INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI®

Bell & Howell Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600

BILATERAL EXCHANGE RATES AND THE PERFORMANCE OF THE TOURISM INDUSTRY: EVIDENCE FOR CANADA

Aminata Kanta

A Thesis
In
The Faculty
of
Commerce and Administration

Presented in Partial Fulfilment of the Requirements
for the Degree of Master of Science in Administration at
Concordia University
Montreal, Quebec, Canada

October 1998

Abstract

Bilateral Exchange Rates and the Performance of the Tourism Industry: Evidence for Canada

Aminata Kanta

This thesis is devoted to test the widely held hypothesis that a depreciation of the home currency is beneficial to a country tourism account. Using the aggregate tourism account as well as the accounts between Canada and three of its most important partners in international travel, we examine the sensitivity of the cash outflows and inflows to bilateral exchange rates changes. The exchange rate exposure is modeled using both a regression framework as well as a causality test. The results suggest that at the aggregate level the cash outflows tend to be Granger caused by the Yen and the Pound while there is some form of correlation between the receipt series and the Yen.

We extend this research by examining the impacts of the fluctuations of the Canadian dollar vis a vis the US dollar on the stock returns of tourism related firms. Evidence is presented that the firms in the sample do not benefit from a depreciation of the Canadian dollar. We also find that the risk coefficient appears to change over time and the predictive power of the model is not sensitive to the exchange variables used but do change with the market proxy.

Acknowledgements

I would like to thank my supervisor Dr L. N. Switzer for his guidance and helpful comments. Un merci special à mes parents qui m'ont toujours encouragée a poursuivre mes études.

Finally, a very special thought for my husband and our kids who fully shared my everyday student life.

Table of Contents

A mon mari Cheick Oumar
Avec toute ma gratitude

Introduction

The tourism industry represents an important sector of the Canadian economy. According to Statistics Canada it has generated over $10,194 millions in receipts in 1994 which represented 4.8% of the country GNP and ranked fifth in terms of persons employed. But the last 10 years has been marked by successive international travel account deficits not only at the aggregate level but also with most of the countries with which Canada has a travel balance. The tourism output is perishable and its demand and industry cash flows should be very elastic *vis a vis* several factors. Hence, identifying the key factors affecting the cash flows of the industry is an important issue.

There are several reasons to expect exchange rates to be one of the factors to influence tourism destination choices as well as the related expenditures, especially for international tourism, from financial theory. If the exchange rate is more volatile than the inflation and interest rates (Jorion 1990), it is clear that exchange rate risk can be important. It is commonly held that a depreciation of the local currency makes the country attractive to foreigners and has a positive effect on the international tourism account of that country. Interestingly, the Canadian tourism account deficit coincides with a large depreciation of the Canadian dollar. Therefore, it is worth investigating the nature of the relationship between tourism industry and the fluctuations of the dollar.

Previous work examining the relationship between exchange rates and the tourism industry has primarily focused on the tourists flows; and the few studies that examined the cash flows examined only cash inflows (Loeb, 1982; Gibbons and Fish, 1985; Chadee and Mieczkowski, 1987; Qiu and Zhang, 1995), and have ignored cash outflows. There is no consensus from these studies: the slope of the exchange rate variable is either insignificant or only slightly positive.

This study provides new evidence on the following issues: (1) how do exchange rate changes affect the aggregate Canadian tourism cash inflows as well as outflows? In the analysis, we also examine the currency exposure of the travel account with the most important partners in tourism of the country. (2) How are individual firms affected by changes in the exchange rate? In particular, what is the currency exposure of tourism related companies in Canada. We also address the issue of contemporaneous and lagged relationship between unexpected exchange rate fluctuations and stock returns.

The thesis is organized as follows. Section I provides an overview of the literature on the relationship between the exchange rate changes and the tourism industry. Section II describes the data, while section III outlines the methodology used. In section IV the empirical results are presented. A summary and concluding remarks are provided in section V.

The foreign exchange risk: definitions

The international finance literature traditionally classifies foreign exchange risk into three categories: 1) Transaction exposure; 2) translation exposure and 3) economic exposure. Transaction exposure is a cash flow exposure. It stems from the sensitivity of contractual cash flows to unexpected changes in the exchange rate; it is the incurred gain or loss on domestic currency value of foreign denominated assets or liabilities (Shapiro, 1994).

Translation exposure results from converting the financial statement of foreign operations from the local currency into the home currency, when the currency value has changed since the last reporting period.

Economic exposure incorporates the transaction exposure and the operating exposure. The economic exposure is the impact of exchange rates on the current and future profitability of a firm. First, firm specific characteristics are helpful in determining currency exposure. The exposure can derive from the sector or the environment in which a firm operates and the sources of its inputs. Firms with assets and revenues denominated in foreign currency or the ones with their production costs in local currency would tend to benefit from a depreciation of the local currency. By the same token, import oriented firms would more likely be hurt by a depreciating currency. Besides being firm determined, currency exposure might also be industry specific.

The way the currency sensitivity is measured would depend on how the exposure is defined. Economic exposure is superior to the first two in that the exposure is defined in terms of market rather than book values. Under the hypothesis of efficient markets, the stock price of any firm should reflect the impact of exchange rate changes on the firm in all the ways they may affect it. That is why most of the research in the field uses a stock measure of the value of the firm.

In this study, we examine the impact of currency changes on a single industry: first, the way they affect the cash flows streams is assessed; and later how they alter the value of the firms in this particular industry.

I. Literature review

1. Overview of Tourism Forecasting Studies

Sheldon and Var(1985) provide a summary of econometric causal models used in early studies. They note that such studies were limited by the existence of a strong multicollinearity among the variables. Causal models were shown to provide the best forecasts for expenditures while time series models tend to be superior for tourist arrival forecasts. One interesting point that stems from many of these studies is the uniqueness of each tourist data series; what might work for one destination, might not work with another one.

Geurts and Ibrahim (1975) compare the forecasting accuracy of the Box-Jenkins Approach and the Exponentially Smoothed Forecasting Model applied to Hawaii tourists. They use monthly numbers of tourists visiting Hawaii for the period 1952-1971 to build the models and a subsequent twenty four month period is used to make a one month ahead forecasts. The forecast error is computed for both techniques. They found that the two models perform equally well.

Martin and Witt (1989) test the forecasting accuracy of six econometric models applied to tourist flows in several countries. The relative performance of each model is assessed with the mean absolute percentage error as well with the root mean square percentage error. The random walk naive model (the no change model) outperformed all the other techniques for all the countries except

the US. The econometric models had the highest error terms. Witt (1990) finds that estimates of future income, travel costs and costs of tourism value are good predictors of the demand for inward international tourism to Hong Kong.

Athiyaman and Robertson (1992) use 7 methods to forecast Thailand tourist flows to Hong Kong. Data for the period 1986 to 1989 are used to make either a one month or a twelve month forecast while the 1990 actual tourists flows are used to check the accuracy of each forecasting method. They find that the single exponential smoothing method yields the best one-month forecast with the lowest mean absolute percentage error. For the twelve month forecasts, the Holt two parameter linear exponential smoothing and Brown's one parameter linear exponential smoothing are very close in accuracy and provide the best forecast. On the other hand, Chan (1993) makes use of a sine wave time series regression model to forecast tourist arrivals in Singapore. His basic assumption is that tourist data has a lot of seasonality and a cyclic trend which is easily modeled by a sine function in time. In such a case, recent data points would tend to reflect more the trend than less recent ones.

His model explains almost 98% of the variation in the seasonally adjusted tourist arrivals. It outperforms the naive model, the proportional change model, a simple regression time series model and the ARIMA (2,1,2).

Sheldon(1993) is the first study to examine the accuracy of different methods in forecasting tourism expenditures as opposed to the flow of tourists. She found that international tourist arrivals series do not fluctuate in the same way as the expenditures series. She concludes that different variables do affect the two series. Therefore the use of different forecasting methods is motivated. The author tests several models to predict annual tourist flows and expenditures in the US from six originating countries: Canada, Japan, UK, West Germany, France and Italy for the period 1970-1986. The mean absolute error is computed for each methodology and for each country. The author finds that the no change model and the Brown's exponential smoothing were best indicated for the forecasting of tourist flows. The log linear model was superior in forecasting expenditures.

In a more recent paper, Kulendran(1997) test the effectiveness of many of these forecasting models in predicting the quarterly tourist flows into Australia. He finds that in forecasting tourism, error correction models perform poorly compared to times series models.

2. Tourism Cash flows and exchange rates

Most of the research in this area has been concerned with the sensitivity of the industry cash-flows to currency changes. There seems to be some consensus that a weakening of the local currency should be favorable to a country's tourism industry; however, the statistical significance of the relationship remains a matter of dispute.

Loeb(1982) investigated the impact of several variables on the US tourism cash inflows from seven importing countries. The variables include the per capita income, the exchange rates and the relative prices. The log linear model is fitted and the expenditure levels are expressed in constant dollars.
First, the real per capita expenditures made by travelers from each country in the US are estimated and used as the dependent variable. The model explains up to 98% of the variations of the dependent variable. The exchange rate variable has the expected positive sign in most of the countries but is found to be insignificant in Canada. Second, the sensitivity of the aggregate US travel services receipts to the same independent variables is assessed. The exchange rate variable is significant for only two of the seven countries, while the real income of the originating country has the expected positive effect significant in all of the countries.

Gibbons and Fish (1985) examine the effects of the Peso devaluation on the US tourism expenditures in Mexico as well as the impact of price changes for the period 1970-1982. They found that the Peso devaluation led to an increase of the US tourism expenditures in Mexico in both nominal and real terms. They also found that border expenditures are more important than interior expenditures and more sensitive to exchange rates changes.

Chadee and Mieczkowski (1987) investigate the effects of exchange rates changes on the Canadian tourism for the period 1976 to 1985. Using quarterly data, the number of US visitors to Canada and their expenditures are regressed on various explanatory variables. They include the real exchange rate between Canada and the US, the total disposable income in the US, the travel price index, the size of the US population as well as seasonal dummies. They find that the exchange rate coefficient is statistically significant with the expected positive sign for the tourist flow variable, which is consistent with the hypothesis that a depreciation of the Canadian dollar increases the number of US visitors in Canada.

Surprisingly, the US visitors' expenditures in Canada are not sensitive to changes in exchange rates. The authors also found an important seasonality in tourism demand series and an inverse relationship between the level of disposable income and the US demand for Canadian travel services.

Qiu and Zhang(1995) examine the determinants of the Canadian tourism demand (defined as the numbers of visitors entering in Canada) as well as their expenditures from the major originating countries of tourists to Canada(US, UK, France, the former West Germany and Japan) for the period 1975 to 1990. They estimated both the linear and log linear forms using a much larger number of independent variables. The exchange rate variable is insignificant in the tourism demand equation except for France where it is significant at the 10% level while it is significant in the expenditure equation in all countries except Japan.

3. Stock performance and currency exposure

The impact of exchange rates on the value of firms had been widely documented. Jorion (1990) focuses on the currency exposure of US multinationals. Using a trade-weighted exchange rate, he finds that the sample firms undergo some form of exchange rate exposure. He also finds a significant cross sectional difference in the exposure: for firms with international activities, the exposure is positively related to the degree of foreign involvement, while it is stable across domestic firms.

Jorion (1991) classified NYSE stocks into twenty value-weighted portfolios to analyze the impact of exchange rate changes on US industries. He finds that the exchange rate coefficient is significant but the sign of the exposure is different across the industries.

Export oriented industries like "chemical" or "Machinery" gain from a depreciation of the US dollar, while import oriented industries like "Textile and Apparel" or "Department Stores" suffer from it. The author also finds that exchange rate risk is not priced by investors.

Luehrman (1991) investigates the widely held hypothesis that a depreciation of the home currency is beneficial to the home companies involved in international competition. He examines two industries in particular: the world automobile and steel industries. By using daily and weekly data, he assesses the impacts of the real exchange rate changes on the industries' cash flows. Interestingly, he finds that to the contrary, a depreciation of the home currency leads to a decline in the value of both industries.

Bodnar and Gentry (1993) use aggregate industry portfolio returns to examine industry level currency exposure for Canada, Japan and the USA for the 1983-1988 period. They find that only 30% of the industries are exposed to significant exchange rate risk. They also find that an appreciation of the domestic currency is positive for non-traded goods industries, importers and users of internationally priced inputs and negative for exporters and foreign investors.

Bartov and Bodnar (1994) find no significant relationship between abnormal returns to firms with international activities and contemporaneous exchange rate changes. However, they record a negative association between a lagged change in the dollar and the abnormal returns. On the other hand, Choi and Prasad (1995) find that exchange rates do affect firm value but the exposure is positively related to firm specific foreign involvement variables such as profits, sales and assets. Most of the firms in the sample benefit from a depreciation of the dollar. Aggregating the data into industries yields to insignificant exposure coefficients. This is due to the loss of information resulting from this process.

Fang and Loo (1996) investigate the relationship between the exchange rate and common stock returns using an APT framework. They formed a total of 20 portfolios of common stocks of the markets of the US, Canada, UK, and Japan. Using end of months SDR values per unit of local currencies, they find the returns to be significantly correlated to the currency coefficient, cross sectionally.

In brief, while we know the impact of exchange rate changes on tourism cash inflows to be positive from the existing literature, nothing is known about the nature of the relationship between cash outflows and currency changes. Furthermore, we believe that the analysis of the currency sensitivity of the tourism industry cannot be complete without a comprehensive investigation of tourism related companies' exposure. Previous research has focused in general on the cash flow exposure and was limited to the tourism account.

If capital markets are efficient, then the way exchange rates affect the tourism industry should be reflected in the stock returns of tourism related firms. This study would shed some lights on the relationship between the value of the Canadian dollar and the performance of the tourism industry by including tourism firms.

II. Data

Statistics Canada's Database CANSIM as well as its publication *Travel between Canada and other countries* were searched for quarterly receipts and payments of the international travel accounts of between Canada and of its three most important partners in tourism: The USA, The UK and Japan for the period 1980-1995. According to Statistics Canada, the United States is the international destination Canadians visit the most and American residents the largest group of international visitors to Canada (in 1995, they represented 76.8% of non residents entering Canada). After the USA, the UK was the most popular destination for Canadian residents in 1994 and also the most frequent origin of overseas residents visiting Canada followed by Japan.

In the course of this study, the payments and receipts in the country global international travel account are analyzed as well as in its accounts with each of the selected countries. The payments are the real expenditures(expressed in Canadian dollars) made by Canadian tourists in the visiting country.

They include international fare payments by residents to foreign carriers, expenditures for lodging, food, entertainment, local transportation and other purchases of goods and services.

The receipts are the expenditures made by visitors in Canada and include international fare payments by non residents to Canadian carriers; their expenditures in Canada for lodging, food, entertainment, local transportation and other purchases of goods and services.

Monthly bilateral exchange rates were also collected from CANSIM for the same period. The exchange rates are expressed as unit of foreign currency per one Canadian dollar. Therefore, at the cash flow level analysis an increase in the rate means an appreciation of the Canadian dollar. The monthly series were averaged out to produce quarterly series.

The TSE monthly review was searched for tourism related companies. The tourism industry is difficult to define because the defining feature cannot be a product as with other industries. Tourists purchase a variety of products (food, transportation, accommodation etc...) that come from different industries. Therefore, to define the tourism industry in this study, we would look at three industries that can be considered to be mainly tourism related: Hotels and Restaurants, Food Services, Transportation and related activities (package tours for instance).

The TSE monthly Review classifies firms according to their operating sector. A total of 15 companies were identified to be in the hotel/restaurant and transportation businesses. Seven firms were removed from the sample due to the lack of sufficient data (Firms with more than 5 consecutive missing data points). Therefore, the final sample for the company level analysis consists of eight firms. They are listed in appendix 3 along with a description of their activities and statistics on individual returns. Monthly stock returns of these companies from August 1986 and to March 1996 were retrieved from the TSE/Western Database.

The return on the value weighted TSE index for the same period is used as a proxy for the market. The drawback of using the TSE index is that it considers a stock degree of risk only in terms of the domestic market. Since tourism related firms operate on different markets, we assume that they are exposed to worldwide events and relatively integrated with global capital markets. Therefore, we also introduce the Morgan Stanley World total return index (translated into Canadian dollars) as the benchmark market index. It could be interesting to check whether the predictive power of the model is sensitive to the choice of the index.

The returns on the TSE 300 and the bilateral US dollar /Canadian dollar exchange rate are also taken from the TSE/Western Database. To get more insight on the relationship between the exchange rate changes and the tourism firms returns, we added two new exchange rate variables: the real and nominal trade weighted value of the US dollar vs the Canadian dollar. These are taken from FRB Dallas. Both the bilateral exchange rates as well as the trade weighted rates are expressed one Canadian dollar per unit of US dollar. Therefore, an increase in the rate (or in the index) means a depreciation of the Canadian dollar.

III. Methodology

To assess the sensitivity of the tourism industry's performance to exchange rate changes, we first use a three country framework to run OLS regressions as in many related studies where the dependent variables would be cash inflows and outflows.

Our point of departure is the basic model as by Loeb (1982) and Chadee et al (1987):

$$CI_{jt} = \alpha_1 + \beta_1 Ex_{jt} \quad (1)$$

$$CO_{jt} = \alpha_2 + \beta_2 Ex_{jt} \quad (2)$$

Where

CI_{jt} = Quarterly travel cash inflow from destination j at time t

CO_{jt} = Quarterly travel cash outflow to destination j at time t

Ex_{jt} = The bilateral exchange rate at time t between Canada and destination j

$\alpha_1, \alpha_2, \beta_1, \beta_2$ are parameters to be estimated.

The main hypothesis to be tested is that a depreciating (appreciating) currency favors (hurts) the inflows of cash to the tourism account.

We also test the robustness of (1) and (2) to the possibility that economic agents react to past exchange rates by adding the first lag of the exchange rate variable.

In addition to the linear form, the log linear regression was run as in related studies. The log linear model is obtained by taking the logarithm of each variable in the basic regression.

Equations (1) and (2) can be thought of as problematic since they imply that only exchange rates unidirectionally influence the cash flows of the tourism account. However, the causation may be bi-directional. Therefore, one should test for possible causation and cointegration. Our study would be the first one to address this issue. Prior to specifying the appropriate causal form, we first conduct tests of the time series properties of the variables.

After examining the tourism cash flows at an aggregate level, we investigate whether tourism related firms are exposed to currency risk. The foreign exchange exposure is measured by the regression coefficient of the stock return of the firm on the exchange rate variable. Estimates of the firms' exposure can be obtained from the following two-factor standard market model as extended by Jorion(1990).

$$R_{it} = \alpha_1 + \beta_2 Rx_t + \beta_3 f_{mt} \quad (3)$$

where

R_{it} = rate of return of firm i at time t

Rx_t = The monthly rate of change in the Canadian/US exchange rate at time t or in the trade-weighted value of the dollar

f_{mt} = orthogonal TSE or World index return (orthogonal to the exchange rate).

The US dollar is the sole currency used in this model to check the exchange rate exposure. The parameters $\exists_2$ and $\exists_3$ are measures of the sensitivity of stock returns to unanticipated exchange rate and market movements.

The use of the orthogonal market return would avoid any bias resulting from the possible correlation between the two explanatory variables and hence enhance the explanatory power of the model. The orthogonal market factor is the residual from the following one factor regression:

$R_{mt} = \beta_1 Rx_t + f_{mt}$ (4)

R_{mt} = The monthly return on the value weighted market index

Rx_t = The monthly rate of change in the Canadian/US exchange rate at time t

f_{mt} = residual factor

Since a depreciation of the Canadian is supposed to be beneficial to the country tourism account fom international finance theory, we can therefore expect that the impact of the depreciation would be positive for tourism related firms. We also test the lag exposure hypothesis as extended by Bartov and Bodnar (1994) who state that past currency changes are good predictors of future stock returns, because there is a mispricing of contemporaneous currency effects on stock return.

The lag exposure hypothesis is tested by regressing stock returns against market adjusted current and lagged exchange rate variables. To check the hypothesis, one, two and three month lags lengths are also tested.

IV. Empirical results

Tests for unit roots

The first step in our analysis is to test whether each series follows a random walk. Standard regression tests for causation when unit roots are present could lead to spurious results. Our test would basically involve the Dickey-Fuller (DF) and Phillips-Perron (PP) unit root type of analysis. The null hypothesis is that the series have unit roots, against the alternative that they do not. If the t-statistics are below the critical value, the null hypothesis cannot be rejected. Table I presents the stationarity results using the DF as well as the PP tests for models estimated with and without a time trend for each of the series and the first difference of the series.

The reported results indicate that the exchange rate series follow a random walk as posited in some studies. This finding is important for our study. In particular, based on this result, we can be justified to use the change in exchange rates as a good proxy for unexpected exchange rate changes. We also find the presence of unit roots only for the global payments series and the payments to Japan. Stationarity is achieved by taking the first difference; which implies that the series are integrated at order one. The global receipts series and the remaining series on the travel accounts with the US, the UK and Japan are stationary. Therefore a standard regression would be used to test for causation for these series.

The non-stationary series are now tested for cointegration and later for causality.

Cointegration test

Since the payments series of the Canadian global travel account and of the account with Japan follow a white noise, it is important to examine whether the residuals of the regressions between the payments and the exchange rate series are stationary. When non-stationary variables are cointegrated, a long run equilibrium relationship may exist between them and prevent them from moving far apart.

An OLS estimation of the cointegration regression is performed on the series and the same Dickey-Fuller and Philip-Perron tests are used to test the stationarity of the residual series. The cointegration regression is in the form:

$$Y_t = \alpha + \beta x_t + \varepsilon_t$$

Table II presents the results of the cointegration test. They show that the global payments series is integrated with the US dollar and the Japanese yen. However, the null hypothesis of no cointegration with the Pound Sterling cannot be rejected. The reported DF statistic, -2.08, is well below the critical value of 3.37, at 5 percent level of significance. The payments/Japan is also not cointegrated with the Canadian Dollar / Japanese Yen exchange rate.

Causality test.

A causality test is performed to determine the nature of the interaction between these payments series and the changes in the exchange rates. First, we use the standard Granger-Sims causality test for both payment series. The Granger causality test is based on the following two sets of regressions:

Unrestricted regression: $Y = \sum\alpha_i Y_{t-1} + \sum\beta_i X_{t-1} + \varepsilon_t$

Restricted regression : $Y = \sum\alpha_i Y_{t-1} + \varepsilon_t$

The same regressions are also run for X (to test whether Y causes X). The null hypothesis of no causality is rejected if the two β's are significantly different from zero.

We test whether individually there was any causal relationship between any of the currencies and the series. Table 3 presents the results of the causality test. The cash outflow of the Canadian tourism account is Granger caused by the British pound and also by the Japanese yen. As far as the US dollar is concerned, the relationship is bi-directional. Changes in the exchange rate cause changes in the cash outflows of the tourism account and vice versa. The results show also that the payments to Japan are Granger caused by the Canadian dollar/Yen exchange rate.

Second, we make use of the multivariate generalization of the Granger-Sims causality test for the payments to the global account. All the three currencies (the US dollar, the British pound and the Japanese yen) were to be included in the system.

But since the results suggest that the relationship is in both ways between the US dollar and the global payment series, the US dollar is dropped from the multivariate causality test.

We find evidence that both the Pound Sterling and the Japanese Yen cause changes in the cash outflows of the global tourism account.

Regression analysis

- **Tourism cash flows**

We now examine the impact of the exchange rates on the tourism cash flows in the OLS regression framework. In appendix 2, we plot the cash flows from inward and outward travel between Canada and the selected countries along with the exchange rates for the period 1980-1995.

Table 4.1(on p.36) presents the results of the linear form of the regression model for Canadian tourism with the USA, Japan and the United Kingdom. In Table 4.2 the same regressions are run with the sole difference that all the variables are expressed in logarithm form so that the estimated coefficients can be interpreted as average elasticities.

From table 4.1 we note that the Japanese yen is the only currency with a highly significant coefficient in the regression of the global receipts account. The model explains up to 27% of the variations of the dependent variable.

The sign of the coefficient is negative which means that as the Canadian dollar appreciates *vis a vis* the Japanese yen, there is less cash inflows in the Canadian travel account. This confirms our expectations.

The contemporaneous exchange rate variable is insignificant in the payments as well as the receipts regressions for the UK and the US. In the receipts series with Japan, the lagged one variable is negative and significant at 10%. The remaining regressions checking for the lagged relationship do not show any significant results.

Table 4.2 presents the same regressions results but in the logarithm form. Again, the yen is highly significant in the global receipts regression while the other currencies are non significant at conventional levels. In a stepwise regression framework, it is the only significant variable.

We notice that the use of the log form increases the explanatory power of the model. The model explains over 37% of the variation of the global receipts and 60% of the variation of receipts in Canada /Japan tourism account. The receipts/Japan series has no contemporaneous relationship with the exchange rate but the lag variable is negative and highly significant (1%).

This lagged relationship with the receipts would mean that a depreciation of the Japanese yen (an appreciation of the Canadian dollar) a quarter ago would translate to a decrease of the cash inflows to Canada tourism account. In other words, when their currency depreciates, Japanese spend less in Canada.
The lagged exchange rate variable is insignificant for the US. It is significant for the United Kingdom, where it is positive in the payment series and slightly above 6% level of significance: a depreciation of the British pound a quarter ago (an appreciation of the Canadian dollar) would increase the spending of Canadian tourists in the UK.

In view of these results we find evidence that lagged changes in the value of the dollar are associated with the performance of the tourism industry; an issue that has not been explored by previous studies. In line with these, our study shows that an appreciating dollar has a negative impact on the cash inflows of the tourism account.
Furthermore, our analysis indicates that there is a difference in the way exchange rates changes affect the tourism account cash inflows and outflows. As far as the global account is concerned, there appears to be a correlation between exchange rates and the receipts account; however, the payments are rather caused by the currency movements.

- **Firms' exposure**

With the swings in the value of the Canadian dollar, the impact of the exchange rate can be important on common stocks returns of tourism related firms. The performance of the Canadian dollar vis a vis the US dollar is proxied by the bilateral exchange rate and the trade-weighted real and nominal value of the dollar in this model.

We use equation (3) to investigate whether exchange rate changes affect the stock returns. Estimates of the exposure coefficient are obtained by the ordinary least squares (OLS) method. First, we assess the exchange rate sensitivity of individual firms. Table 5.1 presents the results of the bilateral exchange risk of the individual firms, when the market is proxied by the TSE and the world indices. We notice that the sign of the exposure is the same, but on average the exposure coefficients appear to be slightly larger when the TSE index is used. Of the eight companies, we note that seven of them undergo some form of currency exposure. Of these, four firms have highly significant negative (above 5%) contemporaneous exposure when the market is proxied by the TSE 300 return.

Only one of eight firms exhibit a lagged exposure (each of the lagged variables is significant). Two of them exhibit significant negative one month lag exposure while the lag {3} parameter is significant for one firm.

In Table 5.2, the same regressions are run with the difference that we use the trade-weighted nominal and real exchange rates. The results indicate that the sign of the coefficient is negative in each of the tables. This means that the firms experience a decrease in stock returns when the Canadian dollar depreciates vis a vis the US dollar.

This can be explained by firms specific characteristics ; for instance, they might have their operating costs denominated in Us dollar.

One interesting point to be noted is the sensitivity of the model to the choice of the market proxy: the predictive power of the model is higher when we use the TSE index return for each of the three exchange rate variables mentioned.

The negative impact of the Canadian dollar depreciation on tourism related firms does not support the hypothesis that Canadian tourism firms should benefit from a depreciation of the Canadian dollar. However, these results are entirely consistent with Luehrman(1991). The classification of an industry to be traded or non traded is arbitrary; but if we consider the tourism industry to be a non traded good industry, these findings would also be consistent with Bodnar and Gentry. Further research should be interesting in order to determine whether these firms are more net cash outflows exposed than cash inflows exposed to exchange rate changes.

Second, we form a portfolio by taking the average returns on the eight stocks over the same period. This portfolio should reflect the currency sensitivity of the tourism industry. We again make use of the OLS method to determine this exposure. The results are also presented in tables 5.1 and 5.2 (on p.38-40).

The signs of the coefficients are also negative. We note that there is no significant correlation between the contemporaneous change in the dollar and the tourism industry stock performance when the bilateral exchange rate is used. The estimate of the coefficient on the current change in the dollar is not significantly different from zero at standard levels. The contemporaneous parameter is highly significant when the real and nominal trade-weighted value of the dollar are used instead. But, the estimate of the coefficient on both the first lagged dollar change and the third lagged dollar change is different from zero at respectively ten percent and five percent levels of significance when the bilateral exchange rate is used. Only the third lagged change is significant when the explanatory variable is either the real or the nominal trade weighted value of the Canadian dollar.

Interestingly, we notice that there is not that much of a difference in the results whether we use the real or the nominal value of the currency both in the regressions for the individual firms and the portfolio.

The nominal and real exchange rate sensitivities of the firms in the sample are very similar. The firms that have a nominal currency exposure are also the ones with a real currency exposure. The predictive power of the model is also quite the same, although slightly higher with the real exchange rate variable.

The finding of the lagged response is consistent with Bartov and Bodnar(1994) who hypothesize that investors are unable to characterize the relationship between the changes in the dollar and stock performance without bias; the impact of past changes in the dollar is known only when information on economic performance of the firm become available.

The stability of the exposure coefficients is tested because the firms might be differently exposed from one period to the other. We use only the bilateral exchange rate for this test. In order to do so, the sample is divided in three sub-periods. The results of the regressions for the periods 1986 to 1989, 1990 to 1993 and 1994 to 1996 are presented in table 6. The coefficient appears to change over time.

For the portfolio, none of the exchange rate variables is significant in the first and the third sub-periods: the lagged one variable is significant at only 10% in the second period. None of the firms has an exposure in both the first and second sub-periods; while only two firms have changing coefficients when we compare the second and third periods.

To better understand the relationship between exchange rates changes and the tourism industry performance, we investigated the sensitivity of the stock returns(individual firms as well as the portfolio) to the performance of the aggregate tourism account. The logarithms of the global payments and receipts of the Canadian tourism account as well as the lagged (one month lag) of these variables are used as regressors. Since the payment series follows a random walk, we only orthogonalize the receipts series (orthogonal to the exchange rate variables).

As far as the portfolio is concerned, the payments as well as the first lag of this variable are insignificant at conventional levels. But there is a negative contemporaneous as well as a lagged relationship between the receipts to the Canadian tourism account and the stock performance of the industry. The firms are differently exposed: some of the firms are sensitive to the performance of the international travel account of the country, while others are indifferent to it. The results of these regressions are presented in appendix 3. It is worth noting that we transformed the receipt and payments series from quarterly to monthly data. This process might have altered the performance of the model.

V. Conclusion

This paper examines the sensitivity of the Canadian tourism account as well as the industry stock performance to the fluctuations of the Canadian dollar. We find that an appreciation of the Canadian dollar vis a vis the Japanese Yen has a negative effect on the cash inflows to both the global tourism account and the account with Japan. Lagged exchange rate changes are also found to have some predictive power. But, in contrast to previous studies, we also consider the impact of exchange rate changes on the cash outflows of the account. We find that the outflows are Granger-caused by the Japanese Yen and the British Pound. Since the two sides of the cash flows are differently affected by the fluctuations of the dollar, we do not know the nature of the overall impact of currency risk on the tourism account as a whole.

To get more insight on the relationship between the exchange rate changes and the tourism industry, we also test whether the stock performance of tourism related firms is affected by currency risk. We measure the exchange rate risk by using a standard two-factor market model. The model is estimated for eight tourism related firms between august 1986 and march 1996 and for the industry portfolio. We find that Canadian firms do no benefit from a depreciation of the home currency and that lagged changes in the dollar are significant in predicting future stock returns.

We are aware that the size of the sample is rather very small and that some firm specific characteristics might be helpful to consider in order to determine currency exposure. This is an open question for future research.

Appendix 1

Table 1. Unit Root Tests Statistics

	Levels				differences			
Series	DF[1]	DFT[2]	PP[1]	PPT[2]	DF[1]	DFT[2]	PP[1]	PPT[2]
PAYMENTS								
US	-6.998	-8.1275	-7.222	-8.3406	-13.807	-13.691	-20.407	-20.4137
UK	-5.4711	-7.4082	-5.523	-8.6758	-8.0154	-7.9512	-10.4665	-10.4725
Japan	-3.1274	-5.32176	-3.05906	-5.1092	-11.9757	-11.9842	-12.5758	-12.6376
Canada	-1.8369	-6.8754	-1.2115	-7.3848	-15.2918	-15.1548	-22.5863	-22.5298
RECEIPTS								
US	-6.9444	-8.3342	-7.0268	-10.4358	-9.4701	-9.3909	-14.1433	-14.1394
UK	-5.6358	-7.5429	-5.7534	-8.2501	-8.6977	-8.6252	-12.3546	-12.3733
Japan	-4.0951	-7.4758	-4.1198	-7.9131	-9.1892	-9.1135	-12.8337	-12.8009
Canada	-5.7365	-8.306	-5.8949	-10.6789	-9.4106	-9.3319	-13.9143	-13.9071
EXCHANGE RATES								
CDN/US dollar	-0.9951	-1.0343	-1.3973	-1.448	-6.3946	-6.3412	-6.7012	-6.7018
CND/POUND	-2.5196	-2.4052	-2.6268	-2.4945	-6.1666	-6.2244	-6.1517	-6.2599
CDN/YEN	-0.8778	-1.5186	-1.0178	-2.0437	-5.5771	-5.5304	-5.6443	-5.6456

[1] DF and PP denote the Dickey-Fuller and Phillips-Perron t-statistics without a time trend
[2] DFT and PPT denote the Dickey-Fuller and Phillips-Perron t-statistics with a time trend

TABLE 2: COINTEGRATION REGRESSIONS

		DF	DFT	PP	PPT
CDN/YEN -	Payments/Japan	-2.6301	-2.4382	-2.7001	-2.4987
CDN/US -	Payments/Canada	-4.2199	-4.8371	-4.2915	-4.9888
CDN/POUND -	Payments/Canada	-2.0881	-6.9245	-1.5887	-7.3513
CDN/YEN -	Payments /Canada	-4.3983	-4.6004	-4.6863	-5.013
95% critical value		-3.37	-3.8	-3.37	-3.8

Table 3: Granger Causality Test

Direction of causation	F- statistics β	β
Cdn/US ⟶ Payments/Canada	100,31***	
Payments/Canada ⟶ CDN/US		2,688***
Pound/CDN ⟶ Payments/Canada	98,47***	
Payments/Canada ⟶ Pound/CDN		1.03
Yen/CDN ⟶ Payments/Canada	95,03***	
Payments/Canada ⟶ Yen/CDN		1.77
Yen/CDN ⟶ Payments/Japan	6,29***	
Payments/Japan ⟶ Yen/CDN		0.93

Multivariate Granger Causality Test

Yen
Pound ⟶ Payments/Canada

F= 174.34***

TABLE 4.1 Regression Results(linear)

	CDN/US	*CDN/US{1}*	POUND	POUND{1}	YEN	YEN{1}
RECEIPT						
Canada	0.3084		0,6319		-4,978***	
US	0.9473	-1,3402				
UK			-0,6098	0,3015		
Japan					0,7087	-1,9092*
PAYMENTS						
US	0,4856	-0,2844				
UK			-1,3612	1.525		

TABLE 4.2 Regression Results (log-linear)

	CDN/US	*CDN/US{1}*	POUND	POUND{1}	YEN	Yen{1}
RECEIPT						
Canada	1.1223		1.1494		-6.141***	
Us	0.7956	-1.21845				
UK			-0.5228	0.3383		
Japan					1.0088	-2.6112***
PAYMENTS						
US	-0.0066	0.1609				
UK			-1.4602	1.8647*		

*** significant at the 1% level

* significant at the 10% level

Tables 4.1 and 4.2 are based on equations (1) and (2) on page 16
In 4.1 and 4.2 the equations are estimated
in the linear and log-linear forms respectively.

Table 5.1: Firms' bilateral exchange rate exposure

	MARKET=WORLD INDEX				MARKET =TSE INDEX			
	uscan	uscan{1}	Uscan{2}	uscan{3}	uscan	uscan{1}	uscan{2}	uscan{3}
CARA	-0.6163	-3.1514***	2.3984***	-2.1638**	-0.83	-2.4279***	2.2803**	-2.1915**
JOURNEY END	1.437	-3.3068***	-0.4424	0.2304	1.1926	-2.1024**	-0.8729	0.3312
FOUR SEASONS	-2.2133**	-0.5902	1.3701	-0.6349	-2.6957***	0.6095	1.1884	-0.297
CANADIAN PACIFIC	-1.4357	-3.764***	0.8424	0.5891	-2.2465**	-1.7049*	0.189	0.8455
LAIDLAW	-1.936**	-0.4189	1.532	-0.8253	-2.3021**	1.0438	1.0634	-0.7144
GREYHOUND	-0.1051	0.3299	-0.6713	-0.8041	-0.3187	1.2175	-0.958	-0.7518
CANADIAN AIRLINES	0.4813	-1.5028	-0.9103	-1.6923*	0.4593	-1.4354	-0.8629	-1.7222*
CORPORATE FOOD	-2.299**	-0.4211	0.4497	-0.296	-2.7923***	0.8533	0.1538	-0.2523
PORTFOLIO	-0.0731	-2.4391***	-0.3998	-1.89*	-0.3061	-1.6619	-0.6304	-1.9744**
		R^2=8%					**R^2=18%**	

USCAN = Bilateral Exchange Rates Canada/US
*** = significant at 1%
** = significant at 5%
* = significant at 10%

Table 5.2: firms' trade weighted nominal and real exchange rate Exposure

	MARKET = TSE RETURN							
	NOM	NOM{1}	NOM{2}	NOM{3}	REAL	REAL{1}	REAL{2}	REAL{3}
CARA	-2.6783***	3.30161***	-3.16447***	2.443***	-2.6171***	2.9987***	-2.89***	2.41***
JOURNEY END	-1.62*	0.45	0.789	-0.2646	-1.45	-0.08	1.19	-0.1709
FOUR SEASONS	0.0787	0.7829	-1.1919	0.5322	0.4836	-0.1015	-0.0136	-0.329
CANADIAN PACIFIC	-1,79*	1.333	0.4272	-0.7875	-1.94**	1.403	0.2729	-0.5104
LAIDLAW	0.888	0.2367	-1.1753	0.8399	0.9432	-0.2214	-0.2563	-0.0316
GREYHOUND	1.1814	-1.4374	0.2421	0.5939	1.582	-1.94**	0.2096	1.0374
CANADIAN AIRLINES	-1.4299	0.2692	-0.5075	1.6731	-1.2219	0.0661	-0.8935	2.43***
FOOD CORPORATION	0.11901	0.0901	-0.4267	0.1995	0.1643	-0.0433	-0.5076	0.503
PORTFOLIO	-1.7443*	0.6601	-0.8611	1.9467**	-1.4475	0.187	-0.9763	2.65115***
		R^2=18.6%				**R^2=21.6%**		

Table 5.2(cont.)

MARKET = WORLD INDEX

	NOM	NOM{1}	NOM{2}	NOM{3}	REAL	REAL{1}	REAL{2}	REAL{3}
CARA	-3.4388***	3.8645***	-3.261***	2.4653***	-3.3583***	3.4602***	-2.9384***	2.4823***
JOURNEY END	-2.8***	1.4534	0.4242	-0.1009	-2.5423***	0.7681	0.8793	0.0507
FOUR SEASONS	-1.1601	1.7176*	-1.3929	0.6342	-0.7196	0.7375	-0.2148	-0.0961
CANADIAN PACIFIC	3.872***	3.0573***	-0.2294	-0.4313	-3.8459***	2.8757***	-0.3114	-0.0474
LAIDLAW	-0.5605	1.4513	-1.5791	1.0021	-0.3953	0.8887	-0.6757	0.2347
GREYHOUND	0.2755	-0.6721	-0.0045	0.6894	0.7492	-1.2466	-0.0178	1.1801
CANADIAN AIRLINES	-1.5381	0.3221	-0.4873	1.678*	-1.3194	0.0381	-0.7939	2.4264***
CORPORATE FOOD	-1.2285	1.1706	-0.7238	0.3388	-1.1211	0.8983	-0.7324	0.6991
PORTFOLIO	-2.5718***	1.3431	-1.0038	1.9404**	-2.2419***	0.7398	-1.0096	2.6096***
			R^2=8%				**R^2=12%**	

NOM= nominal trade-weighted value of the dollar
REAL= real trade-weighted value of the dollar
1, 2, 3 are lagged parameters

*** = significant at 1%
** = significant at 5%
* = significant at 10%

Table 6. Sub-Periods Analysis

	08/86-12/89				01/90-06/93				07/93-11/96			
	Uscan	uscan1	Uscan2	Uscan3	Uscan	uscan1	uscan2	Uscan3	uscan	Uscan1	uscan2	Uscan3
Cara	0.8514	-1.0645	0.5525	-0.82	-0.42	-1.5	**2.0669****	**-2.5771*****	-1.1821	-1.502	**2.3024****	0.208
Four Seasons Hotels	0.0732	0.47663	**1.9178***	**-1.9966****	-1.33	0.221	1.5797	0.638	-1.5535	1.1405	-1.1513	-0.23
Greyhound	-1.3747	1.2286	-0.181	0.329	0.052	0.015	-1.4581	-0.09	0.5124	1.4182	-0.0425	-0.7
Canadian Pacific	**-2.3917****	**-1.8425***	0.6356	1.433	-0.58	-0.43	-0.4259	1.087	-1.0496	-0.3059	0.1134	-0.6
Laidlaw	-0.7684	-0.4058	0.1893	-0.31	-0.23	1.521	**1.9747****	0.602	**-2.2382****	0.6228	-0.2437	0.331
Canadian Airlines	-0.9923	-0.7973	0.0913	-1.44	1.476	-2.62	0.8452	**-1.7008***	0.1774	-0.8905	-0.993	-1.25
Journey-End Motels	0.3494	0.52	0.3682	**1.7503***	1.452	-0.82	-0.5816	1.131	0.212	**-2.4326****	-0.0968	-0.72
Corporate Foods	0.196	0.3249	1.035	-0.06	-1.56	0.077	0.6989	-0.9	**-2.5886*****	**1.6605***	-0.5378	0.51
Portfolio	-0.9357	-0.5282	1.4965	0.357	0.587	**-1.7***	1.3806	-1.1	-0.161	-0.922	-1.0029	-1.35

* = significant at 10%
** = significant at 5%
*** = significant at 1%
This test is based on equation (3)

Appendix 2

Chart1

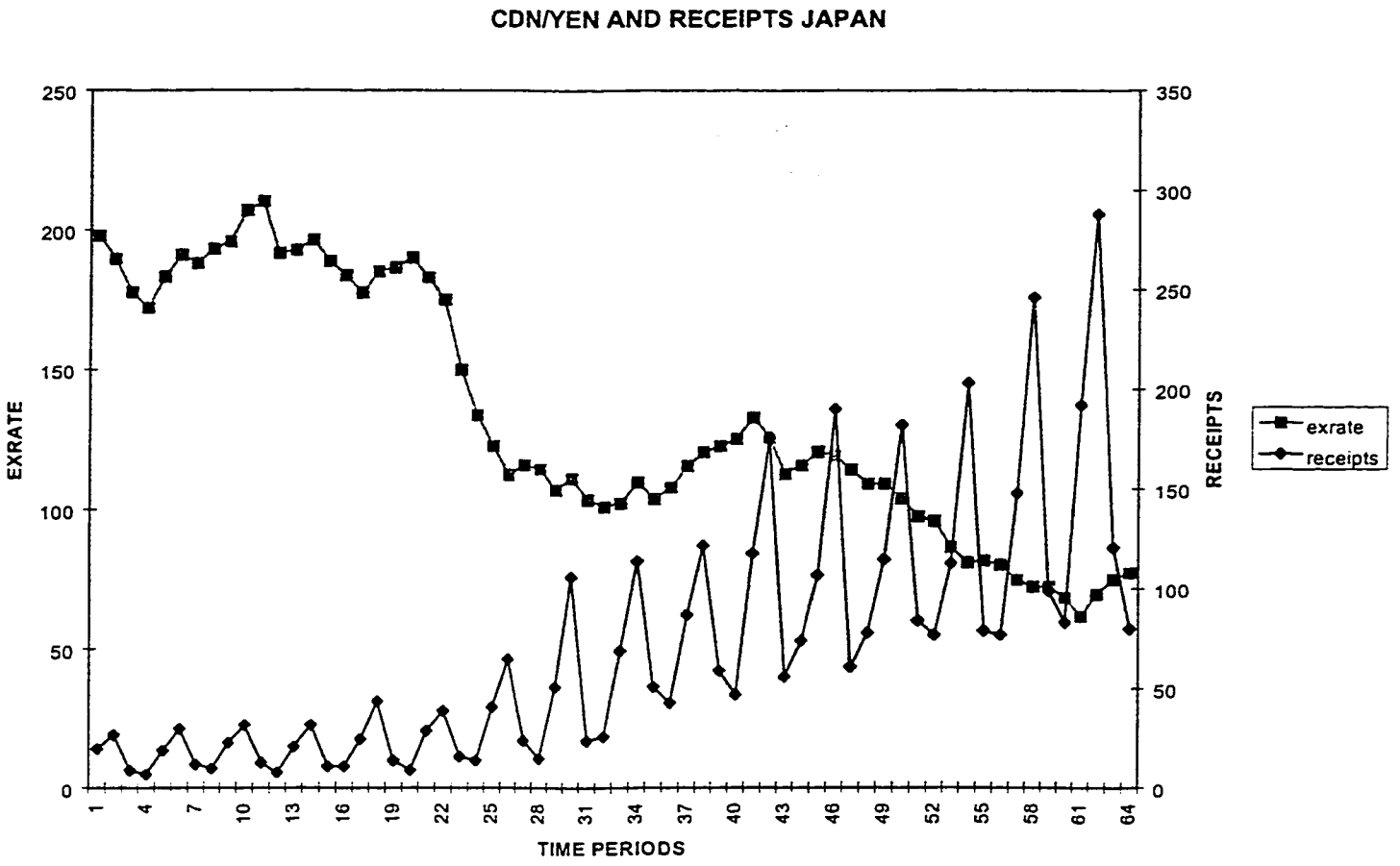

CDN/YEN AND RECEIPTS JAPAN
EXRATE
RECEIPTS
TIME PERIODS
exrate
receipts
250
200
150
100
50
0
350
300
250
200
150
100
50
0
1
4
7
10
13
16
19
22
25
28
31
34
37
40
43
46
49
52
55
58
61
64

Chart 2

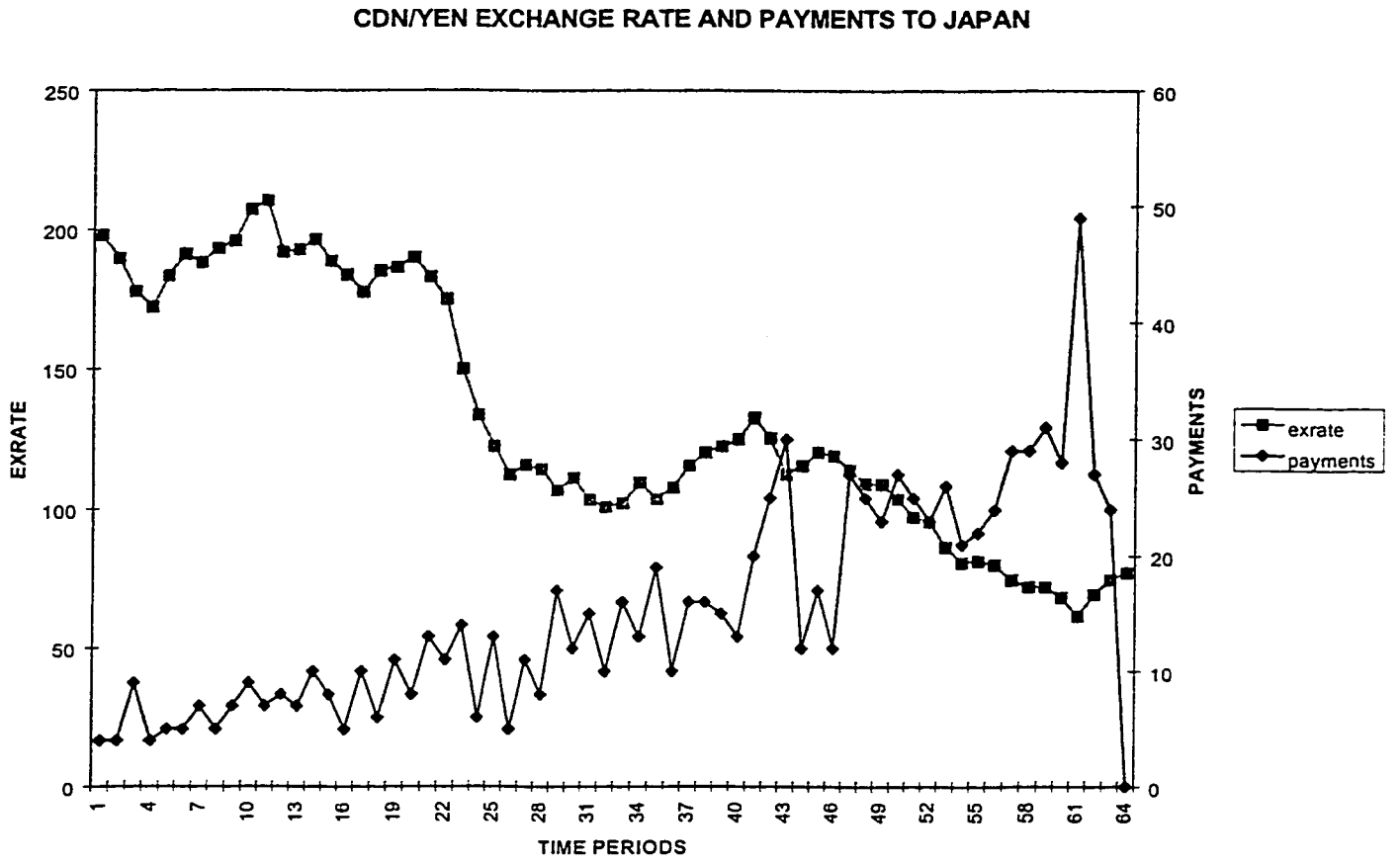

CDN/YEN EXCHANGE RATE AND PAYMENTS TO JAPAN
EXRATE
PAYMENTS
TIME PERIODS
exrate
payments
250
200
150
100
50
0
60
50
40
30
20
10
0
1
4
7
10
13
16
19
22
25
28
31
34
37
40
43
46
49
52
55
58
61
64

Chart 3

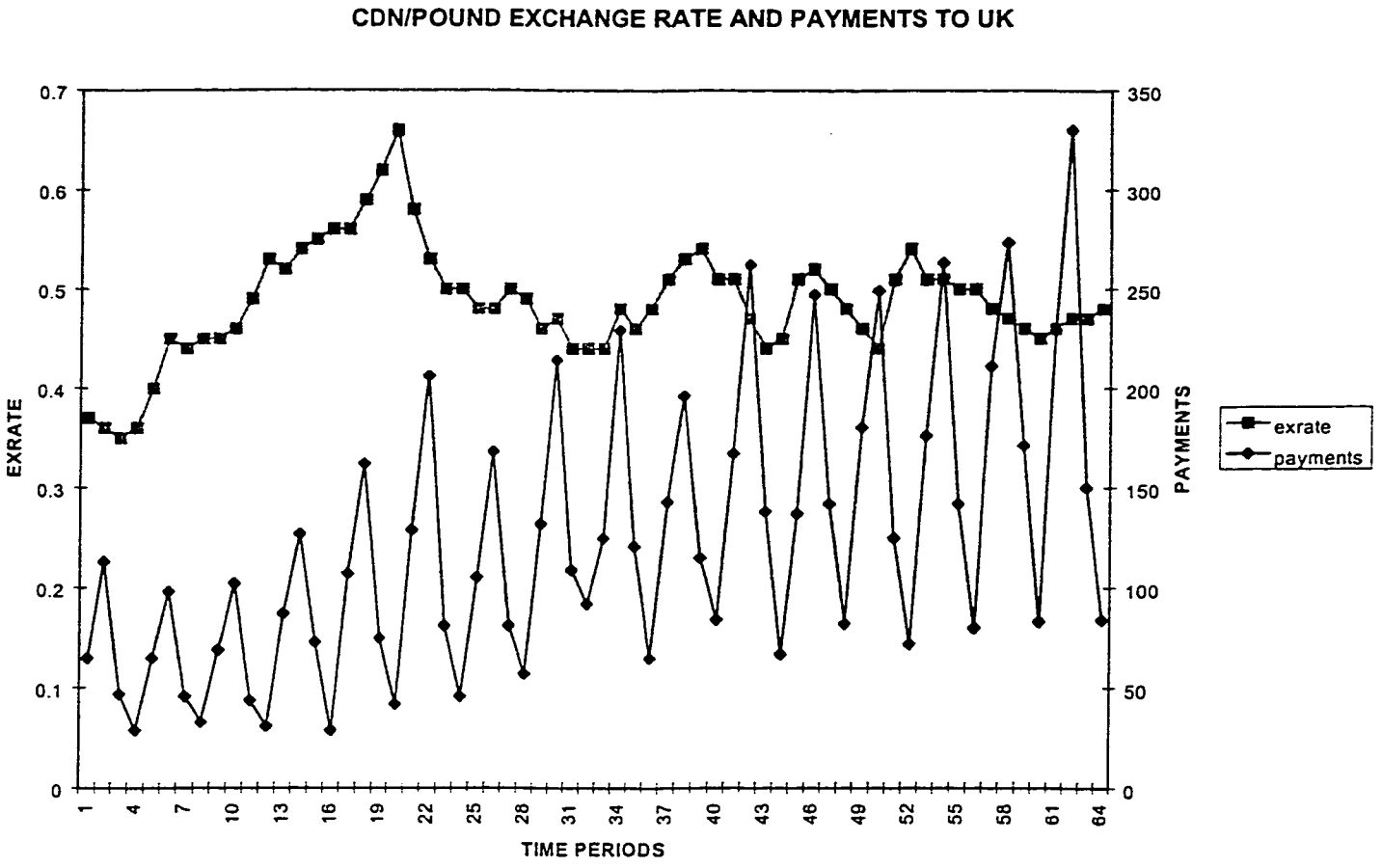

CDN/POUND EXCHANGE RATE AND PAYMENTS TO UK
EXRATE
PAYMENTS
TIME PERIODS
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
350
300
250
200
150
100
50
0
1
4
7
10
13
16
19
22
25
28
31
34
37
40
43
46
49
52
55
58
61
64
exrate
payments

Chart 4

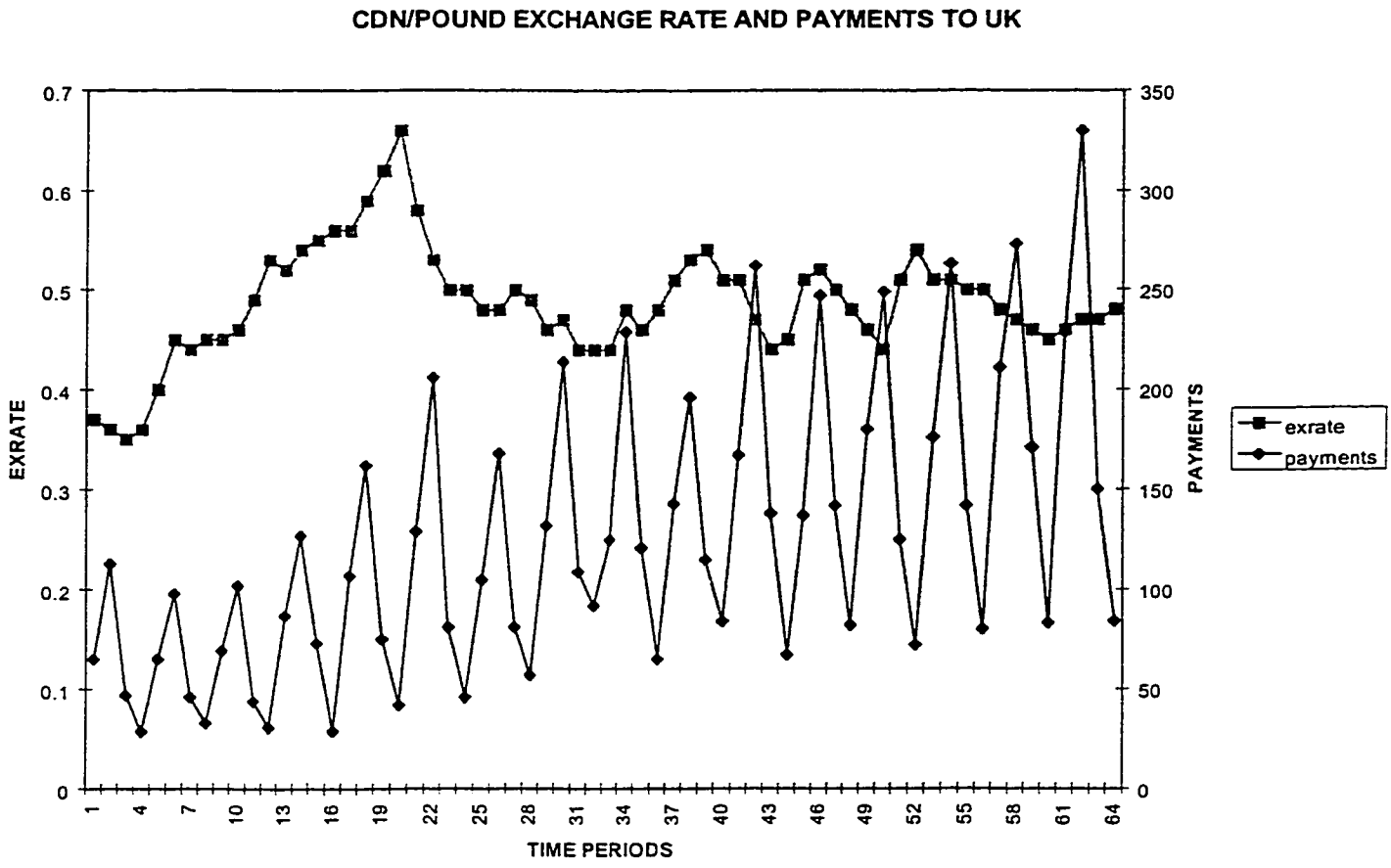

CDN/POUND EXCHANGE RATE AND PAYMENTS TO UK
EXRATE
PAYMENTS
TIME PERIODS
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
350
300
250
200
150
100
50
0
1
4
7
10
13
16
19
22
25
28
31
34
37
40
43
46
49
52
55
58
61
64
exrate
payments

Chart 5

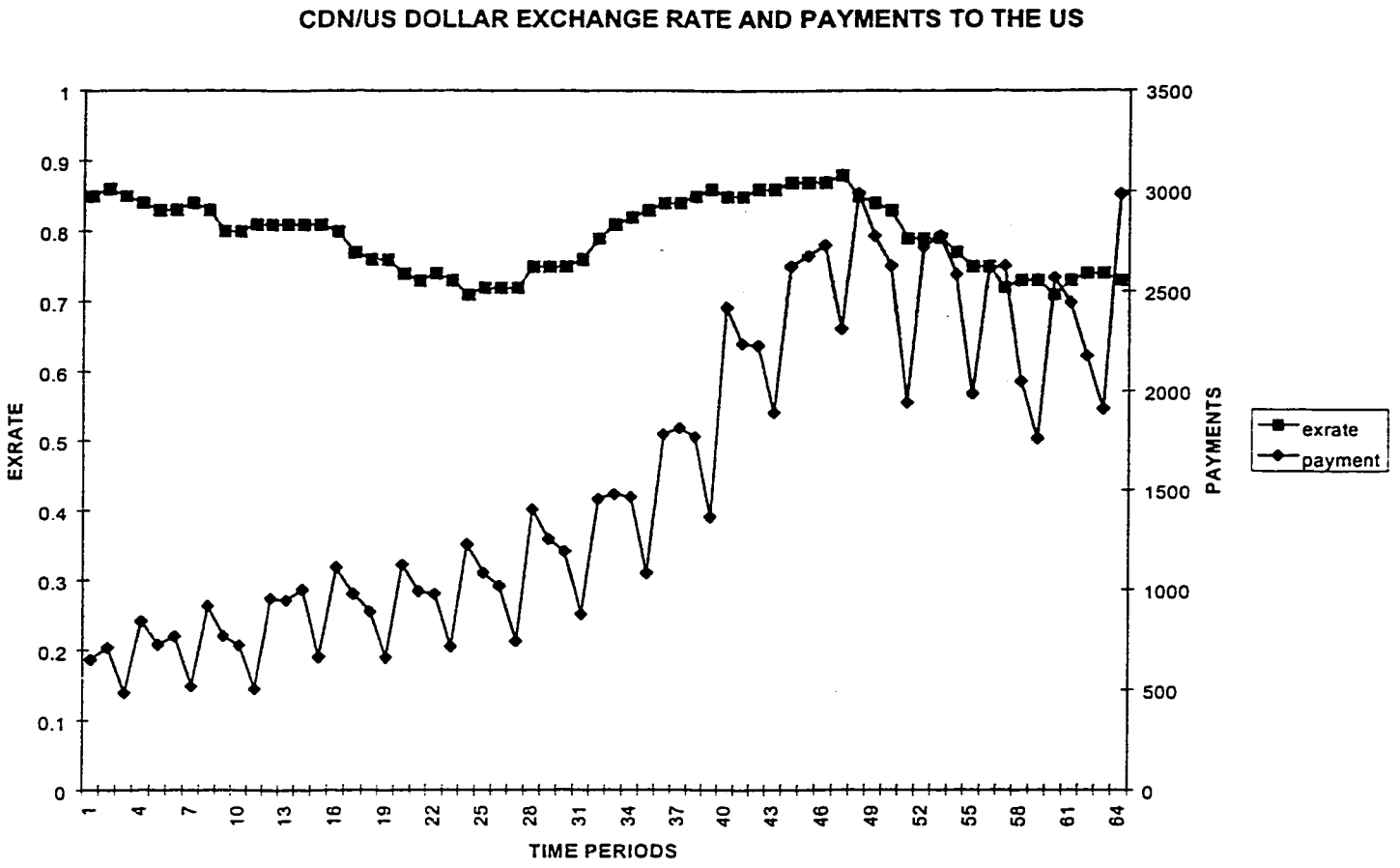
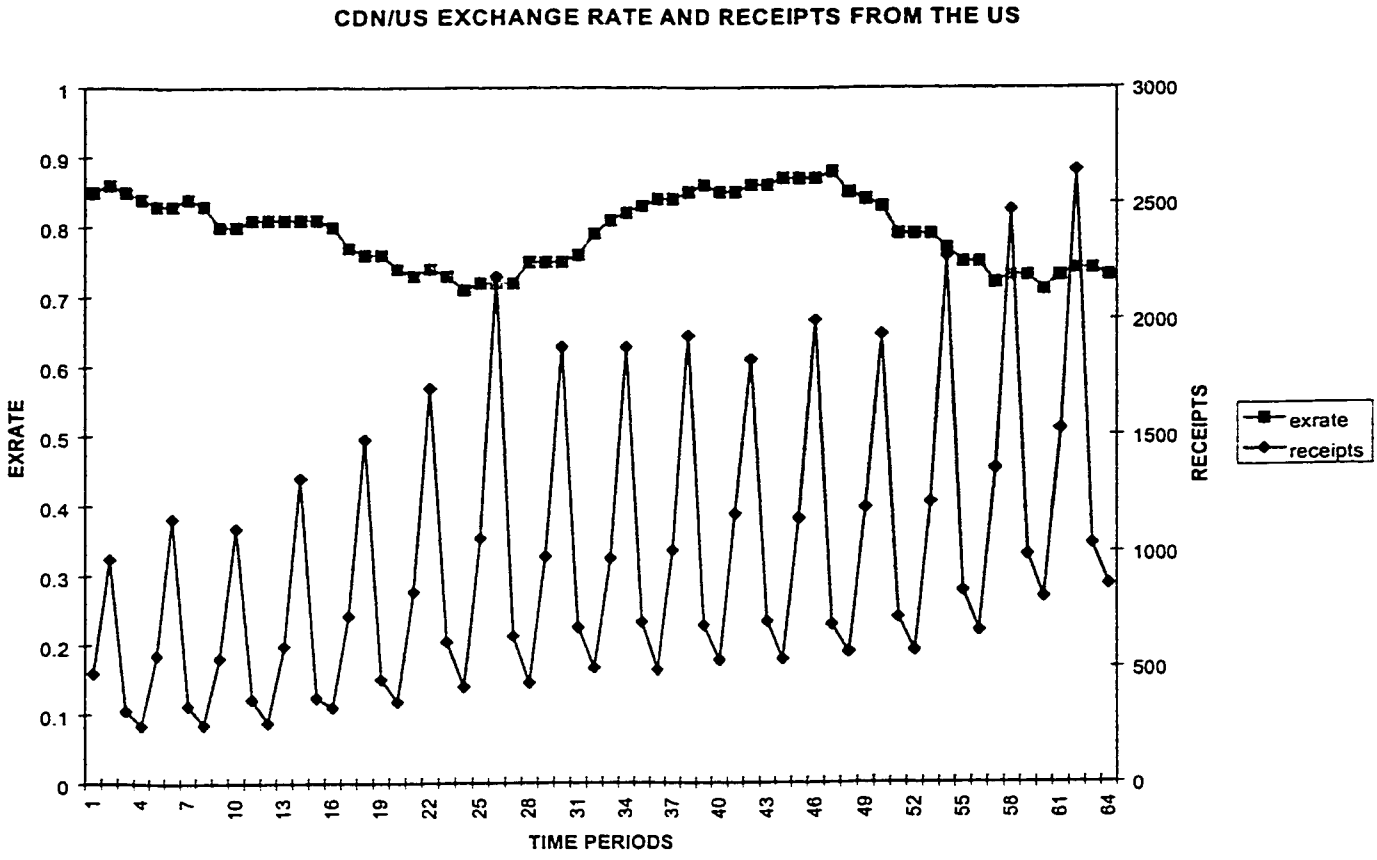

CDN/US DOLLAR EXCHANGE RATE AND PAYMENTS TO THE US
EXRATE
PAYMENTS
TIME PERIODS
exrate
payment
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
3500
3000
2500
2000
1500
1000
500
0
1
4
7
10
13
16
19
22
25
28
31
34
37
40
43
46
49
52
55
58
61
64

Chart 6


CDN/US EXCHANGE RATE AND RECEIPTS FROM THE US
EXRATE
RECEIPTS
TIME PERIODS
exrate
receipts
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
500
1000
1500
2000
2500
3000
1
4
7
10
13
16
19
22
25
28
31
34
37
40
43
46
49
52
55
58
61
64

Appendix 3

A1. Companies in the Sample

(stock symbols in parenthesis)

Journey's End Motels Corporation (JEM); main activities : accommodation

Cara Operations Ltd (CAO): Restauration

Four Seasons Hotels Inc. (FSH): Hotels

Laidlaw Inc (LDM):Transportation ; also organizes package tours

Corporate Foods Ltd (CFL)

CP Rail (CP); owns hotels through subsidiary CP Hotels

Canadian Airlines Corporation(CA) . Air Transportation

Greyhound Canada Transportation Corp.(GHC)

A2. Descriptive statistics: stock returns and exchange rate changes variables

	Mean	Skewness	Variance
TSE	0.0092	-1.6737	0.0016
World Index	0.0096	-0.5937	0.0017
Uscan (bil exchange rate)	-0.00011	0.2793	0.0001
CAO	0.0077	0.8464	0.0059
FSH	0.0127	-0.5269	0.0081
JEM	0.0055	1.1822	0.0184
LDM	0.0089	-0.2194	0.0087
CAN	-0.0905	-10.3986	0.6802
GREY	0.00246	-0.1688	0.0049
CP	0.0121	0.3233	0.0045
CFL	0.0125	0.4117	0.005

A3. Relationship between the tourism related firms and the performance of the Canadian tourism account

	paymts	paymts{1}	receipts	receipts{1}
Cara Operations	-1.69*	1.2934	-0.5231	-1.4695
Four season's hotels	0.774	-0.2295	-2.09**	-1.6769*
Canadian Pacific	0.6653	-0.9592	-2.07**	-2.07**
Laidlaw	-0.7999	-0.1081	-1.73*	-0.281
Journey's end motels	0.8471	-1.3132	0.0507	-0.8233
Canadian Airlines	-0.3492	0.1766	-1.3692	-2.003
Corporate Food	0.823	-0.501	-0.8545	-0.2917
Greyhound	0.3496	-0.0061	-1.2218	0.8166
Portfolio	0.1042	-0.3858	-1.883**	-1.67*

* = significant at 10% level of significance
** = significant at 5% level of significance

Bibliography

Athiyaman, A. and R.W.Robertson. "Time Series Forecasting Techniques: Short Term Planning in Tourism". *International Journal of Contemporary Hospitality Management*, Vol.4(1992): 8-10

Bartov, E. and G. Bodnar. "Firm Valuation, Earnings Expectations and the Exchange Rate Exposure Effect". *Journal of Finance* , December 1994: 1755-1786

Bodnar, G and W. Gentry. " Exchange rate Exposure and Industry Characteristics : Evidence from Canada , Japan and the USA". *Journal of International Money and Finance*, vol12 (1993): 29-45

Chadee, D and Z. Mieczkowski. " An Empirical Analysis of the Effects of the Exchange Rate on Canadian Tourism". *Journal of Travel Research* . Summer 1987: 13-17

Chan, Yiu-Man "Forecasting Tourism: A Sine Wave Time Series Regression Approach". *Journal of Travel Research*. Fall 1993: 58-60

Choi, J. and A Prasad . "Exchange risk Sensitivity and its Determinants : a firm and Industry Analysis of US Multinationals". *Financial Management*, Vol24 (1995): 77-88

Ceglowski, J. "Dollar Depreciation and Us Industry Performance. *Journal of International Money and Finance*, Vol 8 (1989): 233-251

Geurts, Michael and I.B. Ibrahim. "Comparing the Box-Jenkings Approach with the Exponentially Smoothed Forecasting Model Application to Hawaii Tourists". *Journal of Marketing Research,* Vol 12 (1975): 182-188

Fang, Hsing and Jean C.H. Loo. "Foreign Exchange Risk And Common Stock Returns: A Note on International Evidence". *Journal of Business Finance and Accounting*, Vol 23(1996): 473-480

Gibbons, Jean and Mary Fish. "Devaluation and US Tourism Expenditures in Mexico". *Annals of Tourism Research.* Vol 12 (1985): 547-561

Jorion, P. "The Pricing of Exchange rate in the Stock Market". *Journal of Financial and Quantitative Analysis* ",Vol 26 (1991): 363-376

Loeb, Peter D. "International Travel to the United States: An Econometric Evaluation".*Annals of Tourism Research,* Vol 9 (1982): 7-20

Luehrman, T. A "Exchange rate changes and the distribution of Industry value" . *Journal of International Business Studies*, 4Th Quarter (1991): 619-649

Martin, Christine and Stephen Witt. " Accuracy of Econometric Forecasts of Tourism". *Annals Tourism Research*, vol 16 (1989): 407-30

Pindyck, R.S and D.L. Rubinfeld. *Econometric Models and Economic Forecast*. 3rd edition, 1991

Shapiro, A.C. *Foundations of Multinational Financial Management*. 2nd edition, 1994

Sheldon, Pauline. "Forecasting Tourism: Expenditures versus Arrivals". *Journal of Travel Research*, Summer 1993: 14-20

Sheldon, Pauline and Turgut Var. "Tourism forecasting: A Review of Empirical Research".*Journal of Forecasting*, Vol 4 (1985):183-195.

Statistics Canada. "Travel between Canada and other Countries".

Qiu, Hanqin and Junsen Zhang. "Determinants of Tourist Arrivals and Expenditures In Canada", *Journal of Travel Research* . Fall 1995: 44-49

Witt, Stephen F. "Cash Flow Forecasting In the International Tourism Industry". *Advances in Financial Planning and Forecasting*, Vol4, Part II(1990):229-244