Based on your dataset of broker trades, which includes both the buyer/seller brokers and the active side, you could develop some interesting long/short stock trading strategies. Here are a few ideas with the corresponding logic:

**1. Broker Sentiment Analysis Strategy**

* **Idea**: Use the trading activity of specific brokers (e.g. institutional vs retail brokers) to gauge the sentiment on a stock and create long/short positions based on broker trades.
* **Logic**:
  + If institutional brokers are the active buyers (indicating demand from institutions), consider going long.
  + If they are active sellers, consider going short.
  + Retail brokers’ activity could be used as a contrary signal, i.e. if retail brokers are actively buying, it might signal a market peak, suggesting a short position.

**2. Volume Imbalance Strategy**

* **Idea**: Analyse buy and sell volumes between brokers. A large imbalance could indicate an impending price movement.
* **Logic**:
  + Track the net volume traded by the brokers. If buy volume consistently outweighs sell volume, consider taking a long position.
  + Conversely, if sell volume outweighs buy volume, a short position might be more appropriate.
  + You could also create thresholds based on historical data to filter out noise and only act on significant imbalances.

**3. Liquidity Provider vs. Demand Taker Strategy**

* **Idea**: Identify brokers acting as liquidity providers (passive side) vs. demand takers (active side) to infer price direction.
* **Logic**:
  + If a broker is consistently the active buyer, it indicates strong demand. If the stock price has a corresponding upward momentum, take a long position.
  + If a broker is repeatedly the active seller, it signals selling pressure. A corresponding downward momentum could justify a short position.
  + You could track broker behaviour over time to establish patterns, identifying brokers that consistently provide liquidity or take aggressive positions.

**4. Broker Cluster Momentum Strategy**

* **Idea**: Group brokers by behaviour or historical performance and follow their collective momentum.
* **Logic**:
  + Cluster brokers into categories such as “aggressive buyers,” “aggressive sellers,” or “neutral players” based on historical trade activity.
  + When a significant cluster of brokers shifts its trading behaviour (e.g. “aggressive sellers” becoming “aggressive buyers”), take a long position, anticipating price momentum.
  + Conversely, if “aggressive buyers” turn into “aggressive sellers,” it could signal a short opportunity.

**5. Volume Surge Detection**

* **Idea**: Use sudden spikes in trading activity by brokers as signals for volatility.
* **Logic**:
  + If a broker suddenly increases its trading volume, especially if it’s an institutional broker, this might signal insider knowledge or a significant upcoming event, prompting a long or short position based on whether they are buying or selling.
  + Sudden volume surges across multiple brokers could signal an imminent price breakout or breakdown, providing potential long or short entries.

**6. Relative Broker Strength**

* **Idea**: Measure the relative strength of brokers by comparing their net buying/selling activity against market trends.
* **Logic**:
  + Identify brokers that are consistently successful in predicting short-term price movements by evaluating their net buying and selling in past trades.
  + Track if these brokers are currently more active on the buy side (long signal) or sell side (short signal).
  + Use their relative strength as an indicator of market direction and follow their trades.

**7. Pair Trading on Broker Activity**

* **Idea**: Use pairs of stocks where there are significant divergences in the trading activity of brokers.
* **Logic**:
  + Identify pairs of stocks where one stock is seeing aggressive buying from brokers, while the other is seeing aggressive selling. Take a long position in the stock being aggressively bought and a short position in the stock being sold.
  + You can also apply this within a sector or industry, exploiting divergences between stocks that usually move together.

**8. Broker Position Changes**

* **Idea**: Track when brokers who were previously net sellers start buying, or vice versa.
* **Logic**:
  + If a historically selling broker suddenly turns into a buyer, it could indicate a change in their outlook on the stock, signalling a potential long trade.
  + Similarly, if a buying broker flips to selling, it could be an early warning of weakness, justifying a short position.

By using broker trades and the active side information, these strategies leverage both institutional behaviour and market structure to inform trading decisions. You could refine these strategies further with backtesting and statistical analysis using the historical data to enhance their profitability.

When focusing specifically on the active/passive side of trades, additional nuances can be incorporated into your strategies. Here are some ideas that take advantage of this information:

**9. Active/Passive Pressure Imbalance Strategy**

* **Idea**: Analyse the distribution of active vs passive trades to predict future price movements based on demand pressure.
* **Logic**:
  + If the active side consistently dominates the buy side, it indicates that traders are aggressively seeking liquidity, expecting the price to rise (go long).
  + Conversely, if the active side is mostly on the sell side, this reflects strong selling pressure, signalling a potential price decline (go short).
  + You can set thresholds for the proportion of active buying/selling to filter out noise and focus on significant imbalances.

**10. Passive Side Reversal Strategy**

* **Idea**: Use passive side accumulation or distribution as a leading indicator of potential reversals.
* **Logic**:
  + If a stock is being passively accumulated (i.e., more passive buying), it could indicate that smart money is quietly building positions without moving the price aggressively. This could be a long signal.
  + On the other hand, passive selling (i.e., more passive selling orders) may signal that institutions are slowly unloading their positions, indicating potential weakness and providing a short signal.
  + This approach works particularly well in trending markets where passive trades signal a reversal or a phase shift.

**11. Active/Passive Trade Time Decay**

* **Idea**: Use the timing of active and passive trades to spot overbought/oversold conditions.
* **Logic**:
  + If active trades (aggressive buying or selling) spike within a short period, it might suggest exhaustion of one side. A burst of active buying could lead to an overbought condition, while active selling may lead to oversold conditions.
  + After such bursts, prices often mean-revert, so you could take a contrarian position (short after active buying exhaustion, long after active selling exhaustion).
  + Use a sliding time window to track periods of intense active trading and look for moments when it drops off, signalling potential reversal points.

**12. Order Book Liquidity Drain**

* **Idea**: Use active side dominance to infer when liquidity is being drained from the order book, signalling upcoming volatility.
* **Logic**:
  + If the active side (buyers or sellers) continuously dominates over passive liquidity (the resting orders), this suggests a drain in liquidity and potential for price spikes or sharp corrections.
  + For example, a heavy active buy streak could suggest that sell-side liquidity is being eaten up, meaning the price could spike upwards. A long position would benefit from this liquidity drain.
  + If active selling dominates, the opposite would hold true—liquidity drain could lead to a price drop, signalling a short opportunity.

**13. Broker-Driven Active Momentum**

* **Idea**: Focus on specific brokers who tend to act aggressively on the active side and drive short-term price momentum.
* **Logic**:
  + Identify brokers who consistently act on the active side during significant price movements, especially those with large market influence (such as institutional brokers).
  + If an influential broker is consistently the active buyer, you could ride the momentum by going long.
  + If they are consistently the active seller, this could be a signal to take a short position.
  + Backtesting can help to identify these brokers’ patterns and determine which brokers’ active trades are reliable momentum indicators.

**14. Passive Side Support/Resistance Mapping**

* **Idea**: Use clusters of passive orders (buyers or sellers) to map potential support or resistance levels in the market.
* **Logic**:
  + Large passive buy orders could indicate support levels, as passive participants are willing to step in and accumulate shares at certain price points. A long strategy could target these levels with the expectation of a price bounce.
  + Conversely, large passive sell orders might indicate resistance, and these could be targeted for short trades, expecting a price pullback when the stock hits this level.
  + Monitor how these passive levels evolve over time, as they can serve as dynamic support/resistance zones.

**15. Volatility Breakout from Active Trade Clustering**

* **Idea**: When a high concentration of active trades (either buying or selling) occurs in a short time frame, it often precedes price breakouts or breakdowns.
* **Logic**:
  + Monitor periods where the number of active trades surges. This often indicates that traders are positioning ahead of a major price movement.
  + A cluster of active buy trades could be a precursor to a breakout to the upside, suggesting a long entry.
  + Similarly, a cluster of active sell trades often precedes a price drop, providing a short signal.
  + You can define thresholds based on historical data to avoid acting on insignificant trade clusters.

**16. Active/Passive Trade Asymmetry by Stock**

* **Idea**: Identify stocks that exhibit consistent asymmetry between active and passive trades.
* **Logic**:
  + Some stocks may show consistent behaviour where the active buying leads to price increases, while passive buying leads to stability or gradual upticks. Conversely, passive selling might lead to slow declines while active selling results in rapid drops.
  + By identifying such asymmetric patterns per stock, you could create specific rules: long when active buying increases, short when active selling accelerates.
  + These asymmetries may differ by stock, sector, or market condition, so backtesting to identify patterns will help refine the strategy.

**17. Contrarian Passive Entry**

* **Idea**: Use passive trading behaviour as a contrarian signal when it contradicts active trades.
* **Logic**:
  + If active traders are aggressively selling a stock, but there is significant passive buy interest (buy orders sitting in the book), this could be a signal that the stock is being sold off too quickly, and smart money might be accumulating. In this case, you might consider a long position.
  + Conversely, if active traders are aggressively buying but there are large passive sell orders in place, this might indicate the stock is overheated, prompting a short position.

**18. Market Maker Activity Detection**

* **Idea**: Use active vs passive side data to identify market maker behaviour and capitalise on their patterns.
* **Logic**:
  + Market makers often provide liquidity by being passive, especially when prices hit certain levels. They may actively step in to buy or sell if volatility increases or if the order book thins out.
  + If you detect consistent passive liquidity provisioning by a broker (possibly a market maker), you could trade within their support/resistance boundaries.
  + Watch for moments when market makers switch from passive to active positions, which could signal a liquidity squeeze or impending volatility.

These ideas can complement the initial strategies and offer deeper insights when combined with the active/passive data. By layering these approaches, you can create a robust framework for identifying long and short opportunities based on how brokers engage with liquidity in the market.