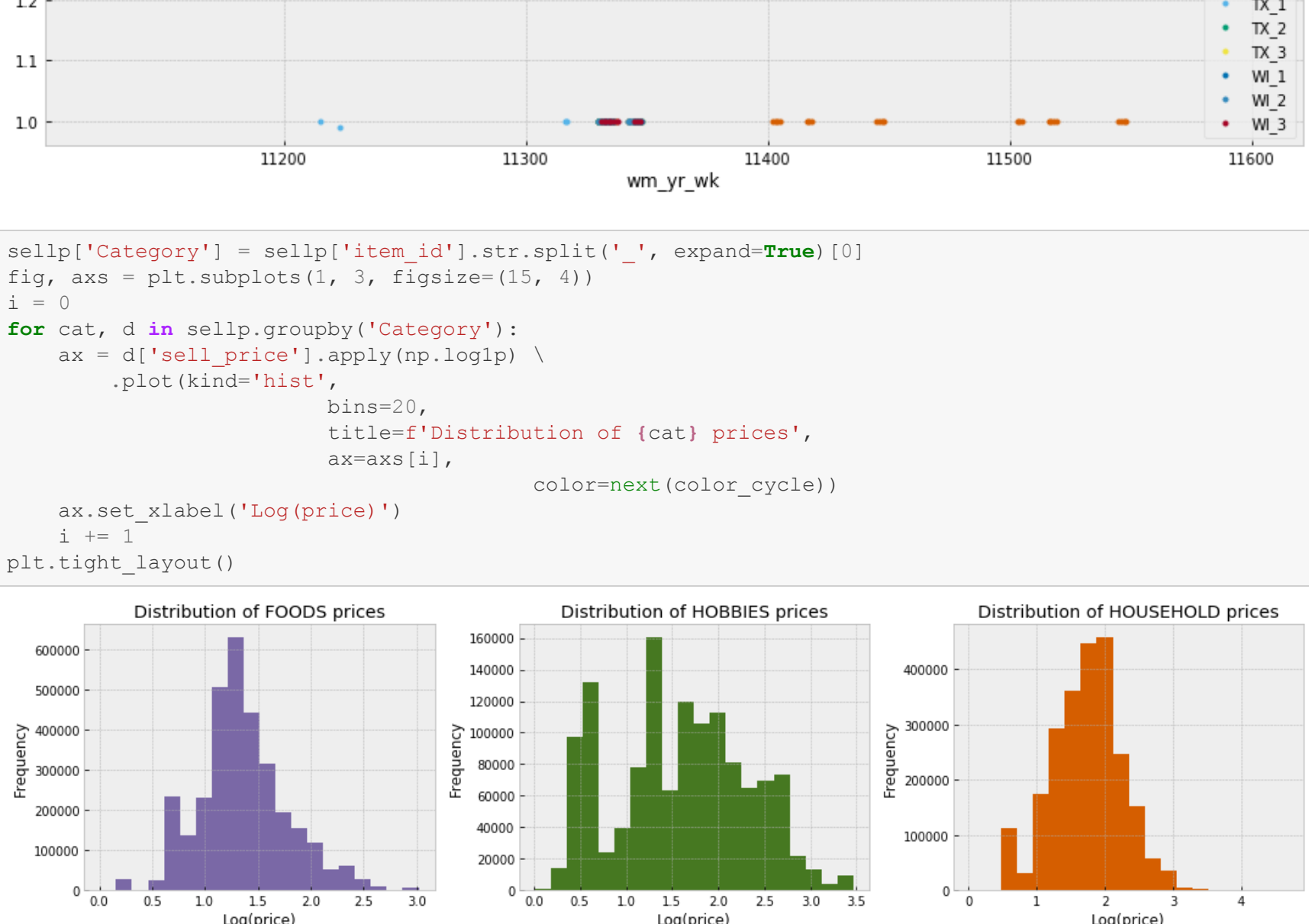



```
In [21]: fig, ax = plt.subplots(figsize=(15, 5))
stores = []
for store, d in sellp.query('item_id == "FOODS_3_090"').groupby('store_id'):
    d.plot(x='wm_yr_wk',
           y='sell_price',
           style='.',
           color=next(color_cycle),
           figsize=(15, 5),
           title='FOODS_3_090 sale price over time',
           ax=ax,
           legend=store)
stores.append(store)
plt.legend()
plt.legend(stores)
plt.show()
```



```
In [22]: sellp['Category'] = sellp['item_id'].str.split('_', expand=True)[0]
fig, axs = plt.subplots(1, 3, figsize=(15, 4))
i = 0
for cat, d in sellp.groupby('Category'):
    ax = d['sell_price'].apply(np.log1p) \
        .plot(kind='hist',
              bins=20,
              title=f'Distribution of {cat} prices',
              ax=axs[i],
              color=next(color_cycle))
    ax.set_xlabel('Log(price)')
    i += 1
plt.tight_layout()
```



A simple submission

- Submit the average value from the past 30 days

```
In [23]: thirty_day_avg_map = stv.set_index('id')[d_cols[-30:]].mean(axis=1).to_dict()
fools = [[f for f in ss.columns if 'P' in f]
for f in fools:
    ss[f] = ss['id'].map(thirty_day_avg_map).fillna(0)
ss.to_csv('submission.csv', index=False)
```

TODO

- Simple prediction based on historical average sale by day of week
- Facebook prophet model
- lgbm/xgb model based on day features