

APPENDIX: A DATA-CENTRIC APPROACH FOR FINANCIAL LARGE LANGUAGE MODELS WITH ABDUCTIVE AUGMENTATION REASONING

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A THE EXAMPLES OF AAR ON THREE FINANCIAL TASKS IN ENGLISH AND CHINESE.

From Figure 1 to Figure 6.

B THE EXAMPLE TO INSTANTIATE THE WORKFLOW OF FLLM IN CHINESE.

Figure 7.

C REAL FINANCIAL ANALYSIS AND INTERPRETATION EXAMPLES WITH DETAILED REASONS AND SCORES IN ENGLISH AND CHINESE.

From Figure 8 to Figure 15.

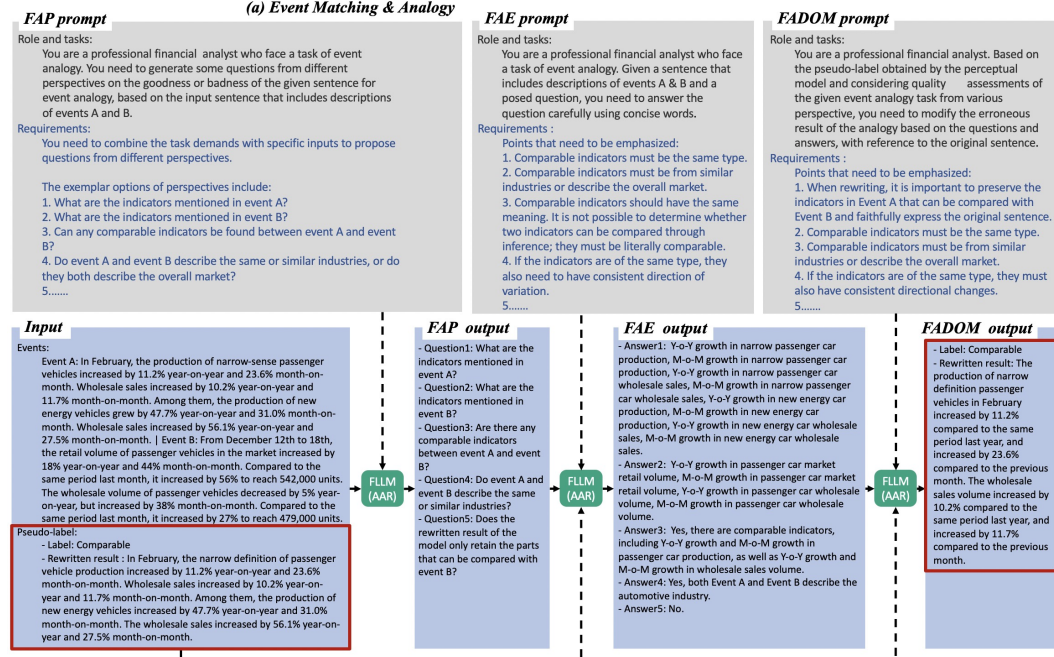


Figure 1: The example of AAR on event matching and analogy task.

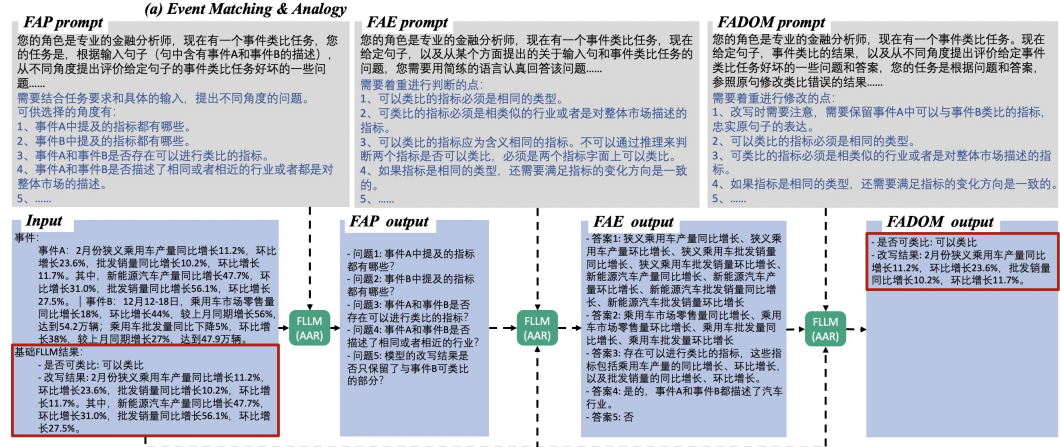


Figure 2: The example of AAR on event matching and analogy task.

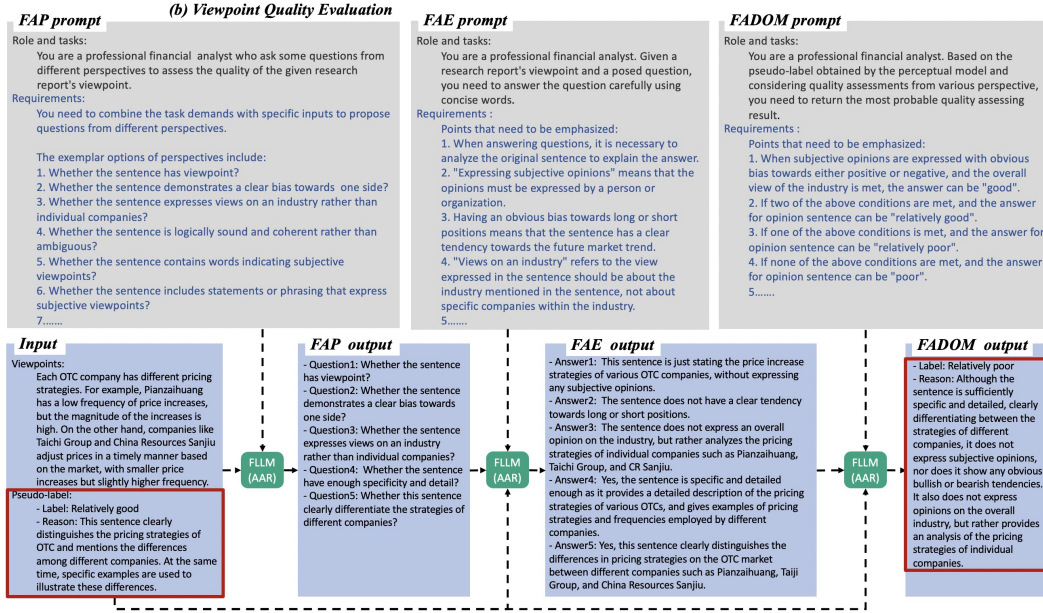


Figure 3: The example of AAR on viewpoint quality evaluation task. The examples of AAR on event matching and analogy and key point evaluation tasks are provided in the Appendix.

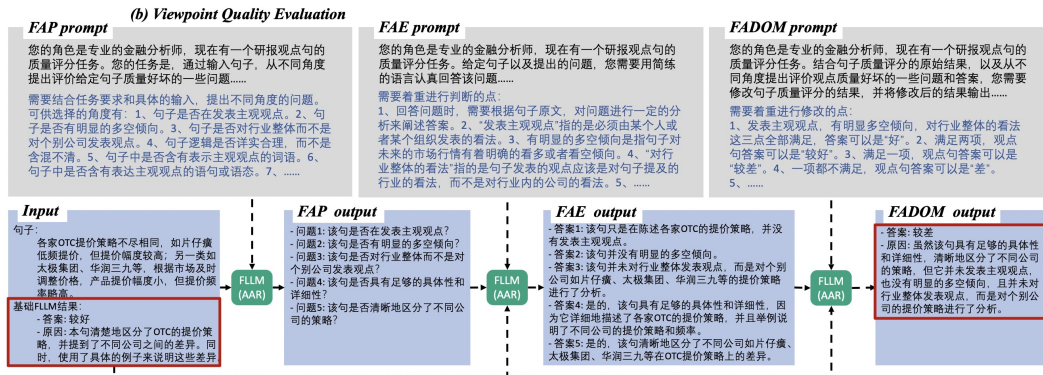


Figure 4: The example of AAR on viewpoint quality evaluation task.

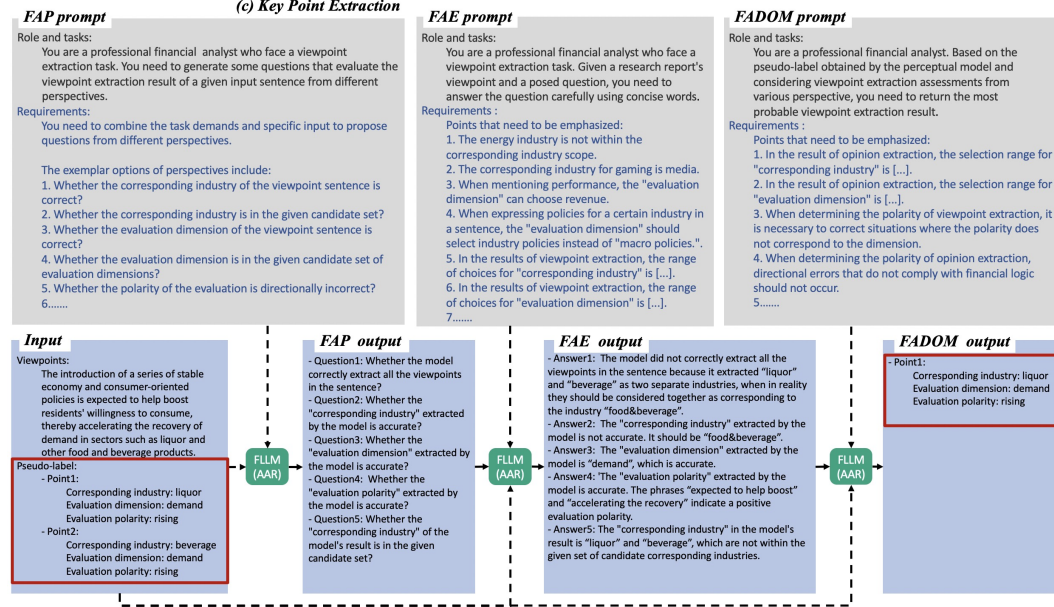


Figure 5: The example of AAR on key point evaluation task.

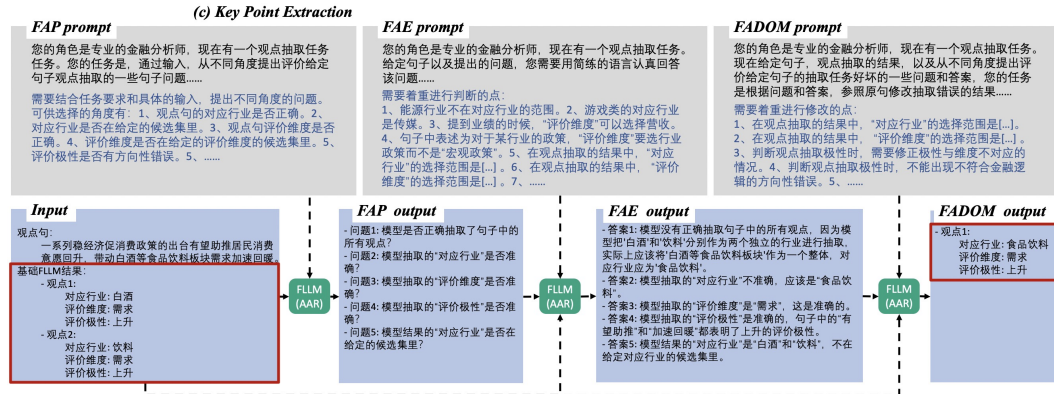


Figure 6: The example of AAR on key point evaluation task.

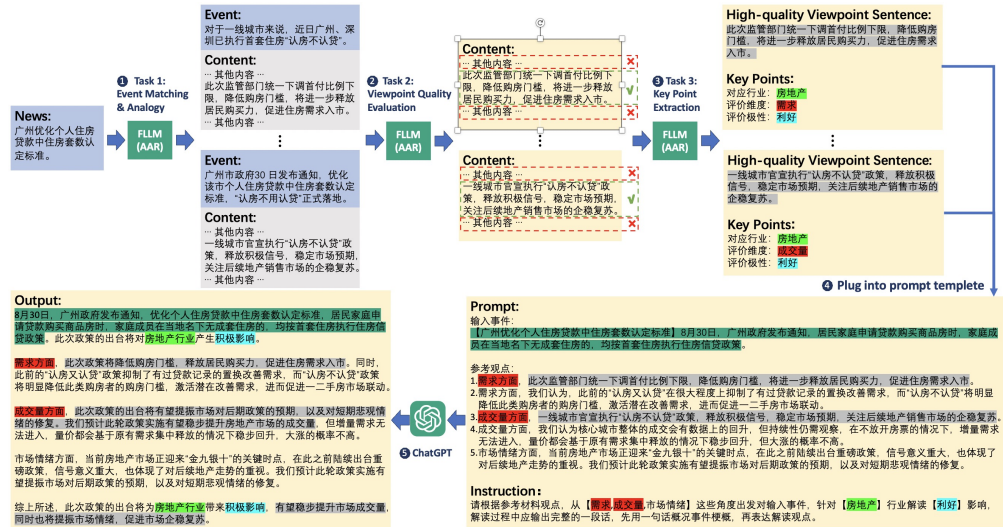


Figure 7: The example to instantiate the workflow of FLLM and the specific role of each subtask.

LangChain		
<p>The Guangzhou government issued a notice requiring households to apply for loans to purchase commercial housing. If the family members do not have a complete set of housing in the local name, the housing credit policy will be implemented as the first house. This policy aims to limit the demand for home purchases by families who already own homes, promote the stable development of the market, and improve the level of housing security.</p> <p>Guangzhou's optimization of the standards for determining the number of housing units used in personal housing loans has had a positive impact on the real estate industry. First, the policy will stimulate transaction activities among improvement-oriented home-buying groups and increase their ability and willingness to purchase new homes. Secondly, this policy will increase the enthusiasm of home buyers and promote an increase in market activity and transaction volume. Third, this policy is expected to promote the stabilization and recovery of the real estate market and increase the motivation for real estate investment and construction. Overall, this policy will have a positive impact on the stability and development of Guangzhou's real estate market.</p>		
Relevance	5	
Accuracy	5	
Logic	4	1. The parts marked in blue are redundant.
Expertise	3	1. The parts marked in red indicate problems with the financial logic of interpreting events. 2. The analysis of the incident lacked a professional framework.

Figure 8: Real financial analysis and interpretation examples with detailed reasons and scores.

FLLM w/ 1,2,3 (ours)		
<p>On August 30, the Guangzhou government issued a notice to optimize the standard for determining the number of housing units in personal housing loans. When a household applies for a loan to purchase a commercial house, and the family member does not have a complete house in the local name, the housing credit policy will be based on the first house. The introduction of this policy will have a positive impact on the real estate industry.</p> <p>On the demand side, this policy will lower the threshold for home purchase, release residents' purchasing power, and promote the entry of housing demand into the market. At the same time, the previous "recognize a house and subscribe for a loan" policy suppressed the demand for replacement and improvement of those with loan records, and the "recognize a house but not subscribe for a loan" policy will significantly lower the home purchase threshold for such buyers, activate potential improvement demand, and then promote The primary and secondary housing markets are linked.</p> <p>In terms of trading volume, the introduction of this policy is expected to boost market expectations for later policies and repair short-term pessimism. We predict that the implementation of this round of policies is expected to steadily increase the transaction volume of the real estate market, but incremental demand will not be able to enter. Volume and price will steadily rebound based on the concentrated release of original demand, and the probability of a sharp increase is not high.</p> <p>In terms of market sentiment, the current real estate market is ushering in the critical period of the "Golden Nine and Silver Ten". Prior to this, major policies have been introduced one after another. The signals are of great significance and also reflect the importance of the subsequent real estate trend. We expect that the implementation of this round of policies is expected to boost market expectations for later policies and repair short-term pessimism.</p> <p>To sum up, the introduction of this policy will have a positive impact on the real estate industry and is expected to steadily increase market transaction volume. It will also boost market sentiment and promote market stabilization and recovery.</p>		
Relevance	5	
Accuracy	5	
Logic	4	1. The parts marked in blue are redundant.
Expertise	5	

Figure 9: Real financial analysis and interpretation examples with detailed reasons and scores.

FLLM w/ 1		
<p>The Guangzhou government issued a notice to optimize the standards for determining the number of housing units in personal housing loans and implement the "recognize the house but not the loan" policy, which will have a positive impact on the real estate market. On the one hand, this move lowers the threshold for home purchase, activates the demand for replacement and improvement with loan records, and promotes the linkage between the primary and secondary housing markets. On the other hand, Guangzhou's policy implementation has also provided a reference for other first-tier cities. It is expected that other cities will follow up and implement similar policies, further boosting market expectations and confidence. Investors can focus on developers that have laid out core urban agglomerations and have high-quality land reserves, as well as companies that benefit from the transformation of urban villages in megacities. However, attention needs to be paid to the effects of real estate policy controls and the risks of recovery in commercial housing sales. Overall, Guangzhou's optimized personal housing loan policies are expected to stabilize market expectations and promote a stable recovery of the real estate market.</p>		
Relevance	4	1. The parts marked in green are invalid information (investment advice is not information related to event interpretation).
Accuracy	4	1. The parts marked in purple are references to negative risks, leading to inconsistent interpretations overall.
Logic	5	
Expertise	3	1. The logical level is not clear. 2. The analysis of the incident lacked a professional framework.

Figure 10: Real financial analysis and interpretation examples with detailed reasons and scores.

FLLM w/ 1,2

The Guangzhou government issued a notice to optimize the standards for determining the number of housing units in personal housing loans and implement the policy of "recognizing a house but not a loan", which will have a positive impact on the real estate market. First of all, the previous "subscribe for a house and subscribe for a loan" policy suppressed the demand for replacement and improvement of home buyers with previous loan records, while the new policy significantly lowered the threshold for home purchase, activated the potential demand for improvement, and thus promoted the linkage between the primary and secondary housing markets. **This will help boost market expectations for later policies, restore short-term pessimism, and further stabilize market expectations.** Secondly, the implementation of this policy comes at a critical period for the real estate market and is expected to further boost market confidence and make the market more positive in its expectations for subsequent policies. At the same time, this move also released a positive signal, stabilized market expectations, and is expected to promote the stabilization and recovery of the real estate sales market. To sum up, the Guangzhou government's measures to optimize the identification standards for housing units in personal housing loans will promote the activity of the real estate market, boost market confidence, further stimulate residents' purchasing power, and promote the entry of housing demand into the market. Investors can focus on related opportunities in the real estate market.

Relevance	4	1. The parts marked in green are invalid information (investment advice is not information related to event interpretation).
Accuracy	5	
Logic	3	1. The parts marked in blue are redundant.
Expertise	3	1. The logical level is not clear. 2. The analysis of the incident lacked a professional framework.

Figure 11: Real financial analysis and interpretation examples with detailed reasons and scores.

LangChain

广州政府发布通知，要求居民家庭申请贷款购买商品住房时，家庭成员在当地名下无成套住房的，均按首套住房执行住房信贷政策。**这一政策旨在限制已经拥有住房的家庭对购房市场的需求**，促进市场的平稳发展并提高住房保障水平。广州优化个人住房贷款中住房套数认定标准对房地产行业产生了积极影响。**首先，该政策将刺激改善型购房群体的交易活动，提高他们购买新房的能力和意愿。其次，该政策将提高购房者的购房积极性，促进市场活跃度和交易量的增加。第三，该政策有望推动房地产市场的企稳和回升，增加房地产投资和建设的动力。总体而言，该政策将对广州房地产市场的稳定和发展产生积极影响。**

相关性	5	
准确性	5	
逻辑性	4	1、标记蓝色的部分，表达较为冗余。
专业性	3	1、标记红色的部分，对事件的解读金融逻辑存在问题。 2、对事件的分析缺少专业框架。

Figure 12: Real financial analysis and interpretation examples with detailed reasons and scores.

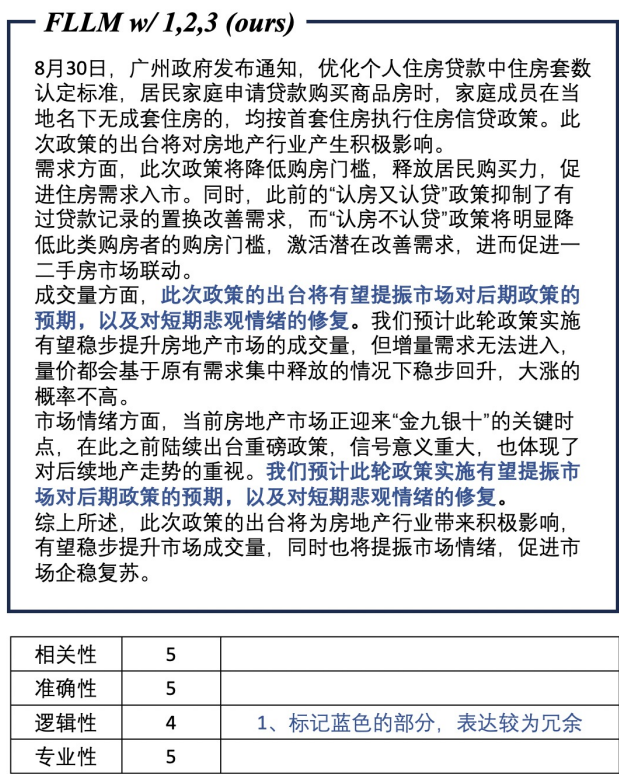


Figure 13: Real financial analysis and interpretation examples with detailed reasons and scores.

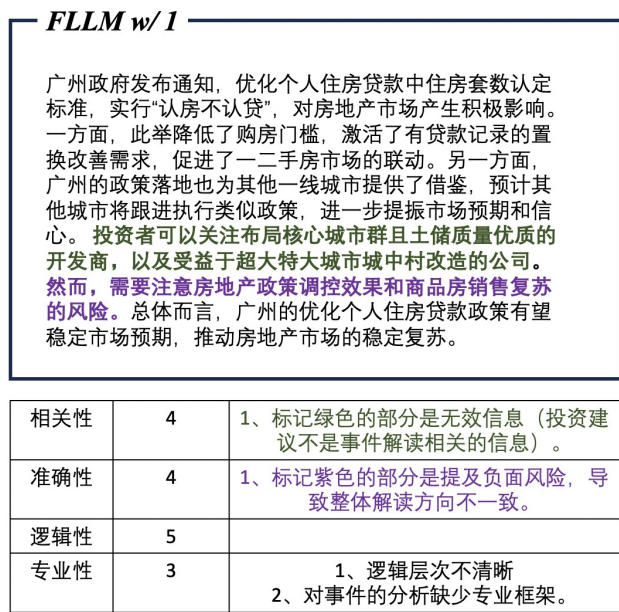


Figure 14: Real financial analysis and interpretation examples with detailed reasons and scores.

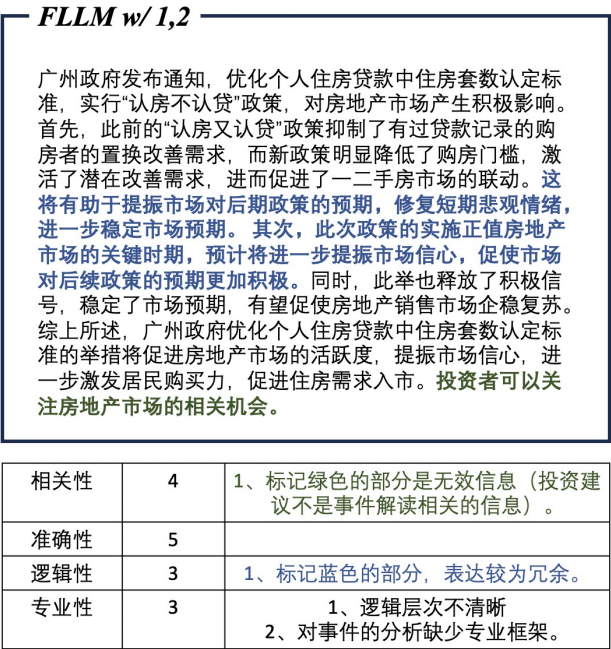


Figure 15: Real financial analysis and interpretation examples with detailed reasons and scores.