

▼ Interest Rates

Generally, the housing market slows down when interest rates are higher or increasing. When interest rates rise, the cost of owning a home becomes more expensive due to the higher interest payments, which reduces demand. This reduction in demand then results in a drop in home prices. Conversely, when interest rates are lowered, housing demand increases, causing prices to rise.

▼ Interest Rates recently for Iowa housing

From 2016 to 2022, mortgage interest rates were on a downward trend, making homeownership more affordable and stimulating the housing market. However, starting in 2022, there was a sharp spike in interest rates for 30-year mortgage loans, jumping from around 3% to 7%. This could help explain why rent costs were still pretty affordable through 2022, and would explain why they would of increased once it become to expensive to own a home from increased interest rates.

You might wonder why, despite this increase in interest rates, home values continued to rise during the same period. This scenario is especially concerning for Iowa’s first-time homebuyers. They faced the double burden of elevated home prices and higher interest rates compared to just two years prior, in 2024. This situation makes entering the housing market significantly more challenging and expensive, potentially delaying or even preventing many from achieving homeownership.

▼ Mortgage Costs in Context

The median home listed on Zillow in 2022 was sold for around 200,000 dollars. If you were to buy a typical house in early 2022, the interest rates for a 30-year loans would be around 3% assuming you have normal credit you would have a monthly mortgage cost of 843.21 dollars(bankrate loan calculator). Had you instead waited 2 more years to get that same house in late 2023 or early 2024 that same home would cost 220,000 dollars and the interest rate would of risen to 7.7% meaning that your monthly costs would be \$1,568.51 per month for the same house.

```
import pandas as pd
# monthly cost information in the form of a table
table = {
    "Year": ["2022", "2024"],
    "Median Home Price": ["$220,000", "$220,000"],
    "Interest Rate": ["3%", "7.7%"],
    "Monthly Cost": ["$843.21", "$1568.51"]
}
print(pd.DataFrame(table))
```

↔

	Year	Median Home Price	Interest Rate	Monthly Cost
0	2022	\$220,000	3%	\$843.21
1	2024	\$220,000	7.7%	\$1568.51

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from matplotlib.ticker import FuncFormatter

# Interest Data from Freddie Mac Website
df = pd.read_excel("/content/interest_rate_data.xlsx")

# fix week column for simple year label
df['Week'] = pd.to_datetime(df['Week'])
df['Year'] = df['Week'].dt.year
first_of_year = df.drop_duplicates(subset='Year', keep='first')

# Create the plot
sns.set(style="whitegrid")
plt.figure(figsize=(12, 6))
plot = sns.lineplot(data=df, x='Week', y='30 yr. Interest Rate', label='30 yr. Interest Rate')
sns.lineplot(data=df, x='Week', y='15 yr. Interest Rate', label='15 yr. Interest Rate', ax=plot)
plot.set_title("Mortgage Rates", fontsize=16)
plot.set_xlabel("Year", fontsize=14)
plot.set_ylabel("Interest Rate", fontsize=14)
xticks = first_of_year['Week']
xlabels = first_of_year['Year'].astype(str)
plt.xticks(xticks, labels=xlabels, rotation=45, fontsize=12)
plt.yticks(fontsize=12)
plt.grid(False)

# Format percent symbol and add source information
formatter = FuncFormatter(lambda x, _: f'{int(x)}%')
plot.yaxis.set_major_formatter(formatter)
plt.text(0.95, 0.01, 'Source: Freddie Mac Website',
        verticalalignment='bottom', horizontalalignment='right',
        transform=plt.gca().transAxes,
        color='gray', fontsize=8)

plt.show()
```

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