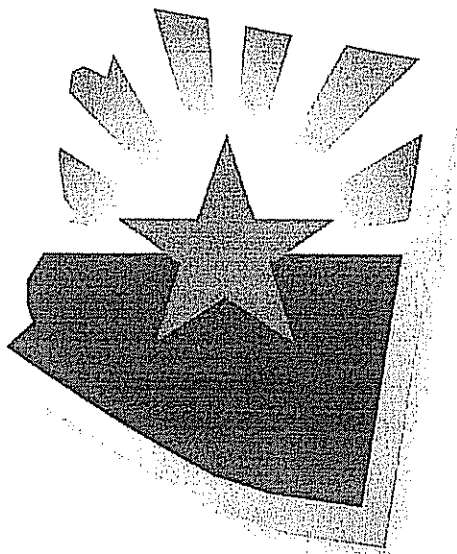


# STATEWIDE ECONOMIC STUDY 2002



## ARIZONA'S INTERNATIONAL EXPORTS

July 2002

Prepared for the Arizona Department of Commerce

by

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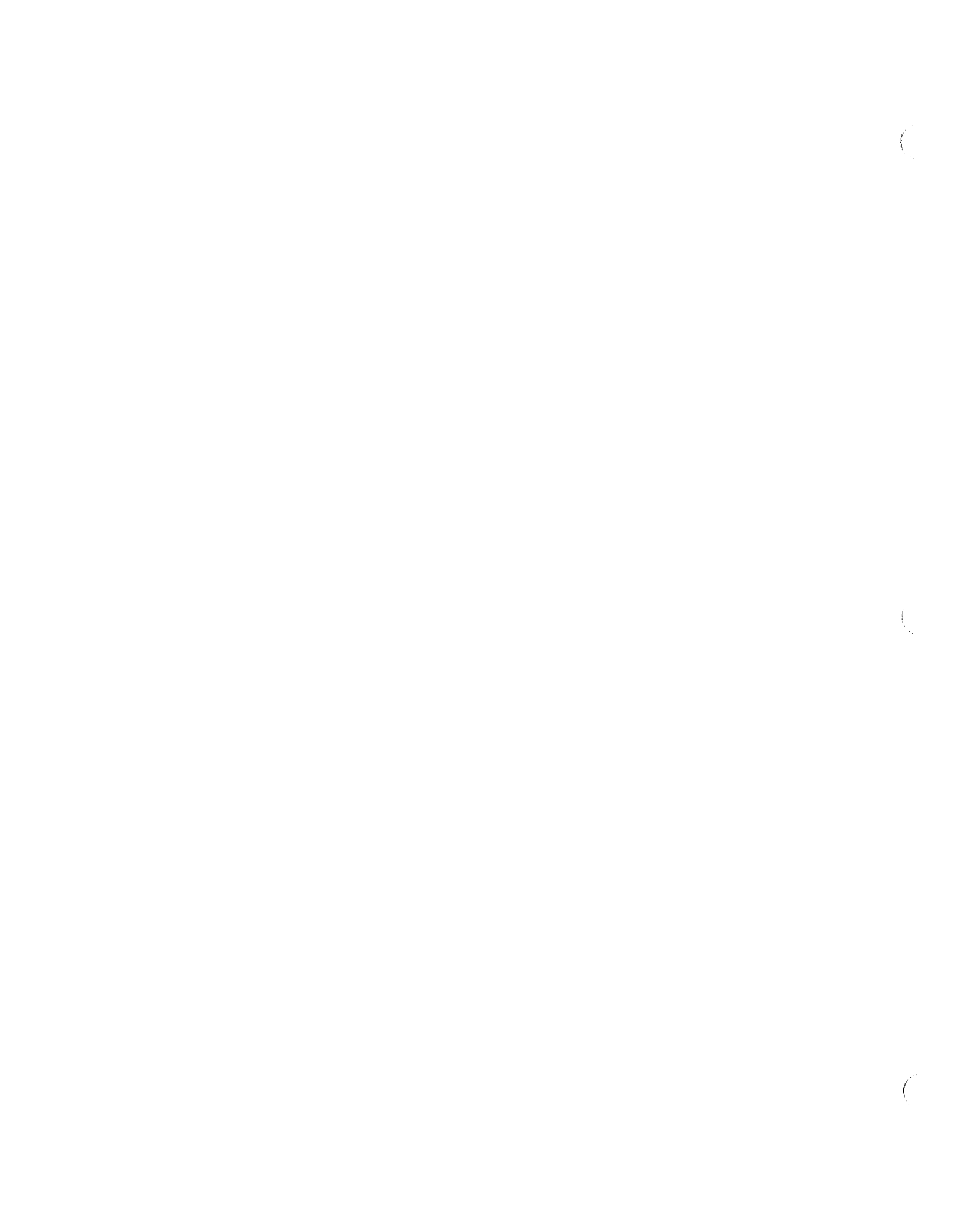
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# ARIZONA'S INTERNATIONAL EXPORTS

July 2002

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## INTRODUCTION

This report examines the contribution to Arizona's economy of exports to **other countries**. Exports are important since fresh dollars flow into the state, thereby raising the standard of living for Arizonans. Exports also are valued for the higher pay levels normally associated with higher-skilled export jobs. (Conceptually, the same is true for exports to other U.S. states, of course. Here, the focus is on exports to foreign destinations.)

In 2001, Arizona exports were 7.6% of GSP, slightly above the national average<sup>1</sup>. Although Arizona's exports have grown during the past decade, they are 9.5% lower than in 1997, ranking Arizona 47<sup>th</sup> among all states for growth during the 1997-2001 period.

Through the state's Department of Commerce, Arizona maintains trade offices in Taiwan (opened in 1987), Mexico (1993), Japan (1993), and the United Kingdom (1995).

## METHODOLOGY

The data used here is that of the U.S. Census Bureau, Foreign Trade Division, who produces two separate series on exports. The Origin of Movement (OM) series provides export statistics based on the state from which the merchandise starts its journey. This is not necessarily the state where the product was manufactured, grown or mined. The OM series tends to overstate exports for major port states. The alternative measure, Exporter Location (EL) series, allocates exports to states based on the zip code of the exporter, i.e., a broker or wholesaler, or company's headquarters. As such, neither measure reflects where the product was produced. Despite these limitations, the origin of movement series is generally acknowledged as the better reflection of state exports.

An alternative source is provided by the Massachusetts Institute for Social and Economic Research (commonly referred to as the MISER data). The difference between them lies in the large volume of exports that go unallocated to a state due to incomplete or illegible export documents. MISER takes the Census Bureau data and fills in missing industry and state information using an imputation algorithm. For any given state or industry, the MISER data show larger amounts.

Data for metropolitan areas is available also from the U.S. Census Bureau, Foreign Trade Division. These tabulations are based on the Exporter Location series. All other data cited above is Origin of Movement data.

None of these measures include the value of services exported (technical expertise, consulting, engineering services, etc.), for which there is no data. Only the value of physical products is represented.

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<sup>1</sup> Estimates for Gross State Product provided by Economy.com

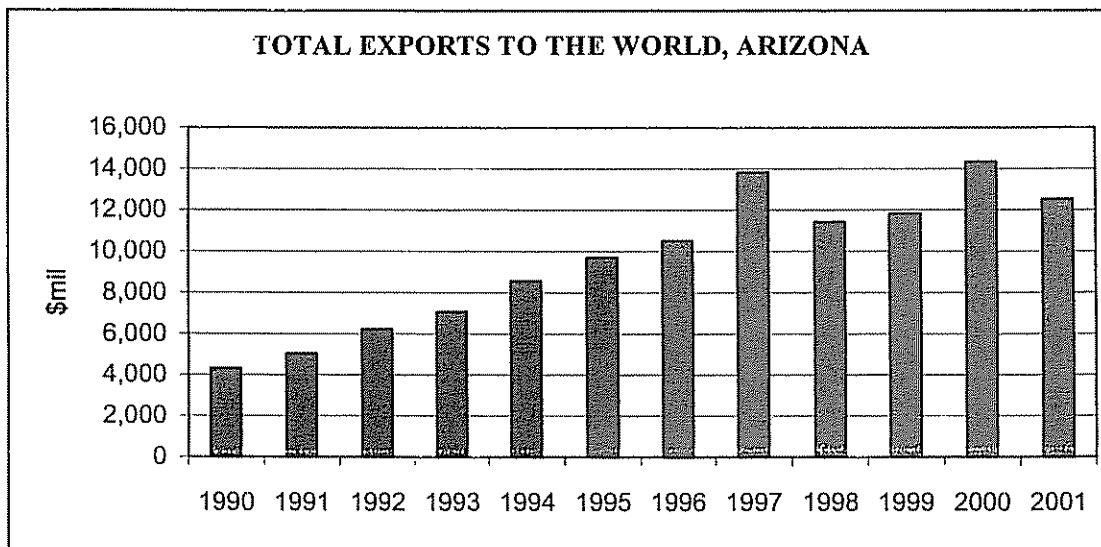
## ANALYSIS

**INTERNATIONAL EXPORTS OVER THE LAST DECADE**

In 2001, Arizona exported products valued at more than \$12.5 billion, down 12.7% from a record \$14.3 billion in 2000. The drop reflects recessionary conditions among many of our trading partners as well as in the United States.

Compared to 1990, Arizona exports nearly tripled over the past eleven years, growing by an average 10.2% per year. The increase was not uniform from year to year, however, as swings in world currencies, recessions, and falling trade barriers affected exports to certain countries at different times (Figure 1). The North American Free Trade Agreement (NAFTA) was enacted in January of 1994. That year, exports to Mexico and Canada surged, increasing by 25.8% and 18.9%, respectively. In December of 1994, Mexico devalued its currency by some 22%, thereby throwing its economy into recession and drying up demand for American goods. It took four years before Arizona exports to Mexico regained those losses. The Asian crisis of 1997-98 brought similar results, with exports to "Asian 10" countries plummeting by 32.2% in 1998. In 2001, exports to the Asian 10 still had not recovered, remaining 42.7% below 1997 record levels.

FIGURE 1



Source: U.S. Bureau of the Census, Origin of Movement Series

In 2001, Arizona exports as a percentage of Gross State Product (GSP) stood at 7.6%, slightly above the nationwide 6.8%. Arizona's economy is highly dependent on exports, ranking eighth among all states on this measure. Interestingly, its dependence has fallen considerably since the Asian crisis, when exports accounted for 11.3 percent of GSP (and it ranked 6th). The decline of 3.7 percentage points is the second largest among all states.

**WHO ARE ARIZONA'S TRADING PARTNERS?**

Arizona's largest trading partner is Mexico, which accounted for 28.6% of total exports in 2001, or nearly \$3.6 billion. Canada accounted for 10.7%. The United Kingdom, Malaysia, France, Germany, Japan, Singapore, Thailand, and Taiwan round out the top ten (Figure 2). The top ten account for more than three-fourths of Arizona's exports. The top 30, account for all but 3.5%.

FIGURE 2

ARIZONA'S TOP EXPORT MARKETS 2001 (Ranked by Dollar Value)			
			% of Total
	TOTAL EXPORTS	\$12,513,510,020	
1	Mexico	3,581,323,120	28.6
2	Canada	1,335,746,584	10.7
3	United Kingdom	984,030,634	7.9
4	Malaysia	915,274,655	7.3
5	France	632,045,464	5.1
6	Germany	594,489,428	4.8
7	Japan	478,434,397	3.8
8	Singapore	380,865,117	3.0
9	Thailand	335,208,286	2.7
10	Taiwan	332,188,890	2.7
	Total Exports	\$12,513,510,020	
	Top 10 Markets	\$ 9,569,606,575	
	Top 10 Share		76.5
	Rest of World	\$ 2,943,903,445	23.5

Source: U.S. Bureau of the Census, Origin of Movement Series

Figure 3 shows Arizona exports to selected regions. The Asian 10 countries' share has fallen from 33.5% in 1990 to 27.5% in 2001. Canada's share also has fallen – to 10.7% from 12.7%. Meanwhile, exports to Mexico, Latin America and the Caribbean countries have gained shares. At 28.6% of the total, Arizona now exports more to Mexico than to the Asian 10.

FIGURE 3

ARIZONA EXPORTS TO THE WORLD BY REGION 1990-2001					
	Millions Dollars		% Share		Avg Annual % Change
	1990	2001	1990	2001	1990-2001
Total Exports to the World	4,300	12,514	100.0	100.0	10.2
Asian 10 Countries	1,440	3,447	33.5	27.5	8.3
Mexico	831	3,581	19.3	28.6	14.2
Canada	545	1,336	12.7	10.7	8.5
Latin America And The Caribbean	67	520	1.6	4.2	20.4
Europe	825	2,159	19.2	17.3	9.1

Source: U.S. Bureau of the Census, Origin of Movement Series

The Asian 10 are China, Hong Kong, Indonesia, Japan, Malaysia, Philippines, Singapore, S. Korea, Taiwan and Thailand

## WHAT DOES ARIZONA EXPORT?

Electrical machinery accounts for two of every five dollars exported from Arizona (Figure 4). This represents primarily semiconductors, electronic components, printed circuit boards, communications

equipment, magnetic and optical recording media, and equipment that incorporates lasers. Intel, Motorola, and Texas Instruments are some of the larger Arizona companies.

Machinery, the second largest product category at 17.5% of total exports, includes such products as heating and air conditioning equipment, optical instruments and lenses, engines, turbines and power transmission equipment.

Aircraft/spacecraft accounts for a little over ten percent of Arizona's exports. Included are aircraft assembly, missiles, guidance systems, avionics, and auxiliary power systems. Representative firms include Raytheon, Bombardier, Universal Avionics and Honeywell.

Optical/medical instruments and plastics are the only other categories representing more than two percent of the total. Plastics has tripled during the past decade.

FIGURE 4

ARIZONA EXPORTS TO WORLD BY PRODUCT, TOP 15					
Description	Millions U.S. Dollars		% Share		Avg Annual % Change 1996-2001
	1996	2001	1996	2001	
Commodities	10,502	12,514	100.0	100.0	3.0
Electrical Machinery	5,534	5,197	52.7	41.5	-1.0
Machinery	1,394	2,190	13.3	17.5	7.8
Aircraft/Spacecraft	493	1,270	4.7	10.2	17.1
Optic/Medical Inst	529	743	5.0	5.9	5.8
Plastic	173	526	1.7	4.2	20.3
Misc Art Of Base Metals	57	196	0.5	1.6	22.9
Vehicles/Not Railway	420	179	4.0	1.4	-13.3
Paper/Paperboard	90	175	0.9	1.4	11.7
Special Other	103	172	1.0	1.4	8.9
Arms and Ammunition	68	162	0.6	1.3	15.7
Cotton + Yarn/Fabric	184	152	1.8	1.2	-3.0
Iron/Steel Product	111	130	1.1	1.0	2.7
Copper + Articles	376	104	3.6	0.8	-19.3
Vegetables	63	101	0.6	0.8	8.1
Toys and Sports	63	72	0.6	0.6	2.4

Source: U.S. Bureau of the Census, Origin of Movement Series

Figure 5 presents similar data for exports to Mexico. Again, electrical machinery heads the list, accounting for an almost identical share of just over 40%. Plastics replaces machinery in second place, representing 13.3%. Machinery and paper/paperboard follow in order. Four more products account for more than two percent each.

FIGURE 5

ARIZONA EXPORTS TO MEXICO BY PRODUCT, TOP 15					
Description	Millions U.S. Dollars		% Share		Avg Annual % Change 1996-2001
	1996	2001	1996	2001	
Commodities	2,005	3,581	100.0	100.0	10.1
Electrical Machinery	595	1,492	29.7	41.7	16.5
Plastic	146	475	7.3	13.3	21.7
Machinery	342	323	17.0	9.0	-0.9
Paper/Paperboard	86	166	4.3	4.6	11.7
Misc Art Of Base Metals	17	110	0.9	3.1	36.0
Iron/Steel Product	86	100	4.3	2.8	2.4
Vehicles/Not Railway	261	81	13.0	2.3	-17.7
Optic/Medical Inst	20	77	1.0	2.2	25.4
Copper + Articles	32	69	1.6	1.9	13.8
Aluminum	45	57	2.2	1.6	4.2
Misc Grain/Seed	8	50	0.4	1.4	36.8
Meat	15	45	0.7	1.3	20.4
Knit Apparel	10	37	0.5	1.0	24.8
Rubber	23	34	1.2	0.9	6.3
Edible Fruit and Nuts	5	32	0.2	0.9	37.3

Source: U S Bureau of the Census, Origin of Movement Series

### METROPOLITAN AREA EXPORTS

In 1999, the most recent data available, the Phoenix-Mesa metro area exported over \$7.5 billion of products, accounting for 74.4% of the statewide total<sup>2</sup>. Metro Tucson exported a little over \$1 billion, or 10.5%. Data is available only for Arizona's two largest metro areas. Remaining counties account for a little over \$1.5 billion – or 15.1%.

### REFERENCES

U.S. Census Bureau, Foreign Trade Division, *U S Exports from Arizona (Origin of Movement Series)*; <http://www.census.gov/ftp/pub/foreign-trade/www/>

<sup>2</sup> The 1999 statewide total from the EL series is \$10,123,011,000. The metro area data is only tabulated from EL data.