



Northwest Arkansas Real Estate Market Study

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Northwest Arkansas

#4 Best Affordable Places to Live

#6 Nation's Best Cities for Jobs

#22 Fastest Growing Region



- Population: **563,400**
- Unemployment: **2.7%** vs 3.9% US Average
- Job growth expected to increase **44%** over the next 10 years
- Cost of living score: **83.7** vs 100 US Average

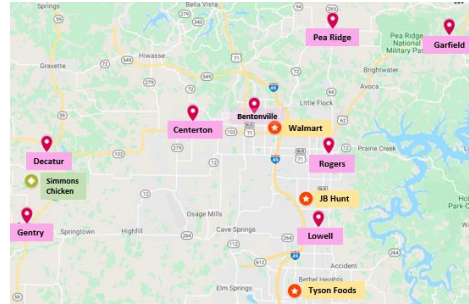
Fortune 500 companies based in NWA

- Walmart
- Tyson Foods
- JB Hunt Transport Services



Cities under Study*

- Bentonville
- Centerion
- Decatur
- Garfield
- Gentry
- Lowell
- Rogers
- Pea Ridge



*See Appendix A for details on city selection process

Why Northwest Arkansas?

This region has received national recognition for its high quality of life, low cost of living, reduced crime rates and economic vitality.

- 563400 – current population
- 2.7% Average annual unemployment rate compared to 3.9% nationwide
- Cost of living is cheaper than US average (83.7 compared to 100 National Average)

There are plenty of competitive career opportunities as Northwest Arkansas hosts 3 Fortune 500 headquarters (Walmart, Tyson Foods and JB Hunt Transport Services).

The eight cities marked in the map were selected for this real estate study since they presented a median house price increase of 20% over the last 10 years. They were also selected due to their proximity to the Fortune 500 headquarters.

Business Need

Identify the cities/zip codes in Northwest Arkansas that will bring the most ROI with the lowest risk to present to potential NWA investors.

Project Value

Make the best decision on investments in NWA based on accurate forecasts and environmental data.

Methodology

Use Zillow.com house median price monthly data from 2009-2019 to build a Time Series model.



Model Results

Lowell

- **43%** increase forecasted for the next 2 years
- Home of JB Hunt headquarters
- Within 10 mile distance from Walmart headquarters
- Growing suburb area

Decatur

- **25%** increase forecasted for the next 2 years
- 1500+ new jobs due to Simmons Foods 2020 Plant
- Not many houses available in the area
- Good potential for development projects

Pea Ridge

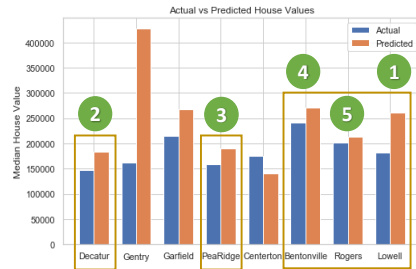
- **20%** increase forecasted for the next 2 years
- Within 10 mile distance from Walmart headquarters
- Growing suburb area

Bentonville

- **12%** increase forecasted for the next 2 years
- Home of Walmart Headquarters
- Growing urban area

Rogers

- **6%** increase forecasted for the next 2 years
- Within 10 miles from Walmart headquarters
- On going infrastructure investment
- Biggest growing urban area of the study



	City	% Increase	09/19 Value	09/21 Value	Size Rank
	Gentry	164%	\$ 161,900	\$ 426,995	9632
1	Lowell	43%	\$ 182,200	\$ 261,217	7806
2	Decatur	25%	\$ 146,900	\$ 183,971	13257
	Garfield	25%	\$ 215,000	\$ 268,129	11080
3	PeaRidge	20%	\$ 158,300	\$ 190,020	9606
4	Bentonville	12%	\$ 241,000	\$ 270,220	1844
5	Rogers	6%	\$ 200,950	\$ 213,458	1483
	Centerton	-20%	\$ 175,500	\$ 140,658	7525

*Further details on time series modeling and its performance for each city can be found in Appendix B

- Lowell is projected to have the biggest growth of all NWA cities. Its location is strategic, not only because it is the city of the study closest to the three Fortune 500 headquarters, but also because it is 10 miles away from Fayetteville (home of University of Arkansas). It is becoming a favorite area for families to buy a house.
- Decatur is projected to have a strong growth within the next 2 years due to the new Simmons Foods Plant opening in 2020. This new plant is going to bring more than 1500 jobs and there are very little housing options as of now. Great potential for housing development projects.
- Pea Ridge is a growing suburb area. It is becoming a favorite area for Walmart executives looking to buy a house as it is only 20 minutes driving from Walmart Headquarters.
- Bentonville is an all time favorite location for locals. The presence of Walmart Headquarters in town has brought all kinds of restaurants and amenities. Young professionals and people looking to live in a more city-like environment are the target for this city.
- Rogers is becoming a trendy urban area. The recent infrastructure investments from the local government have brought trendy restaurants and entertainment options to town. Rogers is also big on outdoor activities like mountain biking and lake entertainment. This is the biggest city of the study and it is projected to have a steady growth over the next 2 years.

Future Work

- Make a study of all zip codes and cities from Benton and Washington county
- Model Rogers zip codes separately (I merged the data for Rogers for this particular study)
- Explore subtracting the rolling mean instead of applying log transform to see if model performance increased

Thank You!

Appendix A

City selection process

For the sake of time and complexity of the study, cities for the study were selected according to below criteria:

- Cities from Benton & Washington county
- Top 8 cities with price increase over 20% over the last 10 years
- Proximity with Fortune 500 headquarters

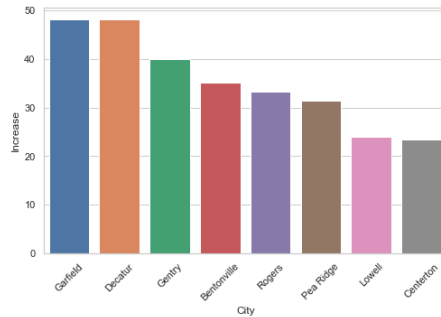


Fig. House price percentage increase 2009-2019

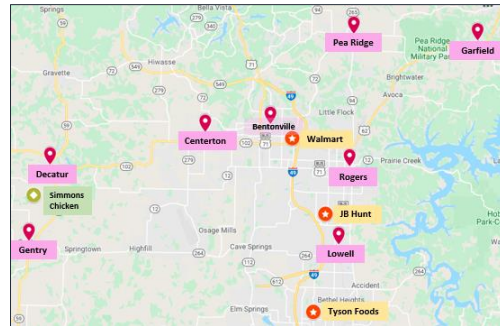


Fig. Map identifying cities under study and their proximity with Fortune 500 headquarters

Appendix B

Model performance comparison for ARIMA & SARIMA. In below chart, the model highlighted in orange was the one used for the forecasting for that particular city based on model performance and error.

City	ARIMA		SARIMA	
	AIC	RMSE	AIC	RMSE
Decatur	1783	3.20%	1026.97	12.35%
Gentry	1706.86	2%	975.7	23.02%
Garfield	1837.74	14.60%	1026.98	11.21%
PeaRidge	1631.15	3.00%	893.95	1.43%
Centerton	1592.23	0.67%	914.32	4.33%
Bentonville	-873.43	1.60%	-671.24	4.06%
Rogers	-963.97	1.96%	-668.72	1.08%
Lowell	-819.3	4.32%	-615.17	2.32%

Fig. Model Performance Comparison ARIMA vs SARIMA

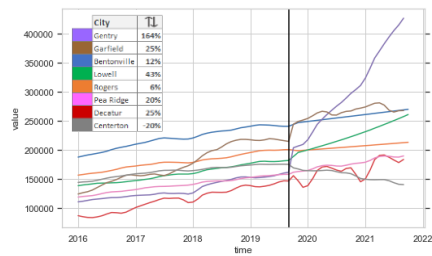


Fig. House Price Forecast