

Assignment 4 Part 2

(a) The symmetry of these two distributions:

- P or F: this is symmetrical because the mean, mode and median are relatively close to one another.

- I or D: This is also symmetrical because the mean, median and mode are also relatively close to one another.

(b) For Personal or family responsibility distribution I would use the mean as an appropriate summary of the centre because this data does not contain outliers. Since, mean is the average of the sum of all the numbers it is the best predictor of the centre.

(c) $Q3 - Q1 = IQR$

$$Q3 - Q1 = 1.9$$

$$Q1 = 8 - (1.9/2) = 8 - 0.95$$

$$\mathbf{Q1 = 7.05}$$

$$Q3 = Q1 + 1.9 = 7.05 + 1.9$$

$$\mathbf{Q3 = 8.95}$$

(d) Upper Fence: $Q3 + 1.5(Q3 - Q1)$

$$= 8.8 + 1.5(8.8 - 6.9)$$

$$= 8.8 + 1.5(1.9)$$

$$= 8.8 + 2.85$$

$$= \mathbf{11.65}$$

Lower Fence: $Q1 - 1.5(Q3 - Q1)$

$$= 6.9 - 1.5(8.8 - 6.9)$$

$$= 6.9 - 1.5(1.9)$$

$$= 6.9 - 2.85$$

$$= 4.05$$

(f)a. The mean will change because it is a measure of the average of the set of data. Therefore if the data values increase 20% then the mean will increase by 20% as well.

b. Variance will not change. This is because the variance measures variability and therefore will not change with a 20% increase.

c. Coefficient of variation will not change because it involves dividing by the mean within its equation ($COV = SD / \text{Mean}$) therefore if the mean increases by 20% it will decrease the value of the coefficient of variation.

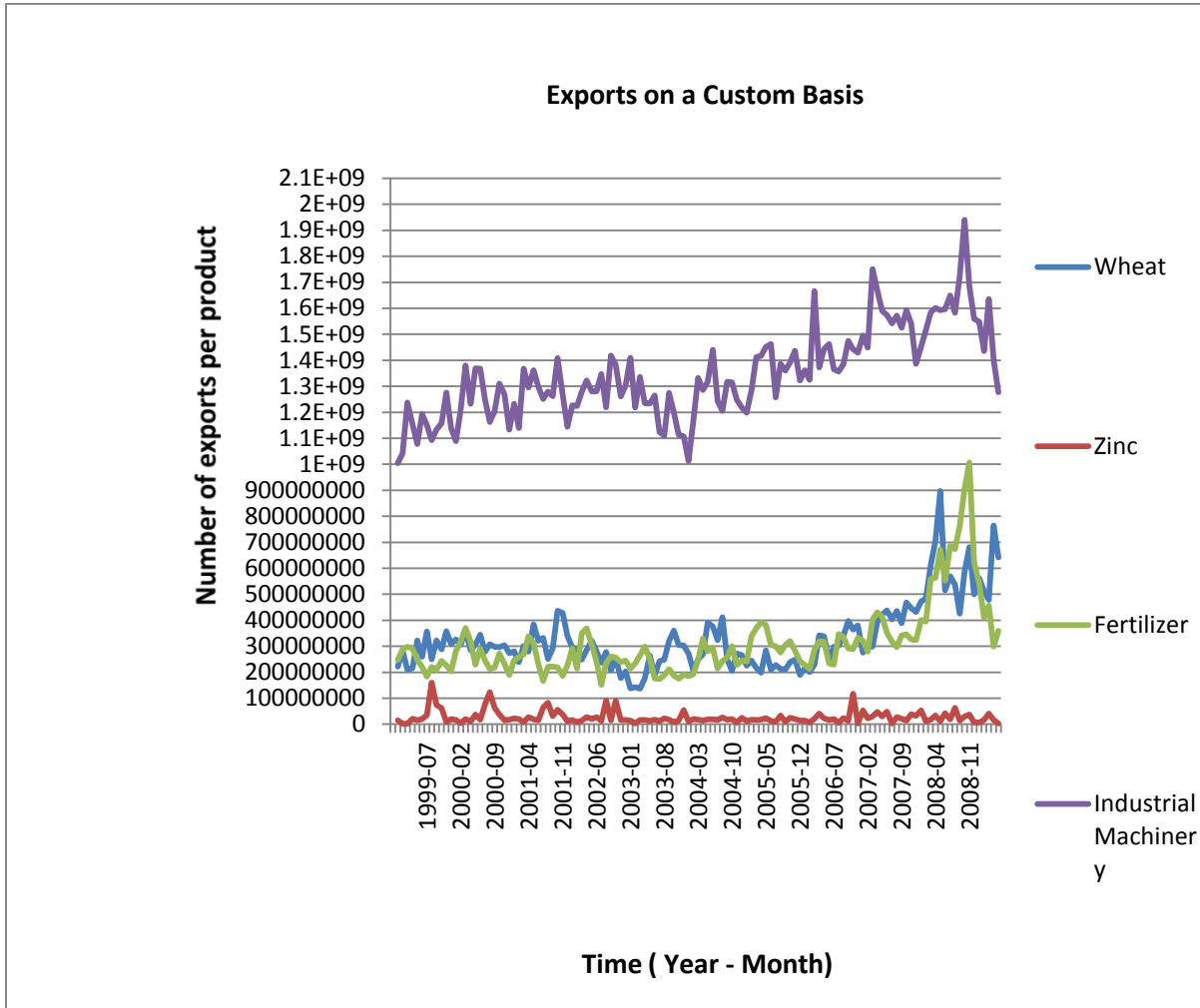
d. Interquartile range because it represents the difference between Q3 and Q1 therefore since they increase by the same amount the distance between Q3 and Q1 should be the same and therefore Interquartile range will not change.

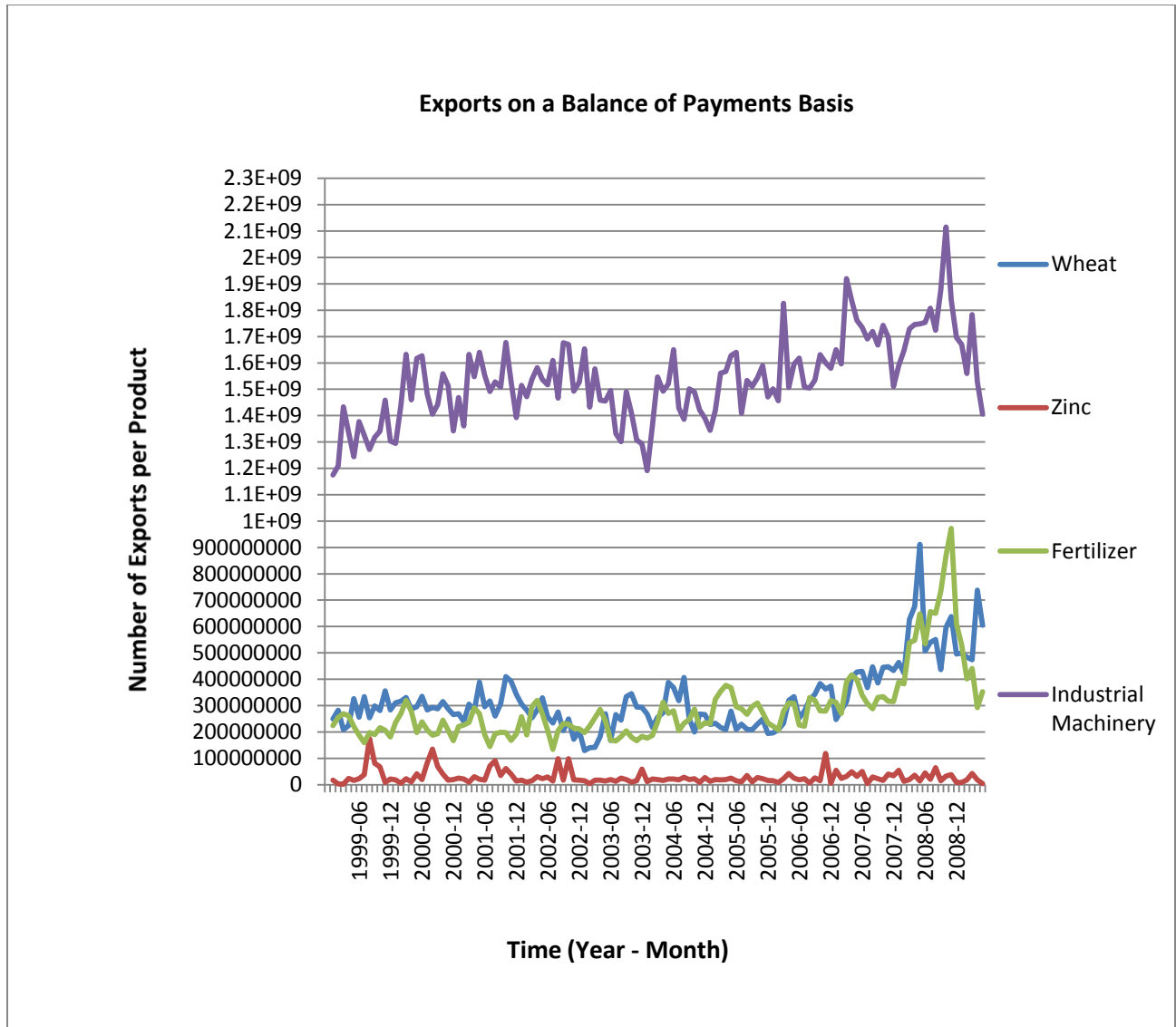
Question 2

PLAN (Identify Variables)

The variables in this scenario are the number of exports which include wheat, zinc, fertilizer, and industrial machinery, and are analyzed as they change over time.

DO (Graphs and explanation)





CONCLUSION

- (a) If one observes the peaks of the Fertilizer (green) and Industrial Machinery (purple) closely; in comparison to the Balance of Payments basis the custom basis is higher. This ultimately indicates that custom base has a larger range (more exports) than the balance of payment for the relative periods of time.
- (b) The custom basis of calculation would be the most appropriate for foreign exchange earnings, because it shows the more exports (therefore more earnings) this will look better in the economics scale when Canada must show its GDP (gross domestic product).
On planning capacity the balance of payment method would be the best, this is because it has more accurate calculations; it takes into consideration all exports of ownership including economic transactions between residents and non-residents.
- (c) In the year 2008, between months April and November there is a dramatic increase in export for wheat, fertilizer, and industrial machinery. This was before the recession when markets were at

an all time high, therefore countries could afford to export more and make more money because most economies were doing well.