Winter School of Quant Assignment

Objective: Design and implement an alpha strategy using the fundamental dataset in WorldQuant BRAIN platform. (https://platform.worldquantbrain.com)

WorldQuant BRAIN Fundamental Dataset:

The dataset contains:

- Key financial ratios such as PE (Price-to-Earnings), ROE (Return on Equity), Debt-to-Equity, etc.
- Company-level fundamentals like revenue, earnings, cash flow, etc.
- Historical data for constructing and testing your alphas.

Resources:

- Relevant video tutorials:
  https://platform.worldquantbrain.com/learn/courses/fundamental-data
- Reference WorldQuant's Documentation:
  https://platform.worldquantbrain.com/learn/documentation/understanding-data/data

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Submission Requirements

Report Structure:

1. **Idea Generation:**
   - Clearly outline your alpha idea, including the rationale and the fundamental dataset signals leveraged.
2. **Alpha Formulation:**
   - Describe how your idea was translated into a quantifiable alpha.
   - Detail the mathematical formulation or logical reasoning behind the alpha design.
3. **Performance Improvement Methods:**
   - Highlight the approaches you used to enhance the performance of the alpha (e.g., parameter tuning, combining signals).
   - Summarize the outcomes of these efforts.
4. **Final Results:**
   - Include metrics such as:
     - Sharpe Ratio
     - Turnover
     - Maximum Drawdown
     - Cumulative Returns
   - Interpret the results and explain the strengths and weaknesses of the alpha.

5. **Potential Improvements:**
   - Suggest ways to further refine your alpha strategy.

Targets:

- **Sharpe Ratio:** Greater than 1.8
- **Turnover:** Less than 70%

Note: If these targets are not achieved, submit your alpha idea along with a discussion of the challenges faced. We will consider your solution if its valid but does not meet the above criteria.

Submission Guidelines:

- **Deadline:** January 2nd
- **Eligibility:** Only students seeking resume verification for Winter School of Quant must complete this assignment.
- **Deliverables:**
  - A detailed report as per the structure provided above.
  - Code or logic implemented for alpha design (if applicable).
  - Performance metrics in tabular and graphical form.

Good Luck!

We encourage you to explore different techniques and refine your strategy to achieve the best metrics. 🚀