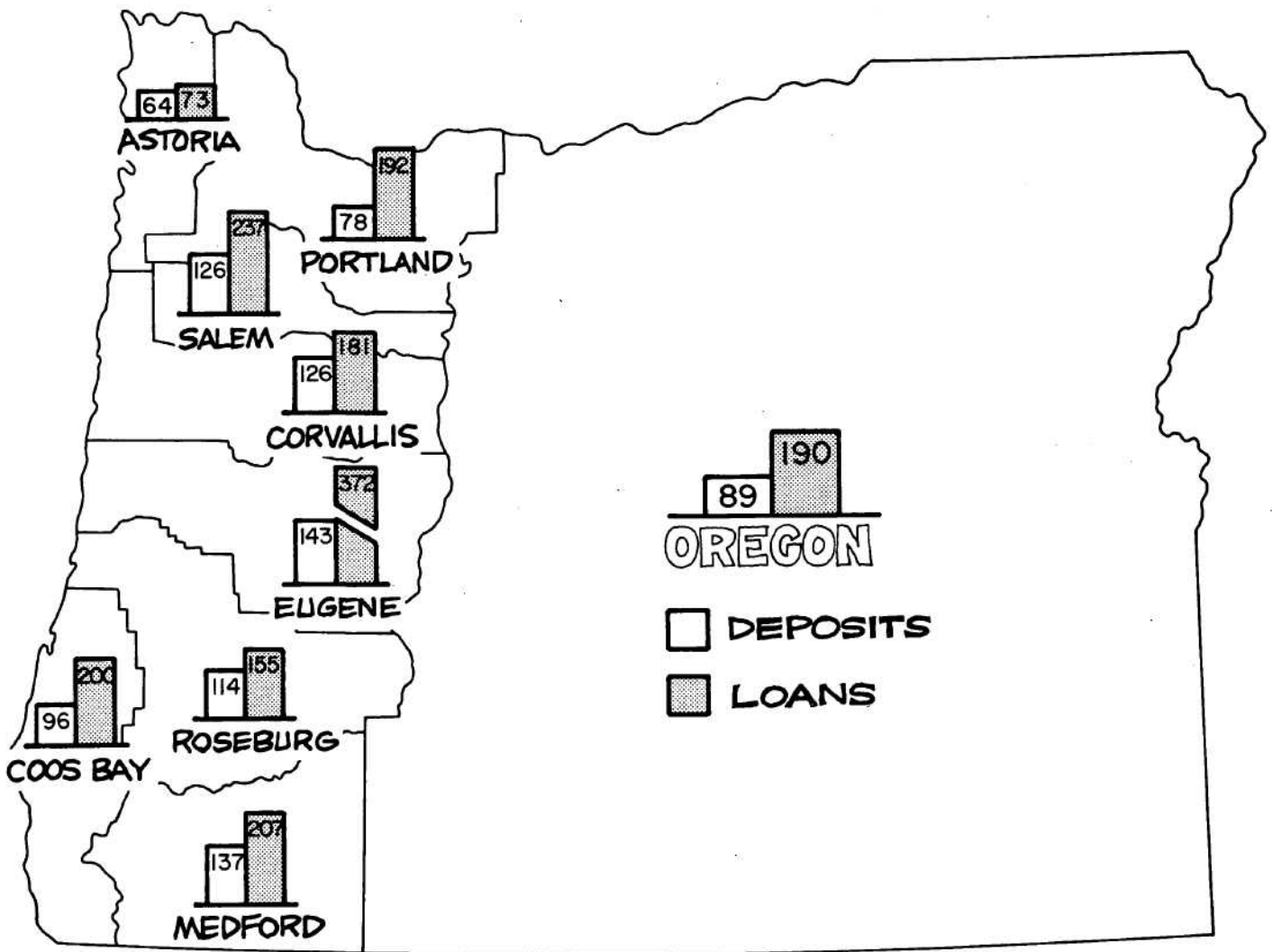


Figure 2.--Change in saving and lending activity at commercial banks for Oregon and selected sub-areas, 1953-1977 (percent).

Table 1--The relationship between demand deposits, loans, reserves, and non-locally committed funds

Hypothetical commercial bank			
Assets		Liabilities	
(1) Reserves		(1) Demand deposits	+\$100
Required	+ 10		
Excess	+ 90		
	+\$100		
(2) Loan	+ 60	(2) New demand deposit	+ 60
Reserves		Existing demand	
Required		deposit	100
on new deposit	+ 6		
on existing	10		
deposit	84		
Excess	\$160		\$160
(3) Loan	60	(3) Demand deposits	160
Reserves			
Required	16		
Excess	25		
Bonds and securities	+ 59		
	\$160		\$160

Step (3) Commercial banks generally don't maintain large cash and other non-earning balances. Instead they commit funds to short-term interest-earning bonds and securities. In this hypothetical case, \$59 is used to purchase bonds and securities, leaving only \$25 in the excess reserve account. In rural banks, most of the \$59 would represent a flow of funds from the local economy. An exception might be a locally purchased municipal bond.

To recapitulate: The initial demand deposit of \$100 allowed the bank to create new money (\$60) in the form of a loan to a local customer. This hypothetical bank could have created additional funds had local loan opportunities existed. They did not, so some bank funds (approximately \$59) flowed from the local economy.

Note that total bank liabilities have increased to \$160. On the asset side of the ledger, marginal reserve requirements must be increased \$6 to cover the new demand deposit, bringing the total to \$16. The bank still has assets, net of reserve requirements and loans, totaling \$84. Here I'm assuming the bank chooses not to provide additional loans because (a) the remaining local investment opportunities fail to meet its earning and risk requirements, and/or (b) the bank wishes to maintain a short-term liquidity position.



## Loan-to-Deposit Ratio --A Money Flow Indicator

The flow of funds from commercial banks is a continuous phenomena--but the magnitude changes. The focus of this study is the change in the rate of flow. In a related study, Shane (1972) used the loan-to-deposit ratio (LDR) as an indicator of change.<sup>4</sup> As he observed, "... the alternative to making loans is buying bonds. A low LDR, particularly for a rural bank, implies an outflow of funds from the local community of greater magnitude than a higher ratio (since a loan is generally made to a member of the local community while the bond purchase is unrelated to the local community)."

Since Shane conducted his study, the general level of the LDR has increased. Commercial banks can now "buy" deposits by issuing certificates in the money market (Marple and Parks 1979). Consequently, they no longer maintain as much liquidity. But, the LDR continues to vary significantly from one locality to another. For example, in

<sup>4</sup> Shaffer (1978) used the LDR as an indicator of bank investment policy.

1978 the average for member banks of the Twelfth Federal Reserve District ranged from 70.73-percent in Nevada to 89.38-percent in Washington (table 2).

Table 2--Loan-to-deposit ratios for member banks of the Twelfth Federal Reserve District, 1978, by State<sup>1</sup>

State	Ratio (percent)
Washington	89.38
California <sup>2</sup>	83.69
Arizona	82.07
Oregon	80.55
Utah	79.82
Idaho	79.29
Alaska	76.77
Nevada	70.73

<sup>1</sup>Data source: Federal Reserve Bank of San Francisco, "Western Economic Indicators," March/April, 1979, 53 pp.

<sup>2</sup>Includes Hawaii.

Although the change in the LDR can provide an indication of the rate of change in the flow of funds from banks, it is not altogether revealing. A decrease in the ratio indicates an increase in the rate of outflow, but an increase in the LDR may conceal an absolute decrease in the outflow. Furthermore, the change in the LDR can be misleading. For example, it is mathematically possible, for the change to be negative--indicating an increase in the outflow of funds--when, in fact, the outflow decreased. Such a circumstance could arise if both loans and deposits decrease.

## Outflow Elasticities Add Precision

I have used Shane's LDR technique. But to obtain a more precise measure of the change in outflow of funds, and to avoid possible inconsistencies arising from the use of LDR, I also calculated "outflow" elasticities (E) which show the percentage change in non-locally committed funds (i.e., deposits minus loans)<sup>5</sup> associated with a 1-percent change in deposits. Symbolically, this relationship can be expressed as follows:

$$E_{j, j-1} = \frac{\frac{O_j - O_{j-1}}{O_{j-1}}}{\frac{D_j - D_{j-1}}{D_{j-1}}}$$

where,

$E_{j, j-1}$  = the outflow elasticity between time interval and j-1.

(j = 1 . . . 5), where j is defined as follows:

j	time interval
1	1953-1957
2	1958-1962
3	1963-1967
4	1968-1972
5	1973-1977

$O_j$  = the average outflow of funds (i.e., not committed locally) for time interval j.

$D_j$  = the average deposits for time interval j.

<sup>5</sup>As shown in Table 1, not all of the difference between loans and deposits represents funds leaving the local area. With the exception of the purchase of local municipal bonds--not a major item in rural areas--the difference does represent non-locally committed funds.

## Flow of Funds From Timber-Dependent Communities Varies by Sub-Areas

The average LDR for all commercial banks in Oregon increased throughout the 25-year period, 1953-77 (table 3). But this trend conceals some important differences between selected sub-areas in western Oregon. For the Salem and Portland areas, local lending opportunities attracted an increasing percentage of local bank deposits throughout the 25-year period. But for several areas--Astoria, Corvallis, Roseburg, and Medford--the LDR peaked during the 1963-67 period. Subsequently, however, LDRs for the Astoria and Corvallis areas increased during the 1973-77 period but continued to decrease in the Roseburg and Medford areas.

The outflow elasticities go beyond confirming trends suggested by the LDR indicator. As shown below, a positive change in LDR could be associated with a positive change as well as a negative change in the outflow of funds:

Value of E	$\Delta$ LDR	Indicates <sup>6</sup>
$E > 1$	-	Change in outflow of funds greater than increase in deposits
$0 < E < 1$	+	Change in outflow of funds less than increase in deposits
$E < 0$	+	Absolute decrease in outflow of funds associated with increase in deposits

<sup>6</sup>For all sub-areas, deposits increased throughout the 25-year period, 1953-77. Had there been a decrease in deposits, the relationship between  $\Delta$ LDR and elasticities (E) would have changed. The advantage of using both indices is that a different combination of LDR and E alerts one of a possible change in the significance of the indicator's sign.

Table 3 -- Loan-to-deposit ratios for commercial banks in Oregon and selected economic sub-areas, 1953-77 (percent)

Time Period	State of Oregon	Portland	Astoria	Salem	Corvallis	Eugene	Roseburg	Medford	Coos Bay
1953-1957	44.43	44.78	36.46	34.26	42.72	37.52	41.15	41.75	41.30
1958-1962	50.46	53.38	38.79	35.38	48.38	49.83	39.61	46.03	48.42
Change from previous period	6.03	8.60	2.33	1.12	5.66	12.31	-1.54	4.28	7.12
1963-1967	59.41	60.03	40.22	44.25	56.49	63.58	58.01	58.72	60.87
Change from previous period	8.95	6.65	1.43	8.87	8.11	18.75	18.40	12.69	12.45
1968-1972	63.84	71.79	33.61	47.08	51.62	66.68	50.96	54.52	55.60
Change from previous period	4.43	11.76	-6.61	2.83	-4.87	-1.90	-7.05	-4.20	-5.27
1973-1977	68.18	82.18	38.13	50.71	52.65	73.31	49.55	53.54	63.15
Change from previous period	4.34	10.39	4.52	3.63	1.03	6.63	-1.41	-0.98	7.55

Furthermore, table 4 shows that during much of the 25-year study period, the outflow of funds decreased relative to deposits in the Portland and Eugene areas. That is, a 1-percent increase in deposits was associated with an absolute decrease in outflow. Quite

the opposite occurred in the Medford and Roseburg areas (particularly the latter); for the 1968-1977 period a 1-percent increase in deposits has been associated with a greater than 1-percent increase in the outflow of funds.

Table 4--Comparison of the change in loan-to-deposit ratios ( $\Delta$ LDR) and their respective outflow elasticities (E) for commercial banks in Oregon and selected sub-areas

Interval <sup>1</sup>	Index	Oregon	Portland	Astoria	Salem	Corvallis	Eugene	Roseburg	Medford	Coos Bay
1	$\Delta$ LDR	+	+	+	+	+	+	-	+	+
	E	-.20	-.25	.39	.86	.28	-.42	1.28	.15	.18
2	$\Delta$ LDR	+	+	+	+	+	+	+	+	+
	E	.16	.30	.81	.49	.39	-.46	-.50	.09	-.09
3	$\Delta$ LDR	+	+	-	+	-	-	-	-	-
	E	.43	-.67	1.67	.76	1.46	1.25	1.86	1.44	1.70
4	$\Delta$ LDR	+	+	+	+	+	+	-	-	+
	E	-.51	-17.33	-.01	.45	.65	-.22	1.13	1.12	-.40

<sup>1</sup>interval 1 is between the 5-year periods 1953-57 and 1968-62; interval 2, between 1958-62 and 1963-67, etc.

# Lending by Other Financial Institutions Unlike Commercial Bank Performance

The reason why the relative flow of funds from commercial banks in the Roseburg and Medford areas has been more pronounced than elsewhere is not readily apparent. While the outflow was increasing, employment in the wood products industry throughout western Oregon exhibited some growth (Maki and Schweitzer 1973). Furthermore, percentage growth of population and personal income for these two areas surpassed the average for the State of Oregon by a substantial margin (Bureau of Governmental Research and Service 1978 and U.S. Department of Commerce 1976). And finally, the outflow of funds from commercial banks in the Medford and Roseburg areas is contrary to the experience of Oregon's two major lending institutions--i.e., the savings and loan associations (S & L's) and the Veterans' Affairs (Veterans' loans).

Data are limited regarding savings and loan association activity at the sub-state level. Only deposit data for the period since 1975 is available.<sup>7</sup> But to the extent that the latter period is representative, savings and loan associations in the Roseburg and Medford areas haven't performed much differently than other non-metropolitan areas of western Oregon (table 5).

<sup>7</sup> Traditionally, the difference between savings and loan association deposits and loans has been minimal. Consequently, deposit trend is a useful proxy for lending activity.

Table 5--Total deposits, in constant dollars, at savings and loan associations in selected timber-dependent areas of western Oregon-

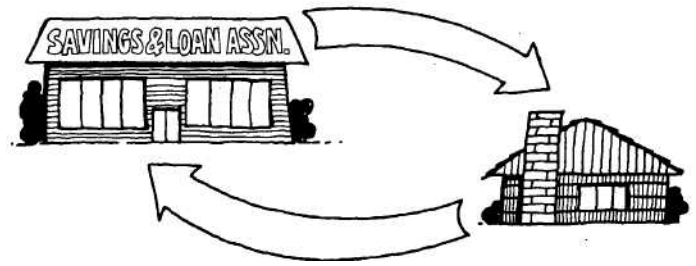
Year	Astoria	Salem	Corvallis	Eugene	Roseburg	Medford	Coos Bay
	\$ million						
1975	53	330	187	360	62	195	43
1976	64	369	230	421	77	241	54
1977	78	463	290	484	94	296	68
1978	91	519	331	529	108	348	78
1979	108	568	367	569	116	383	87
Change 1975-79 (percent)	103	72	96	58	88	96	100

<sup>1</sup> Source: Federal Home Loan Bank of, Seattle. Data at sub-state level not available for previous years.



The Oregon Department of Veterans' Affairs has contributed substantially to the State's mortgage market. Currently, it is the State's largest single entity involved in residential lending. Although lending fell off for some non-metropolitan areas during the 1963-67 period, the annual volume increased steadily during the 10-year period, 1968-1977 (table 6). Furthermore, the growth of Veteran loans in the Roseburg and Medford areas surpassed that for the remaining areas.

The extraordinary growth in lending by the savings and loan associations and Veterans' Affairs seemingly complicates the explanation for the outflow of funds from commercial banks in the Medford and Roseburg areas. But inasmuch as commercial banks are chartered to serve a broader range of customers, there is no reason to expect their performance to coincide with that of the savings and loan association or Veterans' loans.



Whereas the latter mainly service the long-term lending needs of the residential homebuilder, commercial banks have traditionally favored the short-term market. That is, with the exception of residential mortgages, lending by commercial banks is essentially for terms of less than 5 years. The residential mortgage did account for a slightly larger share of Oregon's commercial bank lending in 1977 than in 1968 (table 7). But still, over 80-percent of lending was short-term.

Table 6—Oregon veterans' loans annual activity, inconstant dollars, in selected timber-dependent areas of western Oregon, 1968-1977

Period	Astoria	Salem	Corvallis	Eugene	Roseburg	Medford	Coos Bay
	----- \$ thousand -----						
Annual average, 1958-1962	715	5247	3256	4758	941	2190	1067
Annual average, 1963-1967	837	4928	3083	4732	1057	1822	1119
Annual average, 1968-1972	1650	9949	6271	9401	2200	3876	2253
Annual average, 1973-1977	4145	22674	16120	27534	7038	14053	5780

<sup>1</sup>Source: Oregon State Department of Veterans' Affairs.

Table 7 -- Distribution of commercial bank loans in Oregon, 1968 and 1977<sup>1</sup>

Type of Loan	Percent	
	1968	1977
Real estate		
Residential	16.1	18.2
Other	10.3	11.8
Financial institutions	5.1	9.0
Loans to individuals	20.1	21.5
Commercial and industrial	40.0	32.9
Farm	5.0	4.5
Other	3.4	2.1
	100.0	100.0

<sup>1</sup>Source: Federal Deposit Insurance Corporation, "Assets and Liabilities-- Report of Income for Commercial and Mutual Savings Banks."

With regard to the Medford and Roseburg areas, there is reason to believe that a shrinking short-term market is responsible for the ability of commercial banks to attract savings in excess of local investing capacity. Using short-term commercial and consumer loan data for the First National Bank of Oregon and the U.S. National Bank -- such information for other banks was not published--short-term LDR were calculated for the 1974-1977 period. As shown in table 8, the ratio for the Medford area, unlike that for other timber-dependent areas declined throughout the 4-year period, indicating an outflow of funds resulting from a decline in short-term local lending opportunities. Furthermore, though the ratio for the Roseburg area increased, the change was less than for the remaining areas.

<sup>8</sup>The two banks together accounted for approximately 63-percent of all commercial bank lending in the Medford and Roseburg areas between 1974 and 1977.

Table 8--Short-term loan-to-deposit ratios for First National and U.S. National banks in selected timber-dependent areas of western Oregon, 1974-1977 (percent)

Year	Astoria	Salem	Corvallis	Eugene	Roseburg	Medford	Coos Bay
1974	18.85	34.20	32.78	45.46	34.67	47.21	33.12
1975	18.11	32.23	29.67	42.25	31.83	41.13	26.58
1976	19.18	36.72	34.76	50.01	33.36	39.51	28.59
1977	25.64	39.74	35.43	56.43	36.59	37.91	37.58
Change, 1974-1977	6.79	5.54	2.65	10.97	1.92	-9.30	4.46

<sup>1</sup>Total loans minus residential real estate transactions equals "short-term loans." Source: Oregon Superintendent of Banks Annual Report.

# Commercial Bank Lending May Reflect Fundamental Change

The preceding discussion provides evidence that for much of the 25-year period, 1953-77, local short-term lending opportunities in the Roseburg area became increasingly unattractive to commercial banks in comparison to non-local investments. The same was the case for the Medford area during the decade commencing in 1968. For the remainder of western Oregon--particularly the Portland and Eugene areas--local lending has at least kept pace with the rate of increase in deposits. Meanwhile, even in the Medford and Roseburg areas, long-term lending showed no sign of weakening. The difference between trends in short-term and long-term lending in the Medford and Roseburg areas is too unique and protracted to ignore. But what is the economic significance of this difference? Might this difference relate solely to a changing role for the commercial banking industry? Or might the performance of the commercial banks indicate more fundamental changes in the economy of timber-dependent communities? Let's first consider the notion of a changing role.

Industrial customers undoubtedly rely more now than previously upon non-bank financing. But aside from the fact that local banks probably have never been a major source of funds, any tendency away from this source has presumably affected all timber-dependent communities in Oregon.<sup>9</sup>

The rapid growth of savings and loan institutions has affected commercial banking nationwide. But competition has been more in terms of deposits rather than loans. (As already noted, the commercial banks and savings and loan associations cater to different lending markets. Furthermore, there is no reason to believe that competition between commercial and savings and loan associations has been any more or less intense in the Medford and Roseburg areas than elsewhere in western Oregon.

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<sup>9</sup>Expenditures (in constant dollars) for new manufacturing equipment and facilities has stabilized or declined in much of western Oregon. The Portland and Eugene areas are exceptions. Between 1969 and 1973, there was a sizeable increase in the Roseburg area, but most was probably related to the construction of a single, large wood-using facility that will eventually supplant manufacturing capacity elsewhere in the Roseburg vicinity (Source: Department of Commerce, Census of Manufacturing--from published sources and personal phone conversations).

# Stages-of-Regional-Growth Theory and The Flow of Funds

Undoubtedly, the performance of commercial banks has been influenced by all of the above, i.e., a changing role, by concentration of financial management activities, etc. But in spite of such change, one would expect a growing economy to provide increasing lending opportunities—that is, lending by commercial banks would keep pace with the growth in deposits. Clearly, this has not occurred in the Medford and Roseburg areas. In fact, the performance of commercial banks strongly suggests that the Medford and Roseburg economies are fundamentally different than other timber-dependent communities in western Oregon. In this regard, the stages-of-regional-growth theory is helpful in judging whether or not this difference is important from a forest resource policy standpoint.

According to the stages-of-regional-growth theory, initial development of a region's resources is accompanied by capital flows to the region (figure 3). Capital continues to flow into the economy as it diversifies, but at a decreasing rate (proliferation stage). During the industrialization stage, local investment opportunities are harder to find. In fact, the economy will become a net exporter of capital. Meanwhile, population and per capita income will continue to increase despite a leveling of export base employment. The latter phenomena may help explain why residential lending in the Medford and Roseburg areas continues to grow while commercial banks are finding local short-term lending opportunities less attractive.

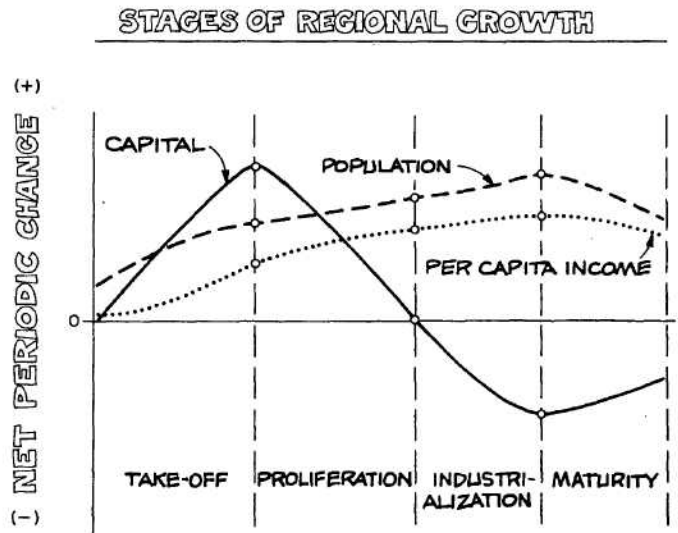
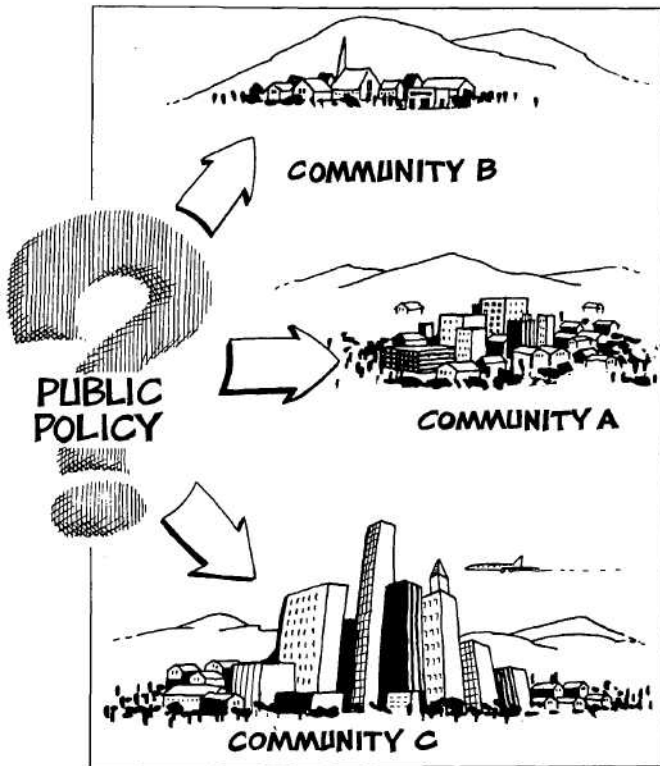


Figure 3--According to the stages-of-regional-growth theory, net capital movement remains positive through the proliferation stage. Thereafter, net movement is outward from the region. Per capita income and population continue to increase until maturity stage. See Leven (1966) for a more, detailed description of the stages-of-regional-growth theory.



Commercial banks in the Medford and Roseburg areas have been net exporters of funds for an extended period. Consequently, to the extent that commercial bank performance is indicative of capital movements in general, the Medford and Roseburg areas appear to be at a more advanced stage of development than other western Oregon timber-dependent communities.

I would conjecture that a mature, slow-growing economy is less resilient than a faster growing, diversifying economy. For timber management planning purposes, therefore, it would seem plausible to distinguish between the Medford and Roseburg areas and the remainder of western Oregon. Furthermore, a single timber management policy may not be appropriate for all of western Oregon. What might achieve community stability in one area may not elsewhere.

Devoting special attention to the Roseburg and Medford areas would be particularly timely. As mentioned previously, current regulations allow for departures from base timber harvest schedules. Also, there is evidence the potential exists for modifying public timber management policy in order to moderate the anticipated shortfall in western Oregon timber production (Beuter and Schallau 1978).

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The flow of funds from commercial banks in western Oregon may indicate how a timber shortfall will affect community stability. Results suggest the inappropriateness of a single public forest management policy.

Keywords: Economic theory (-forest management, economic growth, management planning (forest), policy (forest), Oregon (western).

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