

**Firdu Bati**  
**SYST 660**

**Homework: Airline Operating Costs and Airline Productivity**

1) For your assigned airline, determine whether the airline is considered a “Low Cost Carrier (LCC)” or a “Network Legacy carrier” (NLC). See Section 5.2.2 and Figure 5.6. Explain your choice

- JetBlue doesn't strictly follow the typical characteristics of LCC
- It offers advanced seat assignments to all passengers, on-board service, and a frequent-flyer program
- Even though JetBlue doesn't strictly follow those characteristics, it is considered LCC
- It operates only two fleet types, (Airbus 320 and Embraer 190)
- It mainly operates from its home base, JFK Airport in New York
- It has no employee unionization

2) Provide 1-2 sentence definitions (with equations if possible) for each of the following terms

**RPMs** - a measure of airline traffic. It is number of passengers in a flight times distance flown by each flight.

**ASMs** - a measure of airline output. It is the sum of number of seats in a flight time distance flown by each flight

**RASM** – a measure of unit revenue for each ASM. It is determined by dividing various operating revenue by ASM

**CASM** – a measure of unit cost. It is the ratio of the airline's total operating expenses to ASM produced.

**Yield** - a measure of the average fare paid by all passengers per mile flown. It is equal to Revenue/RPM

**PRASM** – is passenger or scheduled ticket revenue per ASM.

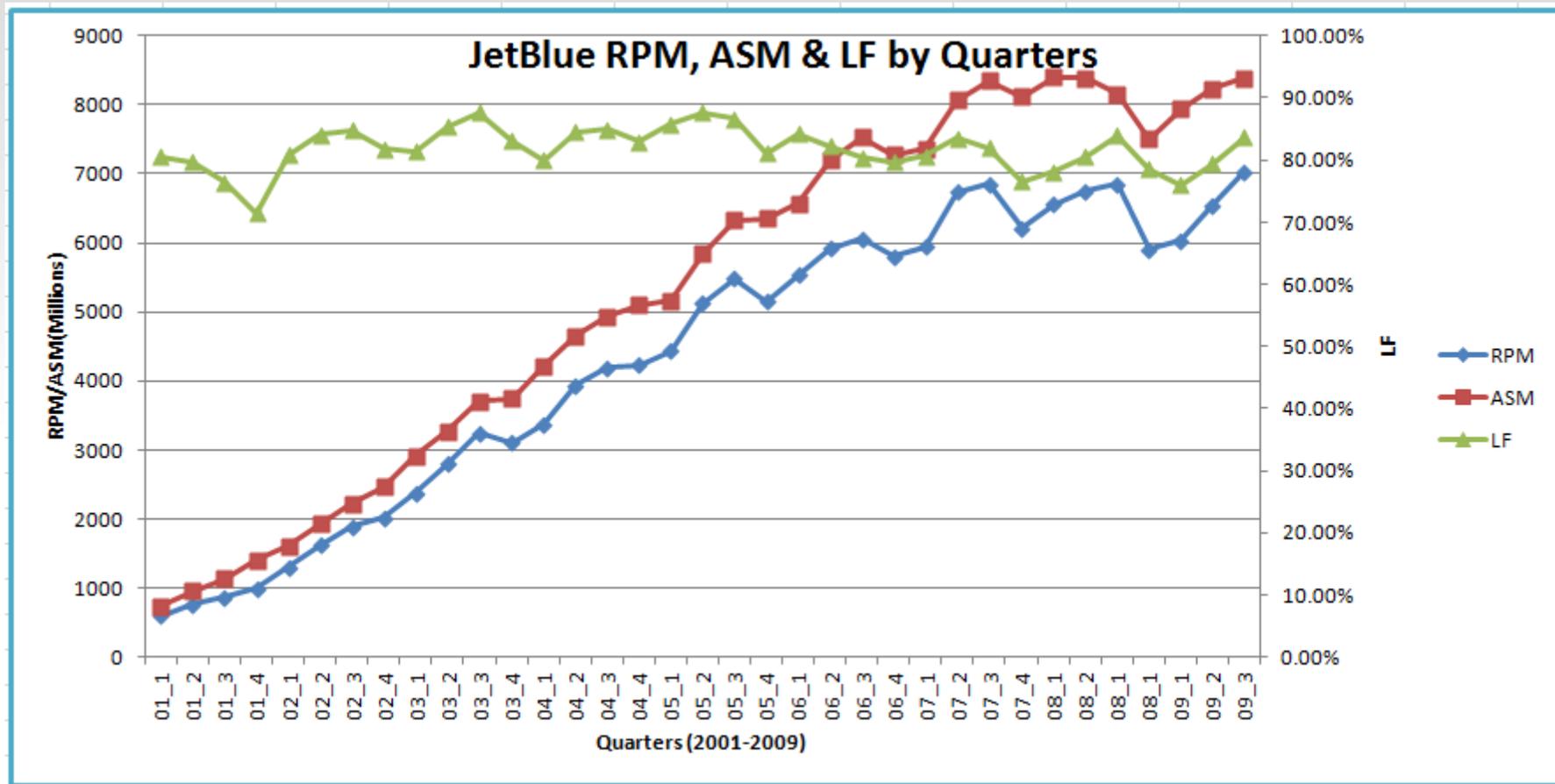
**Fuel Consumed** - fuel consumed by airline for operation of its fleets

**Fuel Costs per ASM** - the ratio of the total fuel operating cost to ASM

**Non-Fuel Costs per ASM** – the ratio of the sum of all operational costs excluding fuel to ASM

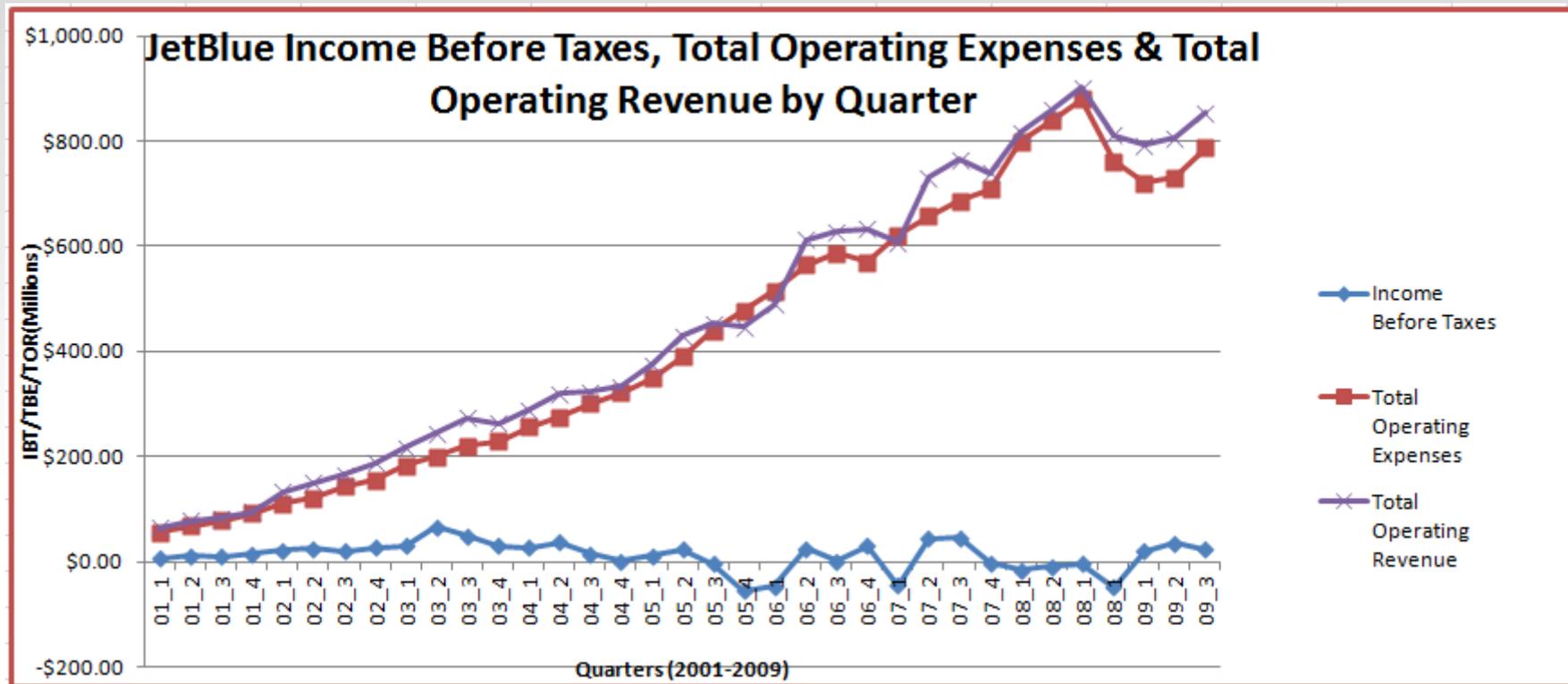
### 3) Airline Analysis (JetBlue airline)

**A. Chart 1:** Plot ASMs and RPMs by quarter on primary y-axis, and Load Factor on secondary y-axis. Summarize trends and transient behavior. Provide explanations where possible.



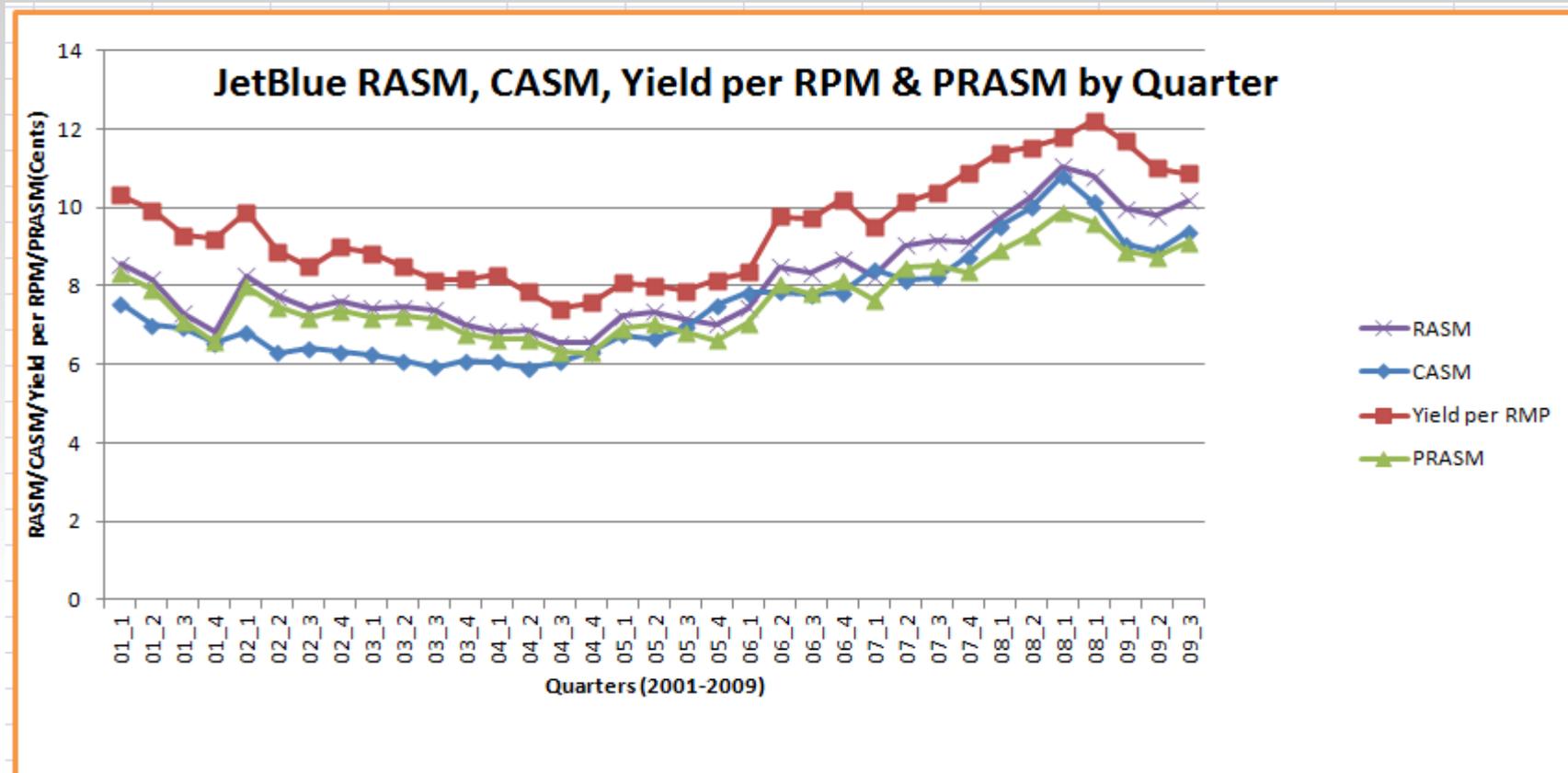
- RSM and ASM followed the same pattern and have been constantly rising
- There is minor decline of RSM and ASM in the year 2008
- LF stayed relatively constant at around 80% for the last nine years

**B. Chart 2:** Plot Income Before Taxes, Total Operating Expenses and Total Operating Revenue. Summarize trends and transient behavior. Provide explanations where possible



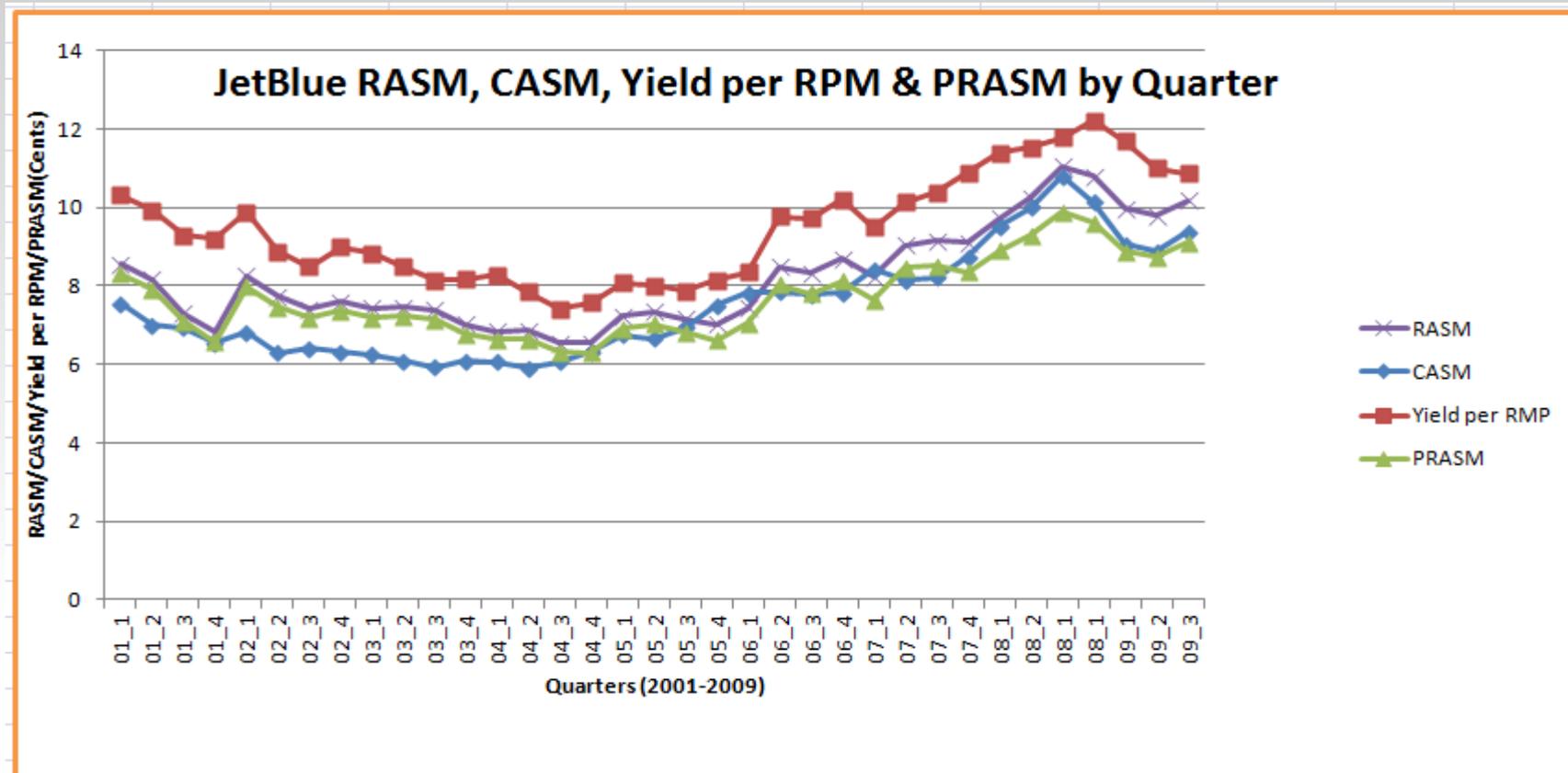
- Operating Revenue mirrors the operating costs, the revenue being mostly higher with few exceptions in the year 2005 and 2007
- The income before taxes stayed relatively the same except for few years, (2005, 2007, and 2008)
- Those years where the income is negative can be explained by the difference between the expense and revenue graphs

**C. Chart 3:** Plot RASM, CASM, Yield per RPM, and PRASM on primary y-axis. Summarize trends and transient behavior. Provide explanations where possible.



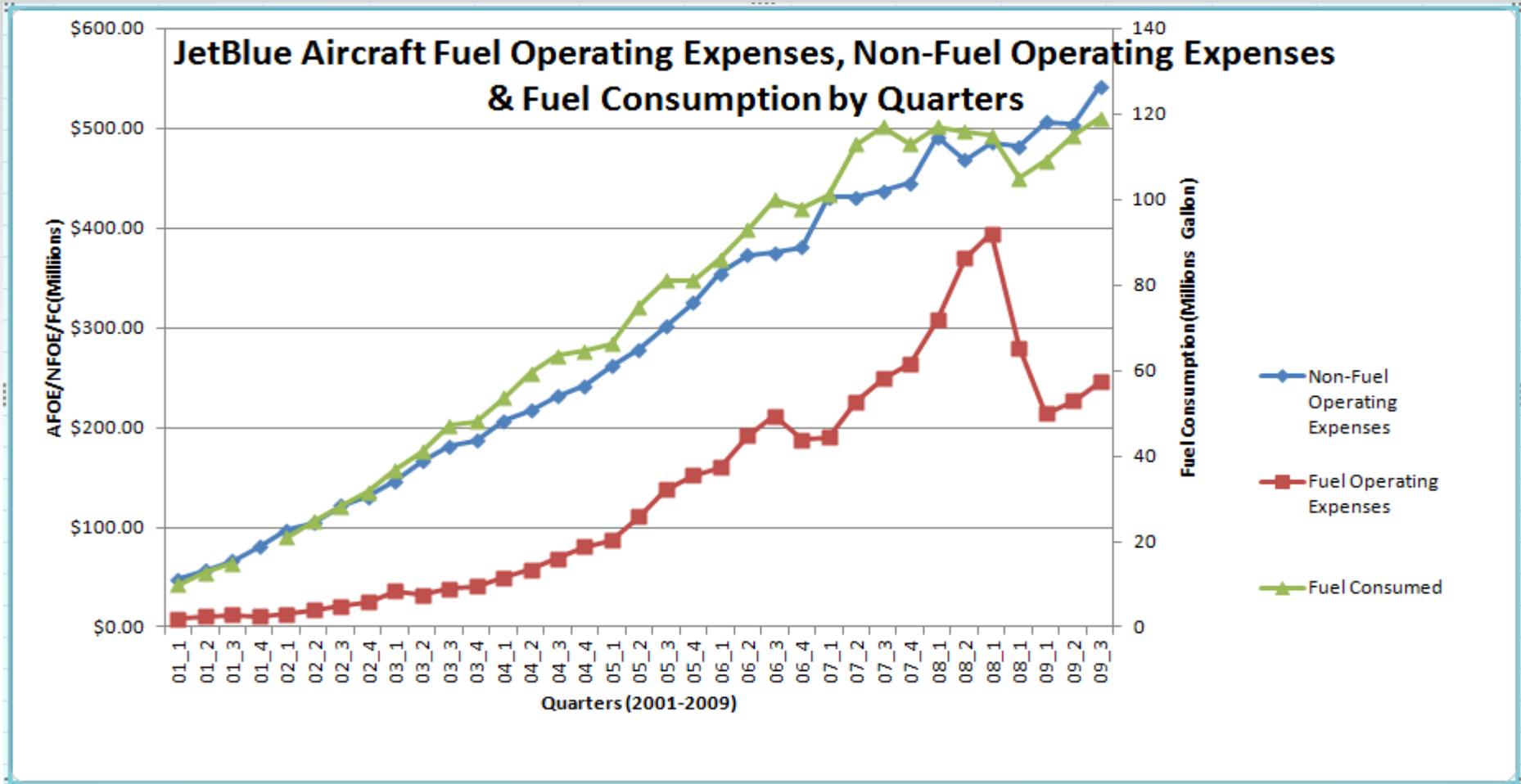
- The RASM and the PRASM graphs are extremely similar and can be explained by the fact that they both are factors of revenue and ASM.
- Since 2007, cost has been higher than revenue with the difference declining in recent years
- Regardless of the amount, yield per RPM has been consistently higher than both costs and revenues for entire time between 2001 and 2009
- One interesting observation is , when all these parameters are compared with the graph for all LCC, JetBlue's shares are anywhere between 40 to 50 percent, quite a high proportion

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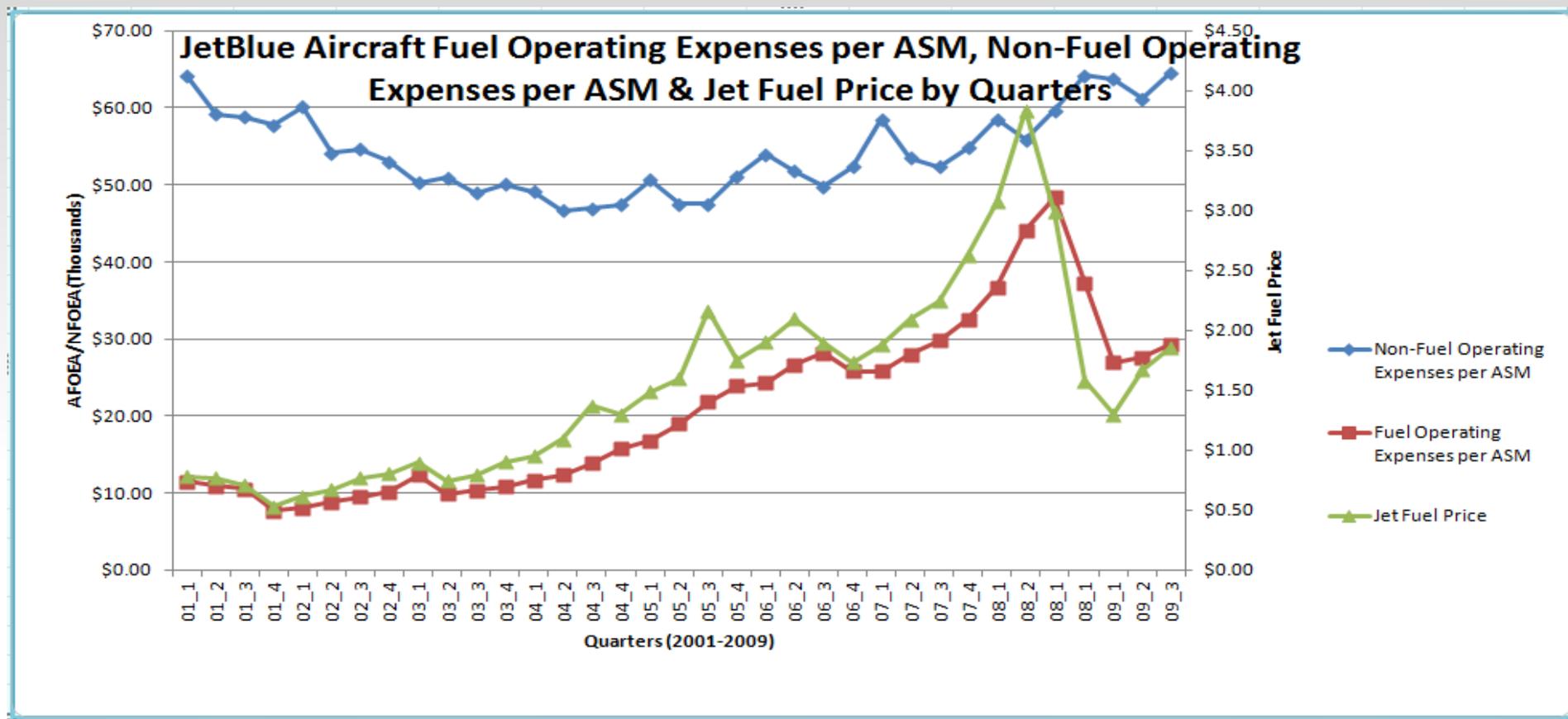
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**D. Chart 4:** Calculate and Plot Aircraft Fuel Operating Expenses and Non-Fuel Operating Expense. Provide explanations where possible.



- Clearly fuel price surged between the beginning of year 2007 and middle of 2008
- For relatively the same amount of consumption, fuel operating cost was significantly higher during this period
- In general, fuel operating cost follows the same pattern as other non-fuel costs, they both have been consistently increasing.

**E. Chart 5:** Calculate and Plot Aircraft Fuel Operating Expenses per ASM and Non-Fuel Operating Expenses per ASM on the primary y-axis, and Jet Fuel Price on the secondary y-axis. Summarize trends and transient behavior. Provide explanations where possible.



- Compared to the graph above, the variation of non-fuel operating expense per ASM has been minimal. This can be explained by the fact that JetBlue's ASM has been increasing continuously from year to year with the expense, and hence the ratio remains relatively similar
- However, fuel operating expense per ASM has not followed the same pattern. This is due to the fact that the fuel price increase in recent years has been far more higher than the ASM

#### 4. With reference to Charts 1 through 5, describe the effect of Fuel Prices on:

- a. **Expenses (Chart 5, 4, 3) :** Fuel price has had a significant effect on overall JetBlue's operating cost. Between early 2007 and mid of 2008, fuel expense as a proportion of overall operating expenses ranged from 50% to 80%. Even during the years when fuel price was steady, the fuel operating expense is a large factor to the overall JetBlue's operating expenses.
- b. **Airline Finance (Chart 2) :** Fuel price has had a modest effect on overall income of JetBlue's operation in general. Almost all the periods when fuel price has increased appreciably are accompanied by a decrease in income, and in some cases the effect were significant to force the airline to operate in negative territory,
- c. **Airline Network Structure (Chart 1):** Comparatively, fuel price has had minimal effect on RPM, ASM and Load Factor. For the most part, RPM and ASM have increased through the years and Load factor changed very slightly in spite of fuel price. However, during the time when fuel price was significantly high, (2007 and 2008), RPM and ASM stagnated.