

Firm Location and Urban Land Use Change

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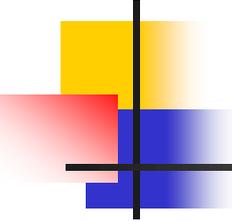


SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

SCAG Region

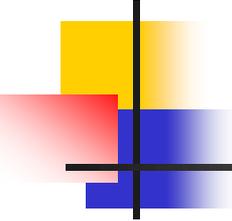
- Nation's largest Metropolitan Planning Organization (MPO)
- Consist of 6 Counties and 191 Cities
- 16th Largest Economy in the World
- Population: 18 million (5.8% of US population; 48.5% of CA population)
- Household: 5.8 million
- Wage Jobs: 7.8 million
- Parcels: 4.8 million





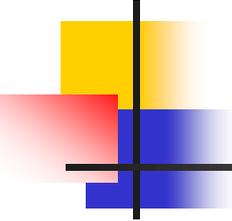
Theoretical Background

- Planners seek growth management through implementing land use regulations such as general plan, zoning, and other controls (Pendall, 2000)
- Land use controls do not always work as intended or advertised (Landis, 1992)



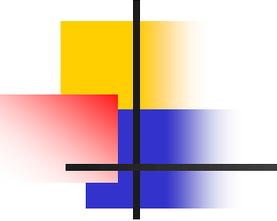
Data

- National Establishment Time-Series (NETS)
 - Longitudinal database - Firm level
 - Dun and Bradstreet (D&B)
 - Business establishments
 - Employment
 - Headquarter linkages
 - Relocation information
- Existing Land Use: parcel level from 1990 to 2012
- General Plan: parcel level from 2004 to 2012



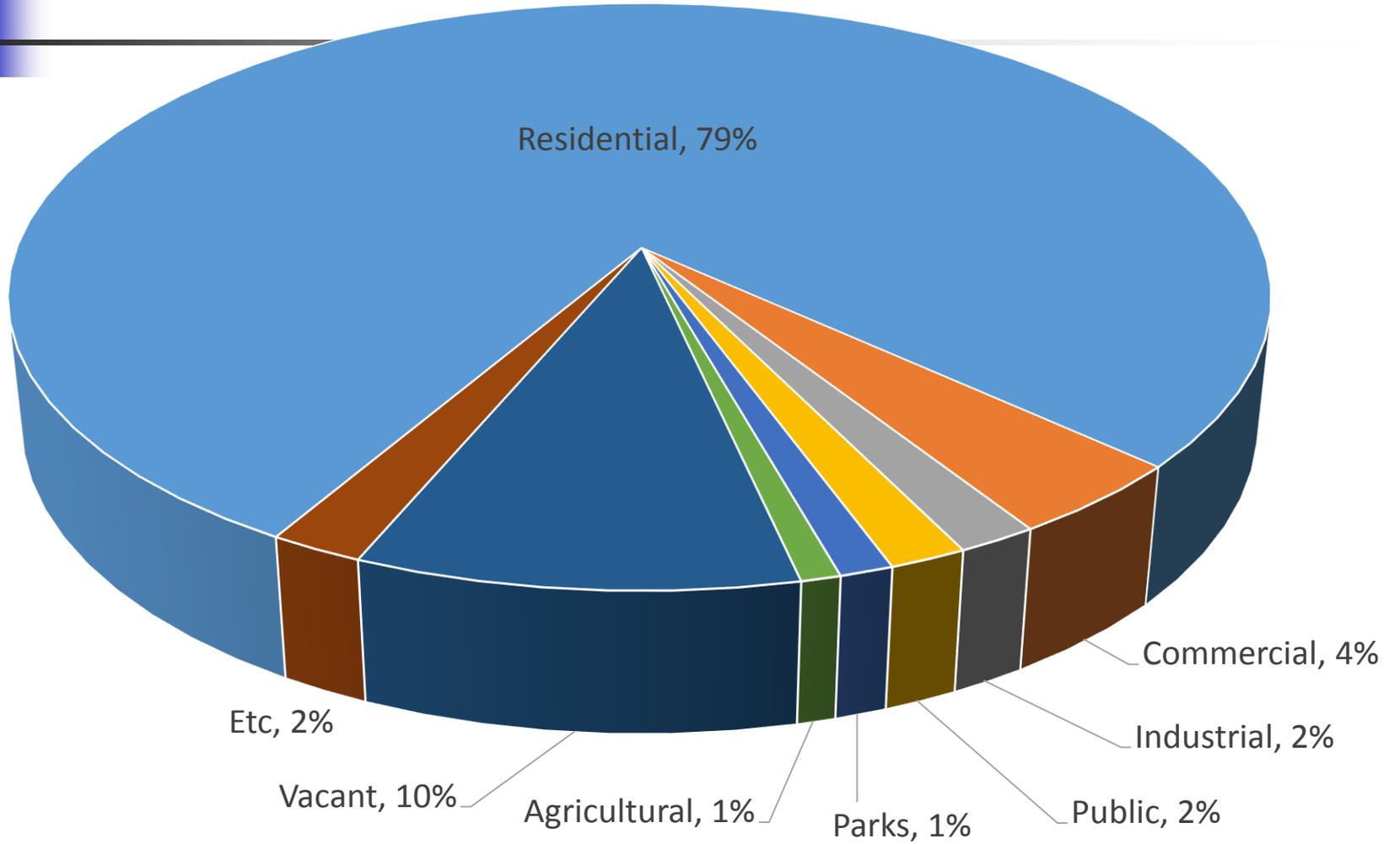
Data Processing

- General Plan Data
 - Collected from local jurisdictions
 - General Plan codes were re-categorized into standardized 39 codes
 - For the study purpose, the 39 codes were re-categorized into 8 categories
- Existing Land Use Data
 - Collected from local jurisdictions
 - Land use codes were re-categorized into standardized 101 codes
 - For the study purpose, the codes were re-categorized into 8 categories

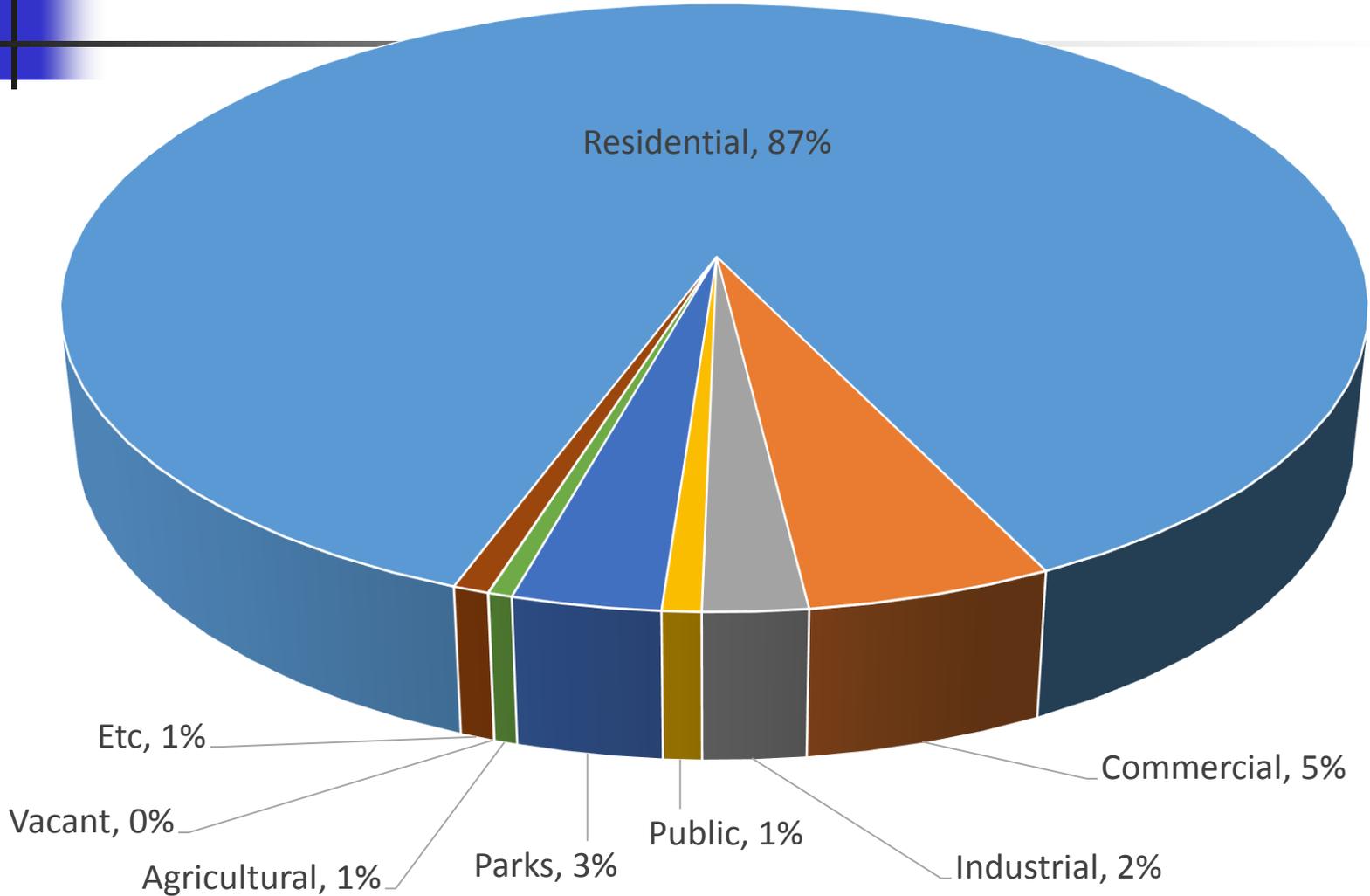
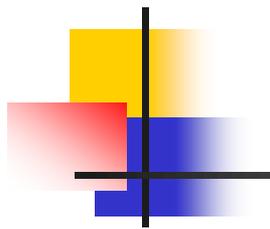


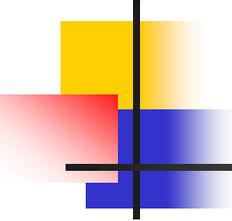
Re-Cat	Description	Code	Description
1	Residential	23	Residential Categories
2	Commercial	1	Regional Retail Categories
2	Commercial	2	Retail/Services Categories
2	Commercial	3	Commercial Categories
2	Commercial	4	Hotel Categories
2	Commercial	5	Miscellaneous Commercial Categories
2	Commercial	19	Urban Mixed Categories
2	Commercial	20	General Commercial Categories
3	Industrial	6	Light Industrial Categories
3	Industrial	7	Heavy Industry Categories
3	Industrial	8	Miscellaneous Industry Categories
3	Industrial	21	General Industrial Categories
4	Public	9	K-12 School Categories
4	Public	10	College Categories
4	Public	11	Transportation Categories
4	Public	12	Utilities Categories
4	Public	13	Other Institutions (Gov,Fire,Church,Clubhouse, Etc)
4	Public	22	Military Categories
5	Parks	15	Open Nodevelopable Categories
5	Parks	16	Cemetery Categories
5	Parks	17	Golf Course Categories
5	Parks	18	Parks Categories
6	Agricultural	14	Agriculture Categories
7	Vacant	0	Vacant
8	Etc	99	Etc

Existing Land Use



General Plan



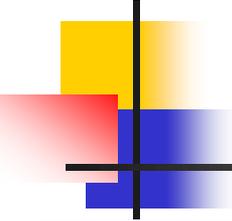


Data Processing (cont.)

■ NETS Data

- ❑ headquarter / address / location / credit score / industry classification / employment / sales / relocation
- ❑ California: 6,254,029
- ❑ SCAG Region: 3,147,303
- ❑ Firms between 2001 and 2011
- ❑ Simplified industry code: NAICS to 13 sector
- ❑ Verified location of firms

Descriptive Statistics of Firms



Year	EST	EMP	CAEDD EMP	MV_EST	MV_EMP	MV_EST %	MV_EMP %
2001	858,087	9,396,959	6,971,200	15,232	273,056	2%	3%
2002	980,466	9,917,993	6,958,000	16,278	282,264	2%	3%
2003	1,069,050	9,811,027	6,993,600	16,993	283,773	2%	3%
2004	1,090,616	9,718,717	7,108,600	17,278	276,727	2%	3%
2005	1,141,812	9,782,360	7,578,700	17,666	266,449	2%	3%
2006	1,212,395	9,920,808	7,412,400	17,719	261,278	1%	3%
2007	1,250,146	10,044,634	7,445,400	17,491	256,962	1%	3%
2008	1,363,870	10,201,691	7,323,100	17,655	262,322	1%	3%
2009	1,523,287	10,422,312	6,879,200	17,868	258,619	1%	2%
2010	1,304,617	9,655,525	6,781,800	15,696	238,305	1%	2%
2011	1,544,998	9,758,273	6,824,700	14,810	222,446	1%	2%

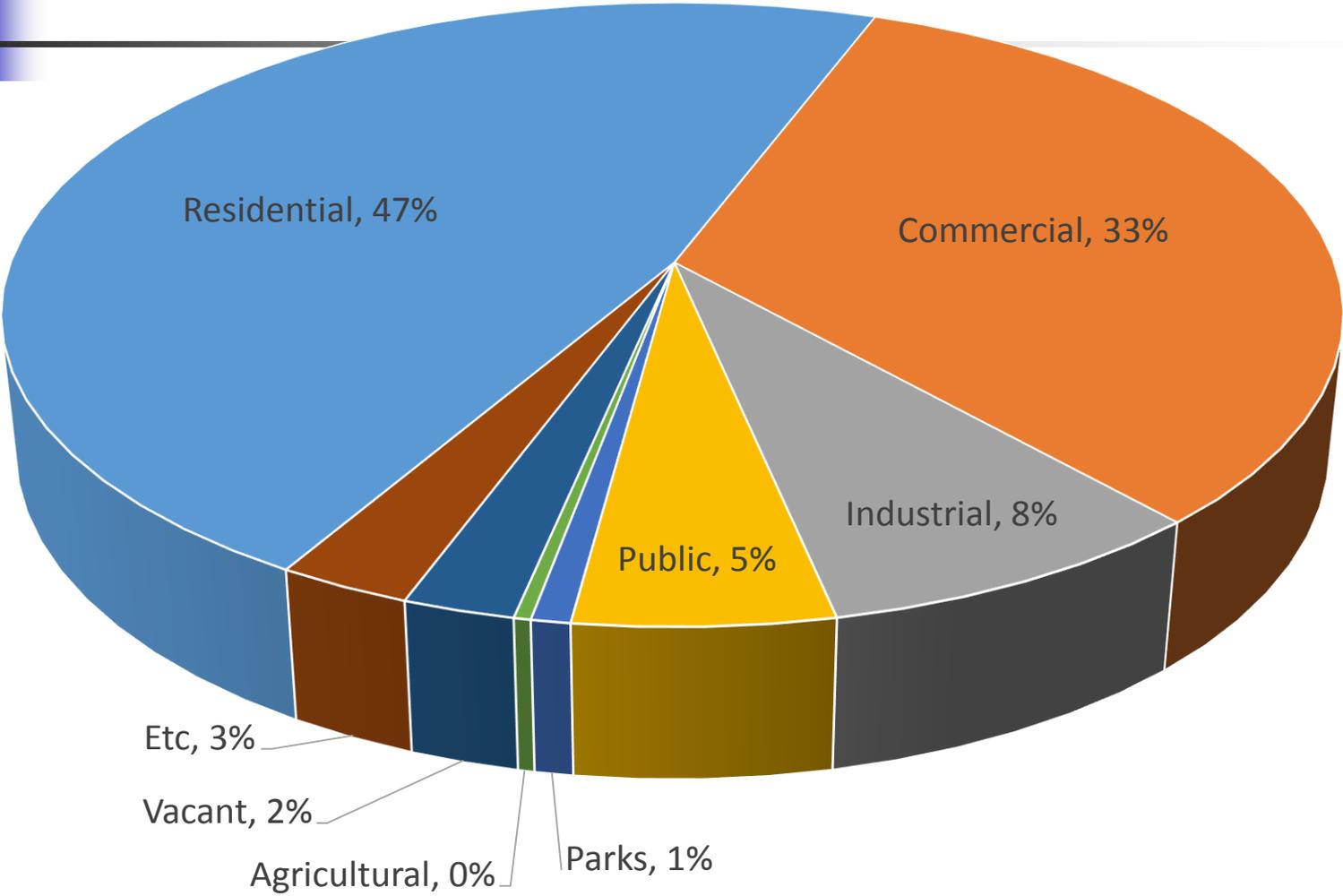
Descriptive Statistics of Firms – Sector (EST)

Sector	All EST	MV EST	All EST %	MV EST %
Agriculture	8,591	189	1%	1%
Construction	115,496	1,090	7%	7%
Manufacturing	68,714	1,806	4%	12%
Wholesale Trade	89,281	1,496	6%	10%
Retail	157,629	1,276	10%	9%
Trans&Util	39,069	407	3%	3%
Information	48,391	744	3%	5%
FIRE	157,111	1,117	10%	8%
Pro Biz Services	512,464	4,562	33%	31%
Education&Health	126,157	743	8%	5%
Leisure Hospitality	70,217	527	5%	4%
Other Services	144,167	842	9%	6%
Government	4,972	8	0%	0%
ETC	2,739	76	0%	1%
Sum	1,544,998	14,883	100%	100%

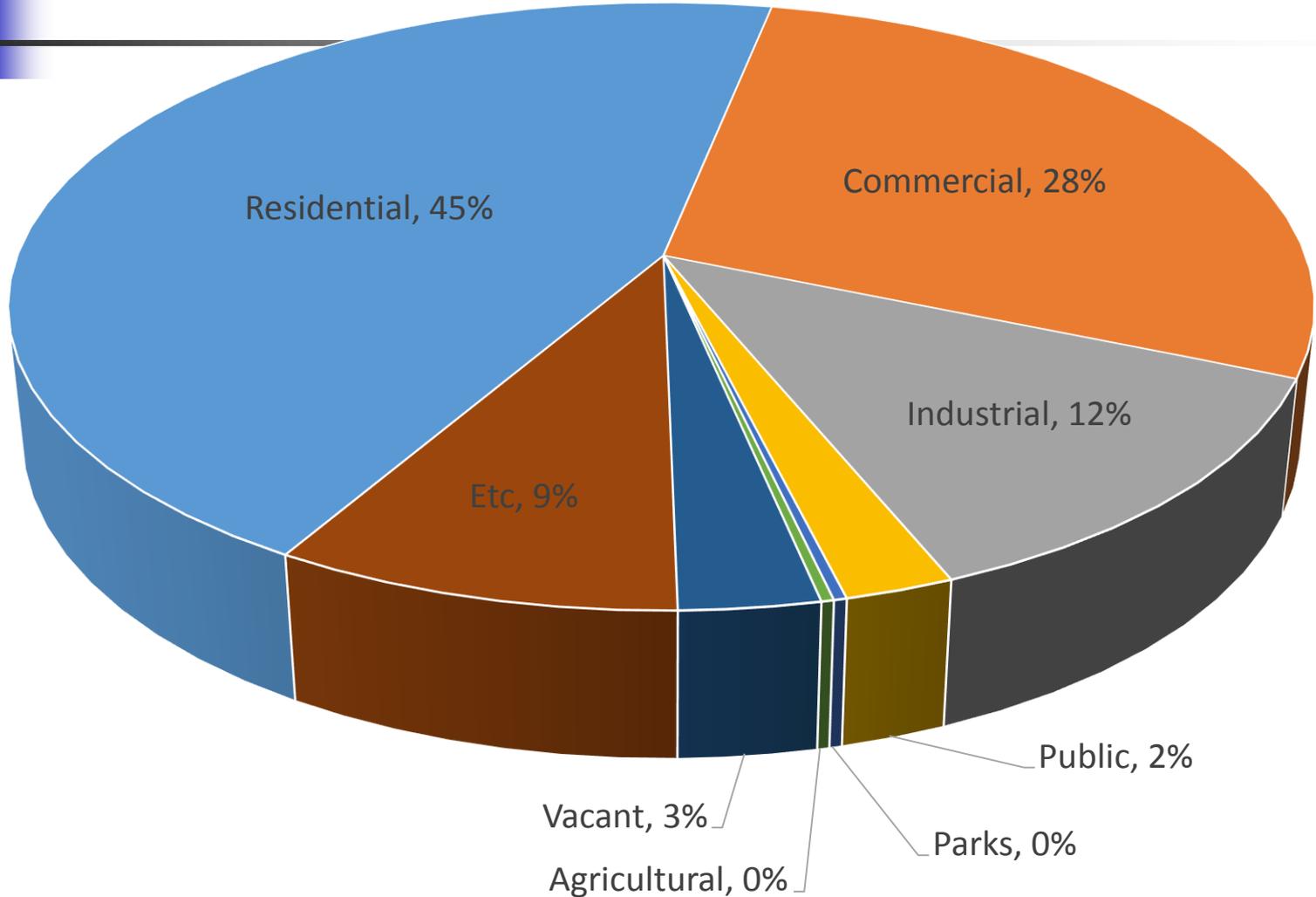
Descriptive Statistics of Firms : Sector (EMP)

	All EMP	MV EMP	All EMP %	MV EMP %
Agriculture	54,543	3,284	1%	1%
Construction	535,462	8,641	5%	4%
Manufacturing	1,157,627	64,231	12%	29%
Wholesale Trade	642,315	21,938	7%	10%
Retail	978,192	8,090	10%	4%
Trans&Util	341,820	11,050	4%	5%
Information	331,935	7,123	3%	3%
FIRE	795,532	22,617	8%	10%
Pro Biz Services	1,785,180	43,005	18%	19%
Education&Health	1,486,601	14,171	15%	6%
Leisure Hospitality	733,639	9,123	8%	4%
Other Services	529,217	8,811	5%	4%
Government	377,858	338	4%	0%
ETC	8,352	24	0%	0%
Sum	9,758,273	222,446	100%	100%

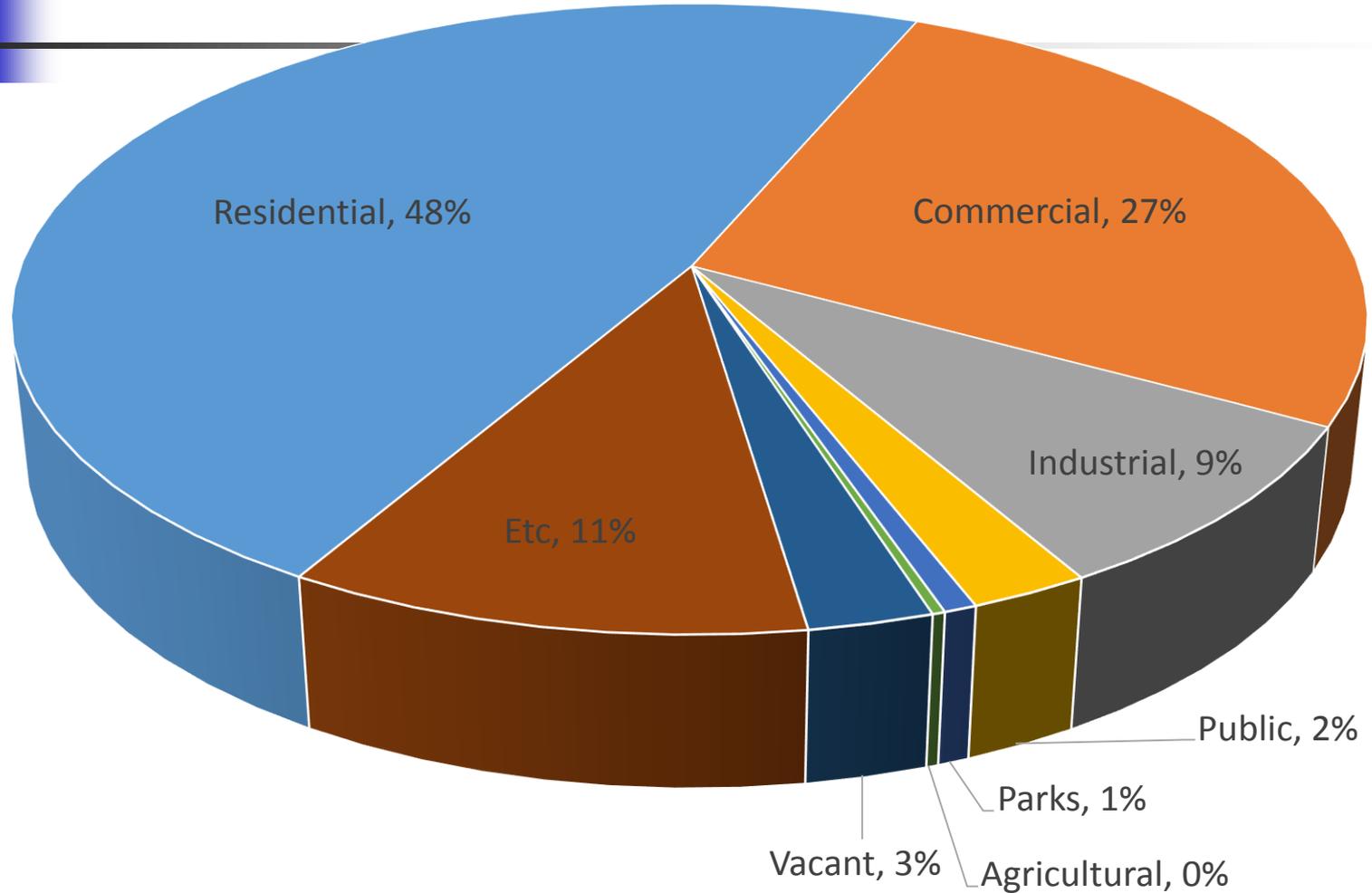
Firm Location By Land Use

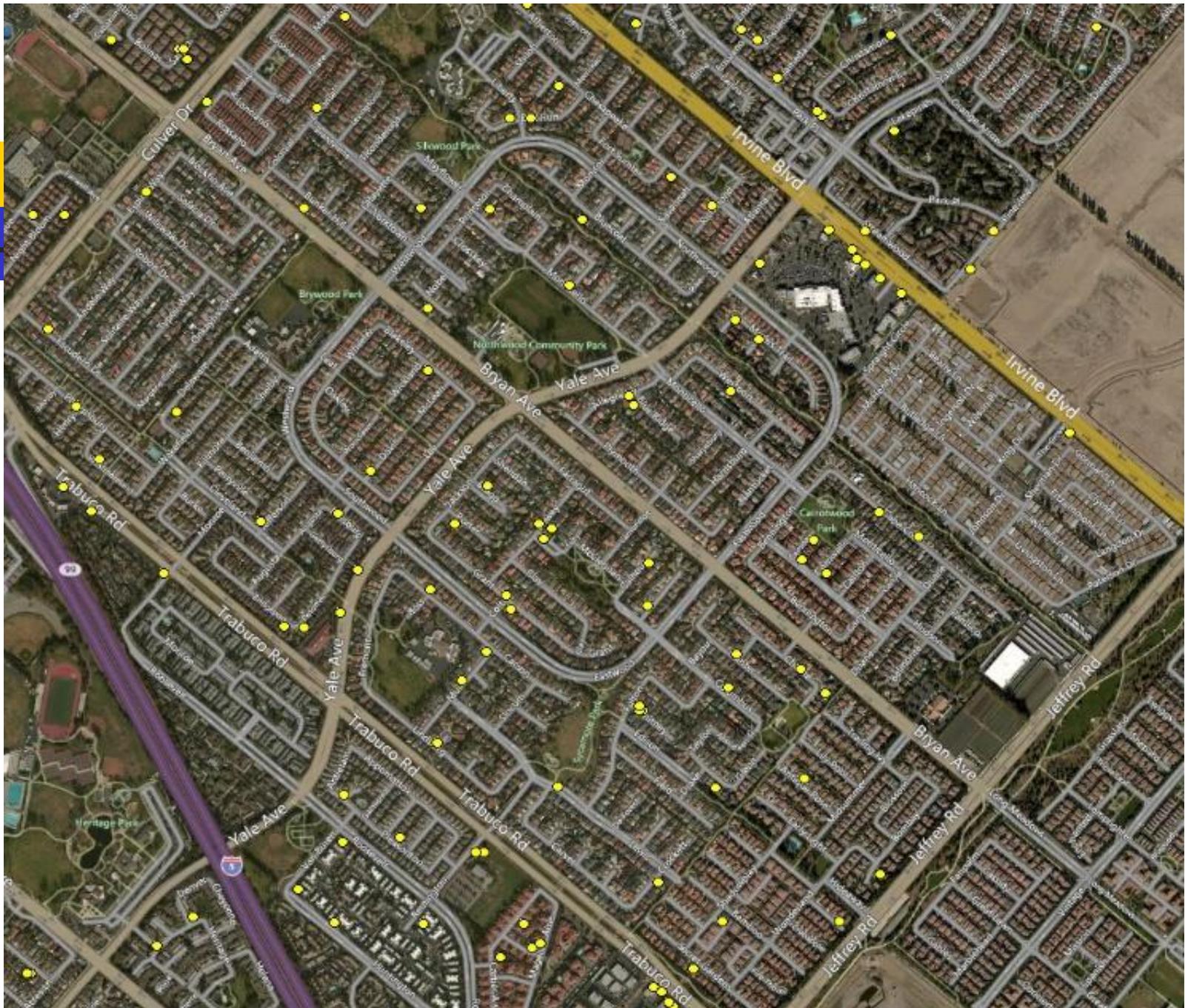


Moved Firm Location By Land Use

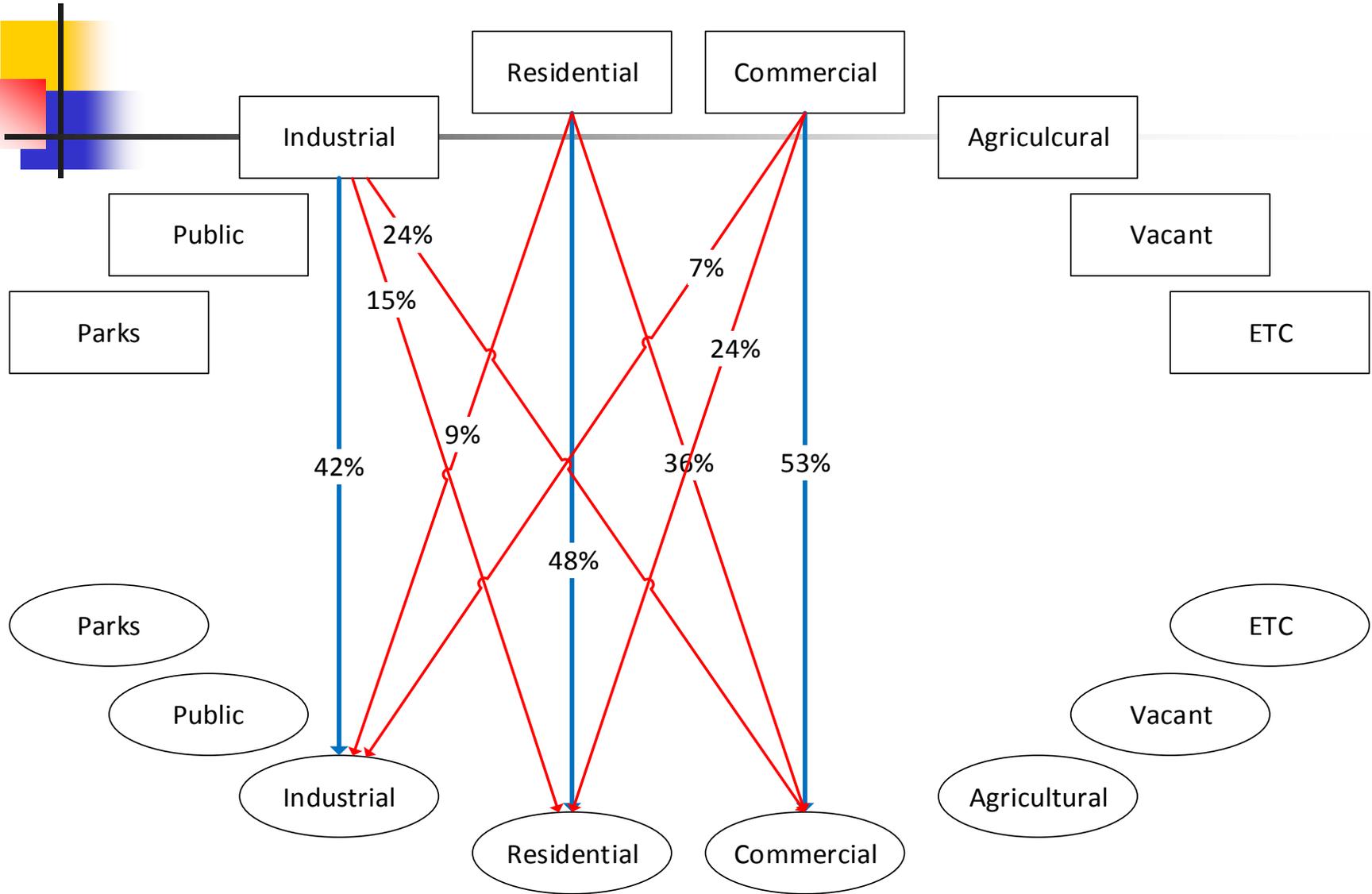


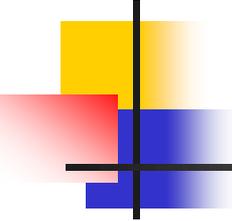
New Firm Location By Land Use





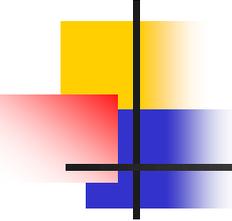
Firm Relocation by Land Use





Limitations

- Firm Location: mostly street based – assigned near parcel
- Accuracy of land use



Findings

- Manufacturing, Wholesale, and Professional Business service firms are more likely relocated compared to other sectors.
- There is a significant mismatch between Industry and Land use.
 - Results of analysis for all firms, moved firms, and new firms' location are similar
 - Zoning vs. Existing land use
- There are many firms located in residential area.