People on the Move: Trends and Prospects in District Migration Flows

By Glenn H. Miller, Jr.

Since the early 1970s, the states of the Tenth Federal Reserve District have experienced wide swings in economic activity and interstate migration. The swings in migration not only reflect the region's economic performance but also have important consequences for future economic activity.

This article discusses recent trends and prospects for migration into and out of the district. The first section reviews trends in net migration flows and shows how they correspond with swings in district economic performance. The second section examines the composition of migrant flows, indicates that a significant brain drain occurred from much of the district in the late 1980s, and considers the migration outlook for the district.

SWINGS IN MIGRATION FLOWS AND ECONOMIC PERFORMANCE

The Tenth District has had three major swings in migration flows over the past two decades. In each case, the population shift was closely correlated with a big swing in the district economy. This correspondence between swings in migration and the economy is not new. The migration of people from place to place has long been closely related to regional economic growth and development. Migration is a response to changing economic activity across regions. Individuals who move are motivated by changing conditions in their region of origin and by greater economic opportunity in potential destination regions. Thus the ebb and flow of economic opportunity in the Tenth District compared with that in the rest of the nation has provided much of the push and pull to district migration.

Migration has many impacts. It affects the migrants themselves, who generally move to find better economic opportunity. If they find opportunity, they are likely to settle down as residents; if not, they may well move again.[1] On a more aggregate level, migration affects the regions of origin and destination. Receiving regions are likely to enjoy strengthened economic activity as the demand for goods and services, including housing, increases. Multiplier effects further enhance the economic benefits of migration inflows.[2] By contrast, regions with migration outflows are likely to suffer weakened economic activity and shrunken tax bases.

Glenn H. Miller, Jr. is a vice president and economic advisor at the Federal Reserve Bank of Kansas City. Deron Ferguson, a research associate at the bank, helped prepare the article.

Migration flows

From the mid-1970s to the early 1990s, the Tenth District has experienced three significant shifts in net migration.[3] From 1975-76 to 1982-83, the region experienced net inmigration from the rest of the nation (See charts in Appendix). At the peak in 1981-82, almost 93,000 more people moved into the district than moved out. After a sharp slowdown in net inmigration in 1982-83, net outflows began in 1983-84 and lasted through 1989-90. Net outmigration reached a maximum of about 87,000 in 1987-88. Net outmigration then slowed, and net inmigration to the district resumed in 1990-91 and continued in 1991-92, the last year for which data are available. (The data used here are from the Internal Revenue Service, so the estimated annual migration flows refer to the 12-month period from April of one year to April of the next year. Annual data for each state and the district, including gross inmigration and outmigration, are shown in Appendix Table 1).[4]

The net migration experiences of some district states ran counter to that of the region as a whole. Missouri, for example, had net outmigration in the early 1980s but net inmigration during the last half of the decade. Nebraska had a net outflow in every year from 1975-76 to 1991-92 except one; Kansas had a net outflow in every year but two. Among the other four states, Wyoming turned from net inflow to net outflow in 1982-83, much sooner than the rest. New Mexico, however, did not make the switch until 1987-88.

Migration effectiveness. Migration always brings some population redistribution between places unless gross flows of inmigrants and outmigrants exactly cancel out, leaving pure population swapping. Population redistribution due to net migration is usually more important to a region's economy than population swapping.[5]

A concept called migration effectiveness is used here to focus attention on population redistribution.[6] Specifically, migration effectiveness is a region's net migration (gross inmigration minus gross outmigration) as a percent of its total migration (gross inmigration plus gross outmigration). Effectiveness captures two key attributes of migration. First, the measure's absolute size shows the power of the migration system in redistributing population. A high value shows large net redistribution of population relative to total migration, hence high migration effectiveness. A low value shows population swapping but little redistribution of population as the gross flows tend to cancel out one another.[7] Second, the effectiveness measure shows the direction of migration. The measure is positive when there is net inmigration and negative when there is net outmigration.[8]

Table 1 shows migration effectiveness for the district and district states from 1975-76 to 1991-92.[9] The effectiveness measure confirms the region's three major swings in migration flows and shows their power in redistributing population. For the district as a whole, effectiveness rose to a peak of 9.3 in 1981-82. That is, of all the people who were coming into and going out of the region, 9.3 percent came into the district. As migration effectiveness measures go, that was a sizable influx. Similarly, district migration effectiveness swung to a sizable peak outflow in 1987-88. The region's effectiveness again turned positive in 1990-91 and swung further toward net inflows the following year.

The district's energy and mountain states contributed heavily to the early peak in effective inmigration and the later peak in effective outmigration. Oklahoma and Wyoming, for example, shifted from being highly effective receivers of net inmigration in 1981-82 to being highly effective providers of net outmigration in 1987-88. Colorado and New Mexico had less severe outflows in the mid-1980s but became the district's most powerful migration magnets by the early 1990s.

Among other district states, Missouri was a contrarian in its migration flows. Missouri moved from being an effective provider of net outmigration in the early 1980s to being a modest receiver of net inmigration in the mid-1980s, the same time that most other district states were losing population. Although Kansas and Nebraska had sizable

Table 1

Migration Effectiveness for Tenth District States, Selected Years, 1975-92

	1975-76	1976-77	1978-79	1980-81	1981-82	1982-83	1983-84	1984-85
Colorado	5.7	8.9	10.8	12.7	16.6	7.5	4.5	1.9
Kansas	1.3	-1.9	-4.8	-2.3	-6.3	-5.4	-6.0	-6.8
Missouri	-2.2	.7	-2.0	-6.7	-11.5	-.9	.6	-1.4
Nebraska	-3.6	-5.6	-11.0	-7.4	-10.6	-10.2	-8.4	-13.6
New Mexico	8.4	6.9	7.3	4.1	5.8	8.5	4.3	3.6
Oklahoma	9.3	9.7	8.3	14.7	30.2	10.4	-4.5	-12.3
Wyoming	13.6	15.3	15.9	13.7	9.4	-10.7	-15.4	-13.6
Tenth District	5.0	8.1	4.7	6.1	9.3	3.2	-1.9	-5.6

	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92
Colorado	-.2	-3.0	-9.8	-7.4	-.8	8.0	14.9
Kansas	-7.0	-4.4	-1.9	-4.3	-4.5	-4.6	1.8
Missouri	1.0	3.8	1.2	.7	2.0	-.6	.1
Nebraska	-17.3	-14.9	-10.2	-5.9	-3.1	-.8	.1
New Mexico	2.1	.7	-4.3	-2.7	-1.1	3.3	7.1
Oklahoma	-14.0	-23.3	-20.0	-11.1	-6.2	-.6	3.2
Wyoming	-14.9	-36.0	-23.2	-15.7	-10.0	-.1	3.8
Tenth District	-6.6	-9.6	-10.3	-7.1	-2.8	1.7	7.0

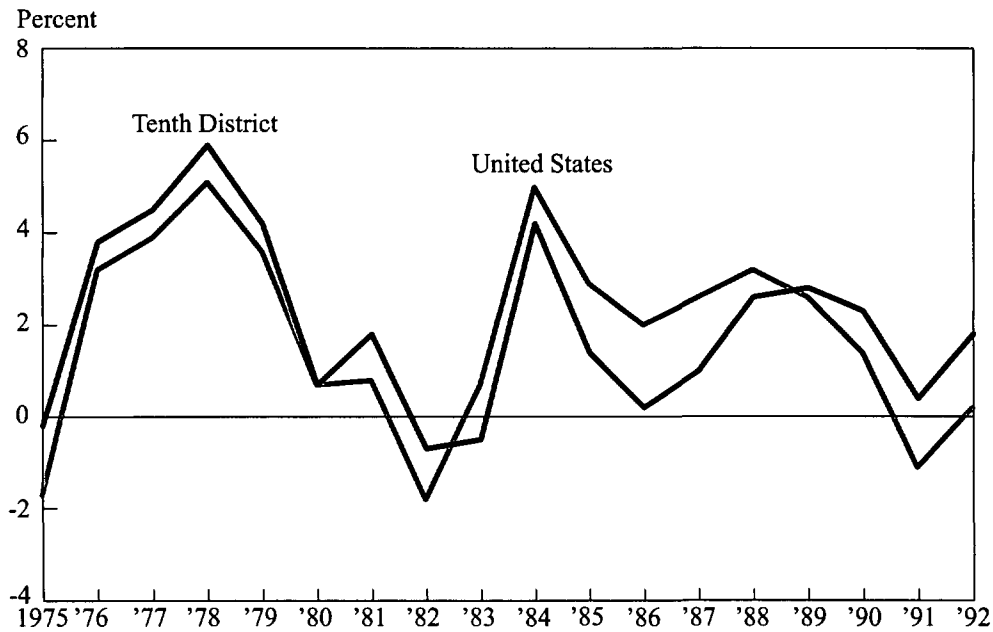
Source: Computed at the Federal Reserve Bank of Kansas City from IRS data.

outflows in the mid-1980s, their migration effectiveness has receded since then.

The connection between migration and the economy

The swings in district migration occurred against a backdrop of sharp swings in economic growth across the region, due largely to a boom and bust cycle in its important energy sector. While both the district and national economies fluctuated considerably from the mid-1970s to the early 1990s, their relative growth performance diverged in the middle of the period. The divergences in economic growth between the district and the nation are a major factor

Chart 1
Employment Growth
United States and Tenth District



Source: U.S. Department of Labor.

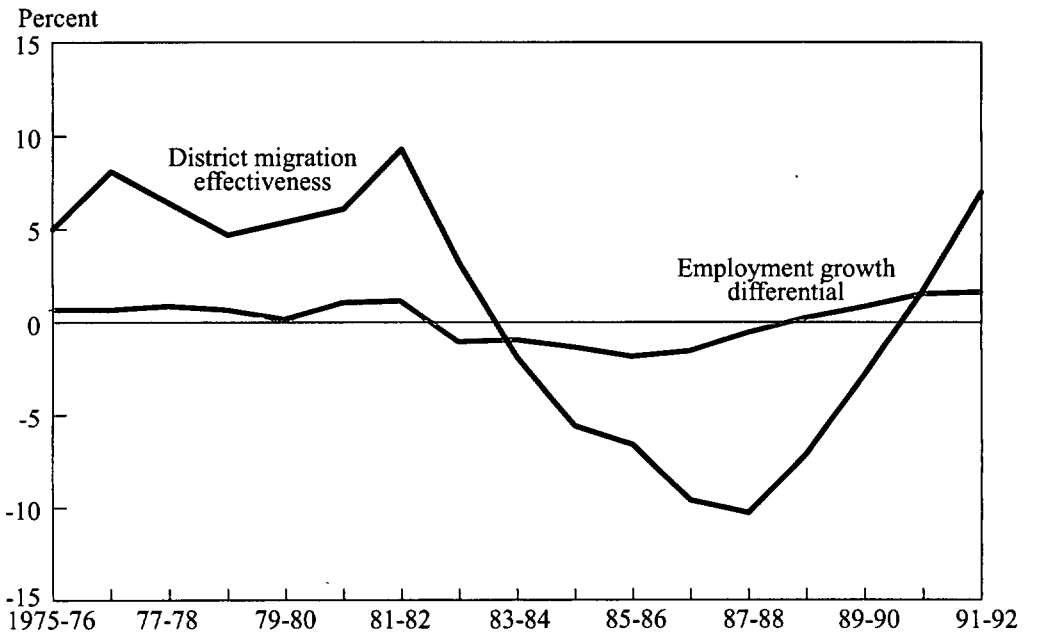
in explaining why so many people were coming and going in the district during this period.

Employment growth fluctuated considerably from 1975 to 1992 in both the Tenth District and the nation (Chart 1).[10] The district economy outpaced the national economy in the late 1970s and early 1980s, but the tables turned in 1983 when the national economy began to outpace the district. Growth was faster in the nation than in the district until the nation began to slip into the 1990-91 recession. The divergences in economic performance between the district and the nation were due less to national business cycle fluctuations than to a cycle of boom and bust in the district's energy industry.

The energy industry in the Tenth District and elsewhere in the United States responded briskly to large swings in oil prices in the 1970s and 1980s. Growth in district mining employment averaged nearly 10 percent per year from 1972 to 1981, when the number of jobs in the sector reached its peak. Then as oil prices slipped somewhat in the early 1980s and plummeted in 1986, district mining employment fell by almost 11 percent per year from 1981 to 1991.

Migration effectiveness lends itself well to studying the relation between migration and economic

Chart 2
Tenth District Migration Effectiveness and Employment Growth Differential Between United States and Tenth District



Source: U.S. Department of Labor and Internal Revenue Service.

performance because it encompasses two important features of migration—its population redistributive power and its directionality. The high levels of migration effectiveness for the district both in the 1970s and the 1980s, and the significant reversal of direction of net migration flows, indicate the substantial redistribution of population into and out of the district. They also reflect the substantial changes in economic activity and structure that took place and the related shifts in economic opportunity for both residents and migrants.

Regional differentials in economic opportunity and their timing are important factors influencing migration. An analysis of district economic performance and migration from 1975-76 to 1991-92 bears this out. Chart 2 shows the district's migration effectiveness and the differential between national employment growth and district employment growth. Inspection shows that in years when district employment growth was above the nation's, the district tended to register effective inmigration. Conversely, when district employment growth was below the nation's, the district tended to post solidly effective outmigration.[11] Therefore, differences in economic opportunity between the district and the rest of the nation appear to have been closely

associated with the migration patterns of district states throughout the 1975-92 period.

Averages of district economic performance obscure some significant differences between district states. The greatest differences were between the district's mountain and energy states (Wyoming, Colorado, New Mexico, and Oklahoma) and the remaining states (Kansas, Missouri, and Nebraska). Events in the four mountain and energy states accounted for most of the overall swings in the district's average economic performance over the whole period. For example, the slowdown in district economic activity from the late 1970s to the late 1980s was substantially greater in the mountain and energy states than in the other states. Moreover, the mountain and energy states tended not to participate in the national economic downturns of 1980 and 1982 but experienced their own declines later in the decade. The other district states did take part in the national recessions of the early 1980s, however, and then generally maintained their growth through the decade. These state-by-state differences in economic performance were generally reflected in the migration patterns of the individual states.

WHO MOVED TO AND FROM THE DISTRICT?

The district's major swings in migration flows are important by themselves, but even more important may be the question of who was moving. Migration research has shown that migrant numbers often conceal much that is important about migration (Greenwood). Even with little or no population redistribution (that is, when migration effectiveness is zero or low), migration can still influence a region's economy by altering the composition of its population. Put another way, the characteristics of people moving out may be very different from those moving in.

An examination of migration data for the district reveals a troublesome trend. In the second half of the 1980s many states in the district suffered a "brain drain"—a net outflow of highly educated workers, those with college or more advanced degrees. Educational attainment is a crucial migration characteristic because human resources are one of the most important assets to a region's long-run economic growth. Moreover, states spend a sizable part of their resources in making higher education available to their residents and the return on this investment from a state's viewpoint depends on where its young people choose to live. Migration research shows that more educated and skilled members of the labor force are more likely to migrate because they typically have information about and participate in labor markets that extend well beyond regional boundaries (Greenwood and others; Gabriel and others). Thus, district states face a considerable challenge should current migration trends continue.

A brain drain from the district

An analysis of district migration flows from 1985 to 1990 reveals a marked brain drain from most district states. Six of seven district states suffered brain drains in degrees ranging from substantial to moderate (Table 2).[12] This, of course, was a period when the district economy was performing poorly relative to the nation, and one in which most district states experienced substantial net outmigration.

Nebraska and Missouri experienced substantial brain drains, but within different contexts. Nebraska had a large overall net outmigration, spread across all age groups and all education levels. Of the state's net outmigrants from 1985 to 1990, 54 percent were college graduates or advanced degree holders. Making matters worse, Nebraska's brain drain was more evident among persons younger than 45 than among those age 45 and older. Missouri, on the other hand, had net inmigration overall throughout the period but suffered a substantial net outmigration of college graduates and advanced degree holders. Thus, Missouri was gaining migrants with high school diplomas or even less

Table 2

Net Migration in Tenth District States by Educational Attainment, 1985-90

(25 years and over)

Migrants	Colorado	Kansas	Missouri	Nebraska	New Mexico	Oklahoma	Wyoming
Total	(51,255)	(24,176)	17,165	(24,055)	2,288	(83,277)	(37,528)
HS grad or less	(22,319)	(9,761)	21,653	(4,079)	(2,463)	(22,632)	(16,732)
Some college	(13,765)	(8,355)	7,708	(6,970)	(215)	(26,220)	(12,165)
Bachelors degree	(11,914)	(3,998)	(6,126)	(7,597)	1,525	(23,610)	(5,574)
Advanced degree	(3,257)	(2,062)	(6,070)	(5,409)	3,441	(10,815)	(3,057)

Note: Educational attainment in 1990.

Source: U.S. Bureau of the Census.

schooling while losing highly educated people. This pattern held true across all age groups.

Four other district states experienced brain drains, though to a lesser extent than Nebraska and Missouri. Oklahoma's brain drain was the largest of the four relative to overall net outmigration. Oklahoma also had the largest absolute number of net outmigrants with bachelor's degrees and advanced degrees of any district state. As a share of total net outmigration, net outflow of college graduates and holders of advanced degrees was smallest in Colorado, Kansas, and Wyoming. It was still significant, however, ranging from 23 percent for Wyoming to 30 percent for Colorado.

Though six states suffered brain drains, one district state benefited from a "brain gain." New Mexico had a net inflow of highly educated persons during the 1985-90 period. The net inmigration of college graduates and advanced degree holders into the state more than offset a net outflow of the less educated, leaving New Mexico with a small net inmigration overall. The state recorded net inmigration of advanced degree holders in all age groups.

Migration prospects for district states

Looking ahead, a critical question for most district states is whether their brain drains will continue. The answer will depend on two factors. The first is net migration. Are the district's large aggregate net outflows of the late 1980s likely to be continued or reversed in the 1990s? The second is whether the brain drain from most district states is systemic or just tied to the overall ebb and flow of net migration.

Two pieces of information provide insight on the prospects for net migration in the district in the 1990s—estimates of net migration to date and projections of net migration for the decade. Both indicate that for most district states net migration in the 1990s is more favorable than in the 1980s. Estimates by the U.S. Bureau of the Census of actual net interstate migration for district states from 1990 to 1993 show all of them except Missouri moving from outmigration to inmigration (or to lessened outmigration) (Table 3).[13]

Similarly, Census Bureau projections also

Table 3

Net Migration, District States

State	Actual		Estimated	Projected	
	1975-80	1985-90	1990-93	1990-95	1995-2000
Colorado	128,685	(77,998)	141,777	207,000	168,000
Kansas	(12,657)	(23,450)	(10,351)	13,000	16,000
Missouri	(23,377)	28,057	15,621	8,000	27,000
Nebraska	(28,473)	(39,950)	(6,152)	15,000	13,000
New Mexico	30,080	(11,457)	33,037	55,000	48,000
Oklahoma	116,818	(127,760)	(3,178)	—	26,000
Wyoming	47,358	(56,693)	3,348	14,000	14,000

Source: U.S. Bureau of the Census.

show significant changes in net migration patterns across the district in the early 1990s compared with the late 1980s (Table 3).[14] Most district states are projected to have net inmigration from 1990 to 1995. Only Missouri is projected to have a smaller net inflow than in the late 1980s. Oklahoma is projected to have zero net migration, but that compares favorably with sizable net outmigration in the late 1980s. Net inmigration is projected for all district states in the second half of this decade.

The projections for district states are not fully consistent with the estimates of actual net migration for 1990-93. The estimates of net migration in the early 1990s seem generally consistent with the projections for the mountain states of Colorado, New Mexico, and Wyoming, and for Missouri. But the return to net inmigration projected for Kansas, Nebraska, and Oklahoma does not show up in the 1990-93 estimates, which indicate continued net outmigration from these three states in the early 1990s.[15]

Neither the estimates of net migration in the early 1990s nor the projections of interstate migration for the 1990s contain any information about the composition of the migrant flows involved. Hence they reveal nothing directly about the prospects for continued brain drains from district states. It is possible, however, to consider the potential influence of a changed aggregate migration environment on the brain drain situation by examining their relationship in the late 1970s. The district recorded strong net inmigration overall in that period, although there were significant differences between the states.

The situation may be most favorable for Colorado and New Mexico. Both states are experiencing strong net inmigration flows in the early 1990s, a trend that is likely to continue. An examination of their experience in the late 1970s shows a favorable relationship between aggregate migration and the flow of highly educated people. Nearly 40 percent of Colorado's large net inmigration in the late 1970s were highly educated persons (Table 4). Substantial net inmigration in the 1990s might again be associated with net inflows of the highly educated. And New Mexico, with amenities and a high tech

Table 4

Net Migration of the Highly Educated

Age 25 and Over in Census Year, by Educational Attainment

	1975-80			1985-90		
	Number of migrants		Percent	Number of migrants		Percent
	Total	Highly educated	Highly Educated	Total	Highly educated	Highly Educated
Colorado	62,588	24,479	39.1	(51,255)	(15,171)	(29.6)
Kansas	(18,124)	(8,077)	(44.6)	(24,176)	(6,060)	(25.1)
Missouri	(12,412)	(12,208)	(98.4)	17,165	(12,196)	(71.1)
Nebraska	(20,080)	(8,458)	(42.1)	(24,055)	(13,006)	(54.1)
New Mexico	23,684	7,204	30.4	2,288	4,966	217.0
Oklahoma	55,784	4,147	7.4	(83,277)	(34,425)	(41.3)
Wyoming	21,454	4,498	21.0	(37,528)	(8,631)	(23.0)

Note: Highly educated denotes bachelors or advanced degree.
Source: U.S. Department of Commerce.

industrial structure similar to Colorado's, may be expected to see net inmigration of highly educated persons in the 1990s as it did in both the late 1970s and 1980s.

Other district states may have less reason to expect significant improvement in their ability to retain or attract highly educated persons, barring unforeseen, notable changes in their relative economic performance or industrial structure. Kansas and Nebraska had substantial net outflows of highly educated people in the late 1970s and the late 1980s, both periods of overall net outmigration. About the same number of college graduates and advanced degree holders left Missouri in the 1980s (a period of overall net inmigration) as in the 1970s (a period of net outmigration). And while Oklahoma and Wyoming experienced massive overall net inmigration in the late 1970s, highly educated migrants made up only a small share of the total. Oklahoma's case is the more extreme. Less than 10 percent of that state's net inmigrants in the late 1970s were college graduates or advanced degree holders, but just over 40 percent of Oklahoma's net outmigrants in the late 1980s had that amount of schooling. The potential for continued brain drains in the 1990s is a worrisome prospect for these four states.

SUMMARY AND CONCLUSIONS

Interstate migration of people has been an important feature of the recent economic history of Tenth District states. From the mid-1970s to the early 1990s, district states experienced substantial swings in net migration and its effectiveness in redistributing population. A flood of net inmigrants into the district in the 1970s and early 1980s was followed by a surge of net outmigrants through the

late 1980s. These flows reflected district economic performance stronger than the nation's in the earlier period, followed by district performance weaker than the nation's in the later period. Much, but not all, of the difference in relative performances was due to boom and bust in the energy sector, with its related linkages to the rest of the economy. With the dampening of the energy cycle and a return to relatively favorable economic performance in the region, moderate net migration into the district resumed in the early 1990s.

The ebb and flow of economic opportunity in the district compared with that in the rest of the nation have provided much of the push and pull to migration. But aggregate flows of migrants—even net flows that provide population redistribution between regions—are not the whole story. The composition of migrant streams may be as, if not more, important. The net inflow or outflow of migrants with particular attributes, such as high levels of educational attainment, can have their own effects apart from the impact of overall numbers. For example, the 1985-90 period was marked by Nebraska's substantial brain drain and New Mexico's brain gain—as well as by Missouri's net outmigration of highly educated persons coincident with a net inmigration of those with less schooling.

Projections of net migration for the 1990s, as well as estimates of actual migration for 1990-93, are more positive for Colorado and New Mexico than for the other district states. However, these estimates and projections of aggregate migration reveal nothing about the composition of expected future migrant flows, including movements of highly educated people. But given the growing importance of human capital for economic development, the ability to retain and attract highly educated people is especially important to the long-run economic health of district states. Some states in the region probably face an uphill climb in this regard.

APPENDIX

Table A1

Gross and Net Migration, Tenth District States, 1975-92

	1975-76	1976-77	1978-79	1980-81	1981-82	1982-83	1983-84	1984-85
Colorado								
Gross in	144,309	156,955	170,874	167,475	178,628	149,661	149,352	140,775
Gross out	128,651	131,254	137,620	129,683	127,881	128,754	136,514	135,491
Net in	15,658	25,701	33,254	37,792	50,747	20,907	12,838	5,284
Kansas								
Gross in	89,651	88,480	86,913	87,447	83,418	77,895	83,330	78,176
Gross out	87,299	91,971	95,628	91,474	94,675	86,739	93,947	89,665
Net in	2,352	(3,491)	(8,715)	(4,027)	(11,257)	(8,844)	(10,617)	(11,489)
Missouri								
Gross in	124,178	133,355	133,835	118,459	115,441	117,936	126,061	118,614
Gross out	129,874	131,379	139,193	135,515	145,362	120,016	124,505	121,865
Net in	(5,696)	1,976	(5,358)	(17,056)	(29,921)	(2,080)	1,556	(3,251)
Nebraska								
Gross in	48,570	51,457	46,211	43,775	41,784	39,293	42,647	39,712
Gross out	52,150	57,509	57,665	50,804	51,703	48,217	50,511	52,245
Net in	(3,580)	(6,052)	(11,454)	(7,030)	(9,919)	(8,924)	(7,864)	(12,533)
New Mexico								
Gross in	67,276	69,136	71,223	71,453	75,339	70,877	70,131	65,816
Gross out	56,820	60,220	61,547	65,860	67,070	59,809	64,380	61,232
Net in	10,456	8,916	9,676	5,593	8,269	11,068	5,751	4,584
Oklahoma								
Gross in	108,605	112,991	115,951	126,404	167,438	127,929	106,,093	87,847
Gross out	90,095	93,093	98,272	94,011	89,796	103,833	115,992	112,535
Net in	18,510	19,898	17,679	32,393	77,642	24,096	(9,899)	(24,688)
Wyoming								
Gross in	33,470	36,739	40,282	43,271	42,225	29,502	25,736	25,127
Gross out	25,482	26,988	29,220	32,856	34,992	36,539	35,102	33,019
Net in	7,988	9,751	11,062	10,415	7,233	(7,037)	(9,366)	(7,892)
Tenth District								
Gross in	476,564	501,110	513,203	508,100	545,035	470,988	460,826	422,574
Gross out	430,876	426,419	467,059	450,019	452,241	441,802	478,427	472,559
Net in	45,688	74,691	46,144	58,081	92,794	29,186	(17,601)	(49,985)

	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92
Colorado							
Gross in	138,664	133,864	117,480	120,934	130,645	136,186	149,403
Gross out	139,335	142,218	142,896	140,146	132,755	116,100	110,554
Net in	(671)	(8,354)	(25,416)	(19,212)	(2,110)	20,086	38,849
Kansas							
Gross in	78,065	79,115	76,748	74,525	76,147	73,055	77,217
Gross out	89,753	86,382	79,730	81,265	83,282	80,065	74,530
Net in	(11,688)	(7,267)	(2,982)	(6,740)	(7,135)	(7,010)	2,687
Missouri							
Gross in	121,374	123,557	116,252	115,891	119,197	110,753	110,603
Gross out	118,967	114,413	113,471	114,186	114,453	112,174	110,384
Net in	2,407	9,144	2,781	1,705	4,744	(1,421)	219
Nebraska							
Gross in	37,860	38,578	37,693	40,601	42,749	40,324	40,866
Gross out	53,653	52,068	46,271	45,704	45,446	40,940	40,799
Net in	(15,793)	(13,490)	(8,578)	(5,103)	(2,697)	(616)	67
New Mexico							
Gross in	65,898	64,010	58,024	60,224	63,298	64,996	67,195
Gross out	63,127	63,147	63,261	63,555	64,646	60,823	58,289
Net in	2,771	863	(5,237)	(3,331)	(1,348)	4,173	8,906
Oklahoma							
Gross in	84,163	74,900	71,195	77,510	83,545	84,399	86,873
Gross out	111,509	120,289	106,887	96,911	94,496	85,393	81,487
Net in	(27,346)	(45,389)	(35,692)	(19,401)	(10,951)	(994)	5,386
Wyoming							
Gross in	25,099	18,355	18,907	20,090	21,061	22,125	22,806
Gross out	33,913	38,985	30,310	27,554	25,751	22,181	21,117
Net in	(8,814)	(20,630)	(11,403)	(7,464)	(4,690)	(56)	1,689
Tenth District							
Gross in	419,699	402,485	375,974	389,832	416,064	415,590	438,861
Gross out	478,833	487,608	462,501	449,378	440,251	401,428	381,058
Net in	(59,134)	(85,123)	(86,527)	(59,546)	(24,187)	14,162	57,803

Source: Internal Revenue Service.

Chart A1

Net Migration, Tenth District States, 1975-92

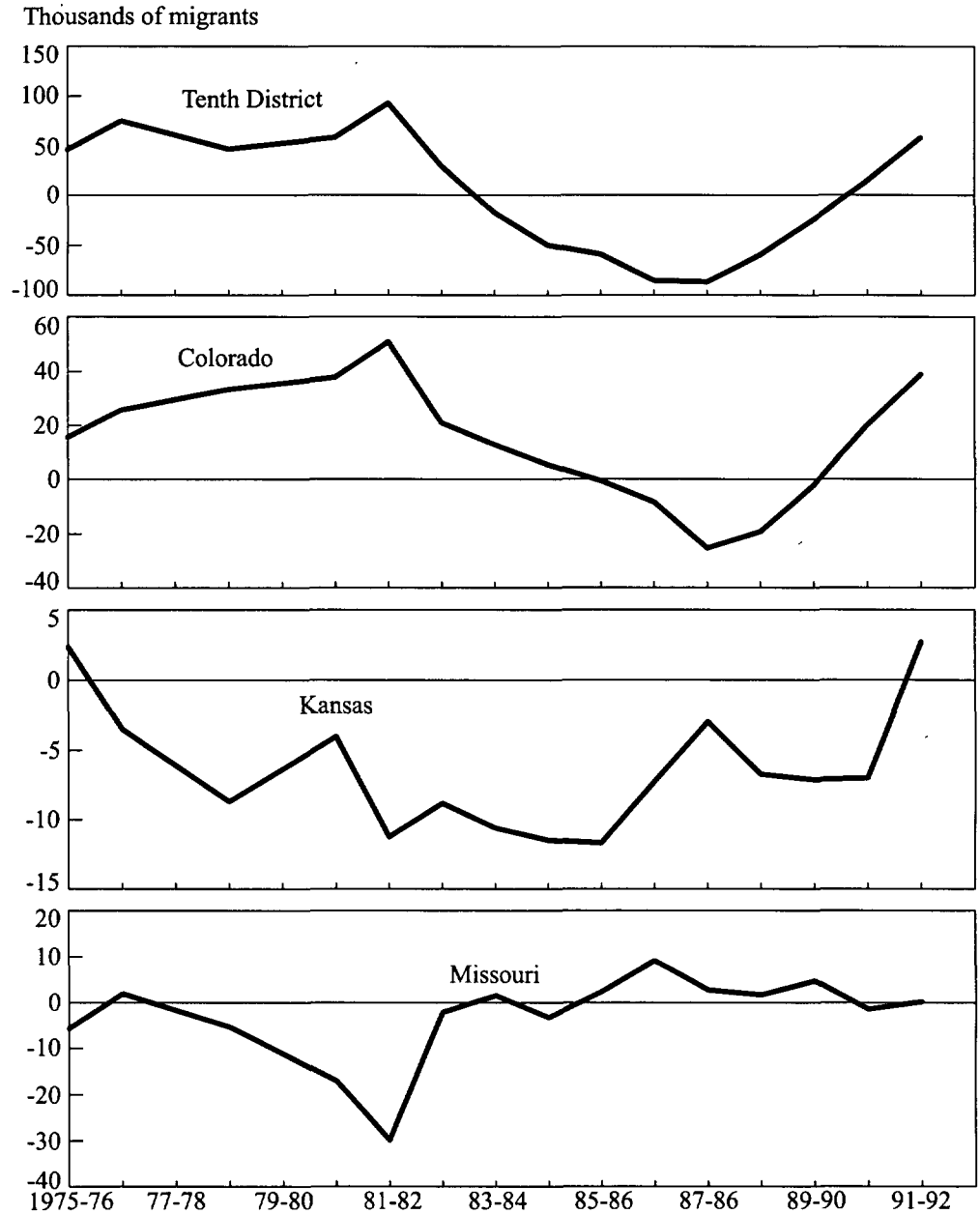
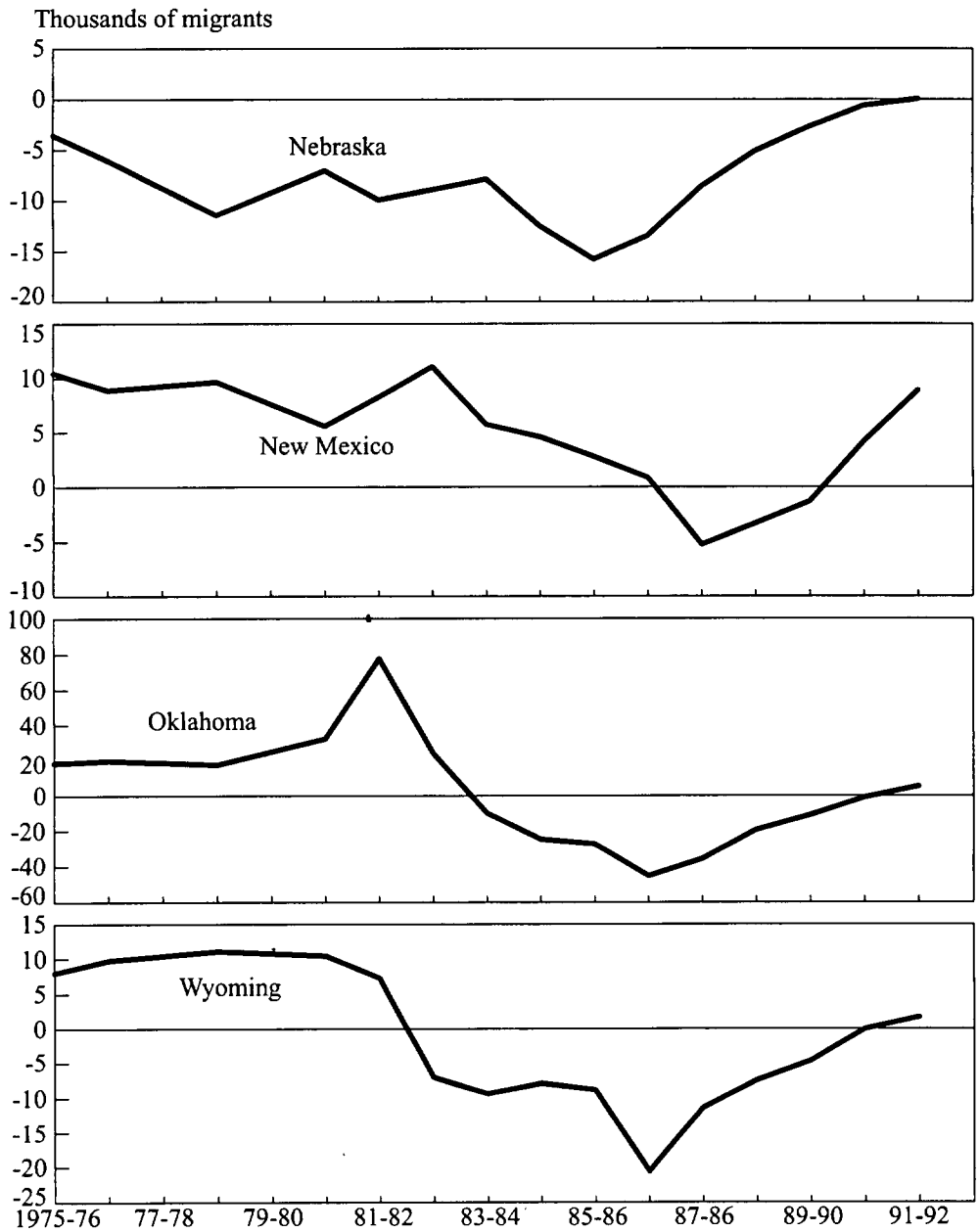


Chart A1, continued

Net Migration, Tenth District States, 1975-92



ENDNOTES

[1] "Areas of rapid growth seem certain to lose some of their gains because young and mobile in-migrants may leave the area for other promising places, or because in-migrants decide to return to their former region of residence. Areas that have been losing migrants, likewise, should receive some of their people back" (Rogerson and Plane 1985, p. 47).

[2] Economic change that stimulates inmigration generally has other effects on the local economy as well. Some of the associated new jobs will be taken by residents who were formerly unemployed or not in the labor force. And, backward and forward linkages from the industry whose growth stimulated the migration will be partly felt in the region.

[3] Internal migration data for the United States are available from several sources. The data used here are the Internal Revenue Service (IRS) annual data, which are derived from individual income tax returns. "Migration is estimated by matching individuals' returns from one year to another by Social Security number and comparing the addresses to identify movers and nonmovers" (Isserman and others, p. 287). The IRS data are valuable because they provide information on gross flows of people from state to state, on an annual basis, and with nearly total coverage of the U.S. population. The data, which include filers plus the number of exemptions claimed (except exemptions for age and blindness in order to avoid double-counting), cover more than 90 percent of the U.S. population though coverage varies from state to state. Disadvantages of the IRS data include the lack of detailed information on migrant characteristics, and possible inaccuracies arising from factors such as listed exemptions not changing residences when filers do. Nevertheless, the availability of annual data on place-to-place flows makes the IRS series valuable despite their limitations. Gaps in the series exist for the years 1977-78 and 1979-80, for which the data are not available. For a detailed review and critical assessment of five major federally-produced migration series, see Isserman and others 1982. For other discussions of the IRS data, see Engels and Healy 1981, Gabriel and others 1993, McHugh and Gober 1992, and Rogerson and Plane 1985.

[4] Appendix Table 1 shows for the Tenth District and its states how the area's net migration resulted from much larger inflows and outflows of people. It is not unusual for large numbers of people to flow into and out of a state at the same time that net migration is relatively small. Indeed, a state may have significant net losses of population by outmigration while experiencing substantial inflows of people at the same time (Engels and Healy, p. 1347). The district's total gross migration ranged from 800,000 to 1 million persons per year from the mid-1970s to the early 1990s. Thus a substantial amount of "population swapping" underlies the net migration flows recorded by all district states during the period. Use of the IRS data also allows the identification of the states of origin and destination of migrants who flowed into and out of district states, both for gross flows and for net flows. Thus interstate migration paths can be identified and their stability over time can be observed. For details on district states, see Miller 1994.

[5] Even with little or no population redistribution in the aggregate, however, migration can change the composition of populations in both origin and destination regions due to flows of particular subgroups. The migration of subgroups with different characteristics may have different consequences, at places of both origin and destination.

[6] This measure is often labeled "migration efficiency"; for example, in Plane 1984, and McHugh and Gober. "Migration effectiveness" is used here to avoid any confusion with the concept of economic efficiency. Migration effectiveness is intended to be interpreted only in demographic terms and should not be interpreted as an indicator of economic efficiency.

[7] For further discussion see McHugh and Gober, and Plane 1984. Users of the migration effectiveness measure as an analytical tool should be fully aware of the important caveat noted by McHugh and Gober: "... migration may alter the composition of the population even under the condition of overall low demographic efficiency. This is because directionality in flows among particular subgroups of the population may be masked within aggregate migration data" (p. 429). The migration of subgroups with different characteristics may have different consequences, for both origin and destination regions.

[8] While the net migration rate also shows the contribution to population change and its direction, some demographers prefer migration efficiency over the net migration rate for analysis of changing migration patterns. "Because the net migration rate is typically computed using area j's total population as the denominator, it is influenced by the entire preceding history of population change in area j. In contrast, the efficiency ratio is a function solely of current period movements" (Plane 1984, p. 296).

[9] The measure of migration effectiveness used here, called area-based effectiveness, focuses on a single state or region as the area of analysis. The migration effectiveness for a state is its total net migration (in or out) as a percent of its total inmigration and outmigration. A state's area-based migration effectiveness may range from -100 to +100 percent; a value

of zero means the number of people leaving the state just equals the number moving in. Two other measures of migration effectiveness are also widely used. The first, called system effectiveness, measures the overall demographic effectiveness of the nation's interstate migration system by showing the net interstate redistribution of population per 100 total migrants. The other, called stream effectiveness, measures the amount of net migration between specific pairs of states relative to the size of their underlying gross migration flows (McHugh and Gober, pp. 429-33).

[10] Changes in other indicators, such as gross state product, personal income, and the unemployment rate, were similar to the changes in employment.

[11] An analysis of the correlation between district migration effectiveness and regional economic differentials over the period shows that differentials in economic growth between the district and the nation are strongly related to the district's area-based migration effectiveness. For example, a large differential between national and district income growth in favor of the nation tends to be strongly associated with highly effective outmigration from the district. And a large differential in favor of district income growth tends to be strongly associated with highly effective inmigration to the district. For further discussion and presentation of the values of the correlation coefficients, see Miller 1994.

[12] Because information on migrant characteristics is not available from the IRS annual data, migration data from the 1990 census are used. These data show population flows from 1985 to 1990. As a part of each census, a sample of the population are asked where they lived five years earlier. Their responses provide the material for tabulations for each state of the number of outmigrants identified by state of destination and inmigrants identified by state of origin. Consequently, interstate gross and net migration flows can be constructed for each state for the five-year time span ending with the census date. The data can also be compiled according to several characteristics of the migrants, including age, occupation, and educational attainment.

[13] These estimates are also from the U.S. Bureau of the Census, but are not strictly comparable with the projected data. The estimates are not directly measured, but are developed as residuals in the process of estimating population. Indeed, these estimates are identified in Census Bureau publications as "residual change". The Census Bureau notes, however, that most of the residual change component is domestic (interstate) net migration. For further detail, see U.S. Department of Commerce, Bureau of the Census, *State Population Estimates by Age and Sex: 1980 to 1992*, Current Population Reports, P25-1106, November 1993, p. v.

[14] U.S. Department of Commerce, Bureau of the Census, *Population Projections for States, by Age, Sex, Race, and Hispanic Origin: 1993 to 2020*, Current Population Reports P25-1111, March 1994. The projections shown in Table 3 are from the Census Bureau's "preferred series", which projects migration using a time series model. Alternative projections are also available. For details, see pp. xxix-xxxi.

[15] The continued net outmigration from these three states in the early 1990s is more in line with an alternative set of projections also published by the Census Bureau. The alternative projections are from an economic model that relates migration primarily to employment projections from the Bureau of Economic Analysis. Both projections show movements toward increased inmigration in the early 1990s over the late 1980s for all district states except Missouri, but the preferred series uniformly shows larger movements toward increased inmigration.

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