**ECONOMICS**

Section I.

Introduction:

The region of Caribbean is exceedingly dependent upon the tourism sector. In many nations, the importance of the tourism industry surged steadily. It is because the clichéd preference upon agricultural trade is dismantled. Gradually tourism became the dominant sector, and presently it accounts for a lion's share of the nation's Gross Domestic Product (GDP) for most of the sixteen nations. Shares and receipts of the Gross Domestic Product of the Caribbean nation above eight percent are St. Vincent & the Grenadines (13%) Dominican Republic (8%), Barbados (24%), St. Kitts & Nevis (13%), Grenada(14%), Dominica (20%), Jamaica (15%), St. Lucia (25%), Anguilla (37%), Belize (19%), The Bahamas (27%). The non- tourism based regions are excluded in some portions of the empirical study; that have its share below 8%. These are Suriname (1%), Haiti (3%), and Guyana (4%) and Antigua & Barbuda (26%) (Baldwin, 2000).

This sector is, of course, the pivotal driver of economic growths and employments and the sources of the governments' revenues. Lately, however, rates of growth in arrivals of the tourists have stalled, and this region's share of the world market had been shrinking. Moreover, many nations of the Caribbean are facing noteworthy macroeconomic imbalances as the growths had slowed and the public finance had been deteriorating. Thus, there happens to be a stronger interest to understand that which drives the tourism flows. The aim of the study is finding out what attracts the tourists to this part of the world (Caribbean) and whether these have altered since the Global Financial Crisis (GFC); how nominal costs of visits to Caribbean islands is compared to a beach holiday in other parts of the globe. The better understanding of what drives the tourism flow, lately, should help in informing the strategies to reinvigorate this sector and ultimately strengthen its contributions to the process of growth. The scopes of the study are the tourism flows, and this does not consider impacts of this sector on the broader economy, nor aiming to quantify non-price factors driving tourism choices (Strobl, 2012). The paper's contribution to the literature is threefold, firstly, revisiting determinants of tourism and exploring newer factors like impacts of rivals from European periphery; secondly, investigating extents to which Recession and Global Financial Crisis (GFC) might have altered the demands of tourism and lastly, it introduces a concept of ‘week at the beach' (index) for comparing the nominal costs of analogous tourism items across various beach destinations in the globe. This expands on Mwase's works that explored impacts of low-end and high-end destinations upon tourism flows; examining income elasticities and prices of various products. We are not aware of (any) other studies which differentiates between kinds of destinations. Data from 2000-2013 time frame for 16 Caribbean nations has been taken into consideration; paper finds income factors and prices generates momentous impacts upon tourism expenditures and tourism arrivals; although price elasticity is viewed to be statistically insignificant for the high end destinations.

The simple static comparisons in 2014 of ten Caribbean nations and eighteen beach holidays destinations in the globe (including Puerto Rico and Cancun) found that nominal costs of the ‘average' beach holiday in the region is greater than the other parts of the globe. The results suggest non-price factors will need to be superior for ensuring that marginal costs of holidays in the Caribbean do not surpass marginal benefits (Spencer, 2015). The index is based on some components; firstly, average room rates of 3-star hotels from 1 common service; secondly, taxi fares between hotels and airports and lastly, three meals per day; 2 liters water, one coffee, and one beer. The paper starts with a brief literature review under Section II. The Section III shall provide stylized facts about tourism trends after the Global Financial Crisis (GFC). A Section IV to VI presents empirical works as well as static relative prices index. The previous is based on the dynamic panel regression, attempting to identify the chief determinants of and trends in the tourism expenditures and arrivals over the period of fourteen years (includes by types of the destinations). Secondly, it is experimented with ‘simple-relative-price-index' which contrasts the nominal ‘on the ground costs' of the holiday at the beaches anywhere around the globe. This index copies the "Big Max Index economist notion but does not go far as inferring the underlying valuations of the real exchange rates (Craigwell, Greenidge, Codrington & Worrell, 2003). Rather its aim is providing snapshots in times only of prices of comparators; as one part of the efforts for gathering information on factors driving the consumption behavior of tourism.

Section II.

Literature Review:

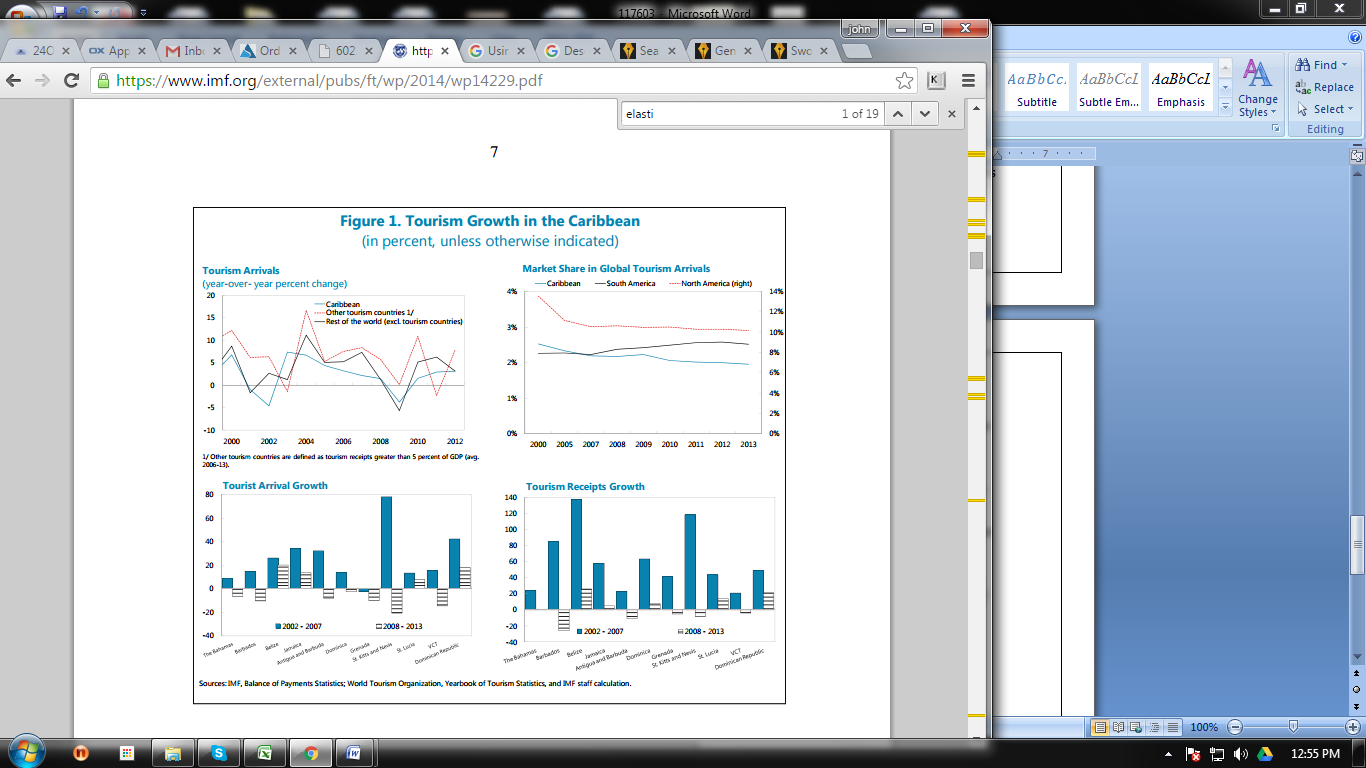
There are abundant researches on Caribbean tourism. This study focuses on studies that explore determinants of the tourism flows and tourism competitiveness. Starting with empirical works in global tourism, Culiuc found that the Organisation for Economic Co-operation and Development (OCED) nations exhibited loftier elasticities with respect some economic variables, namely, Gross Domestic Products (GDP), bilateral trade and real exchange rates in portions due to larger shares of business travels. However, he found tourism to smaller islands are less sensitive to the real exchange rates alterations but much sensitive to removals and introductions of the direct flights. Romue and Wolfe measured impacts of altering economic conditions of OCED nations on arrivals of tourists to the Caribbean and Latin America. Their estimates view that tourism demands are price sensitive and that varieties of factors that affects costs of tourism could drive the market shares outcome. Estimates show that 1.0 % plummet in costs of the tourism services has been found to rise arrivals of tourists by 1.2% to 1.6%. Brons and others investigated various empirical studies and found for international tourism, the average price elasticities of demand are -0.6 to -0.8; while magnitudes are varied depending upon numbers of methodological factors. Archibald and Associates argued long terms trends in the arrivals could be influenced by alterations in capacities and prices of tourism in a destination about a source nation and other destinations.; also the fluctuations in airfares and exchange rates (Wolfe & Romeu, 2011). The result exhibits that 1.0% hike in the destination prices about source markets plunged the arrivals by 0.1%. Tsounta showed tourism arrival is momentously affected by a source nation's economic developments; also external shocks and price considerations while supply ingredients like numbers of airlines servicing tourist destinations, developments in FDI (Foreign Direct Investments) happens to be major components of tourism demands (Tsounta, 2008). Tsounta estimated income elasticities per Gross Domestic Products of source nations happen to be 1.5 and price elasticities is -1.3 (source market-based real -effective exchange rates).

On the contrary, Mwase argued that tourism flows in the Caribbean is income elastic with exception of flows from the UAS and Spain but are not so much sensitive to alterations in prices. Bolaky opined that depreciations of real exchange rates can raise tourism competitiveness; only related to stay-over arrivals of the Canadian nationals (Bolaky, 2011). When rises in costs of transports are connected to oil price surges, there is a plummet in stay-over arrivals; especially from the UK and Canada. Jackman and Greenidge found the natures and structures of tourism demands for the Barbados have matured, and income elasticities of US, Canada and US and CARICOM has become minor over time (Jackman & Greenidge, 2009).

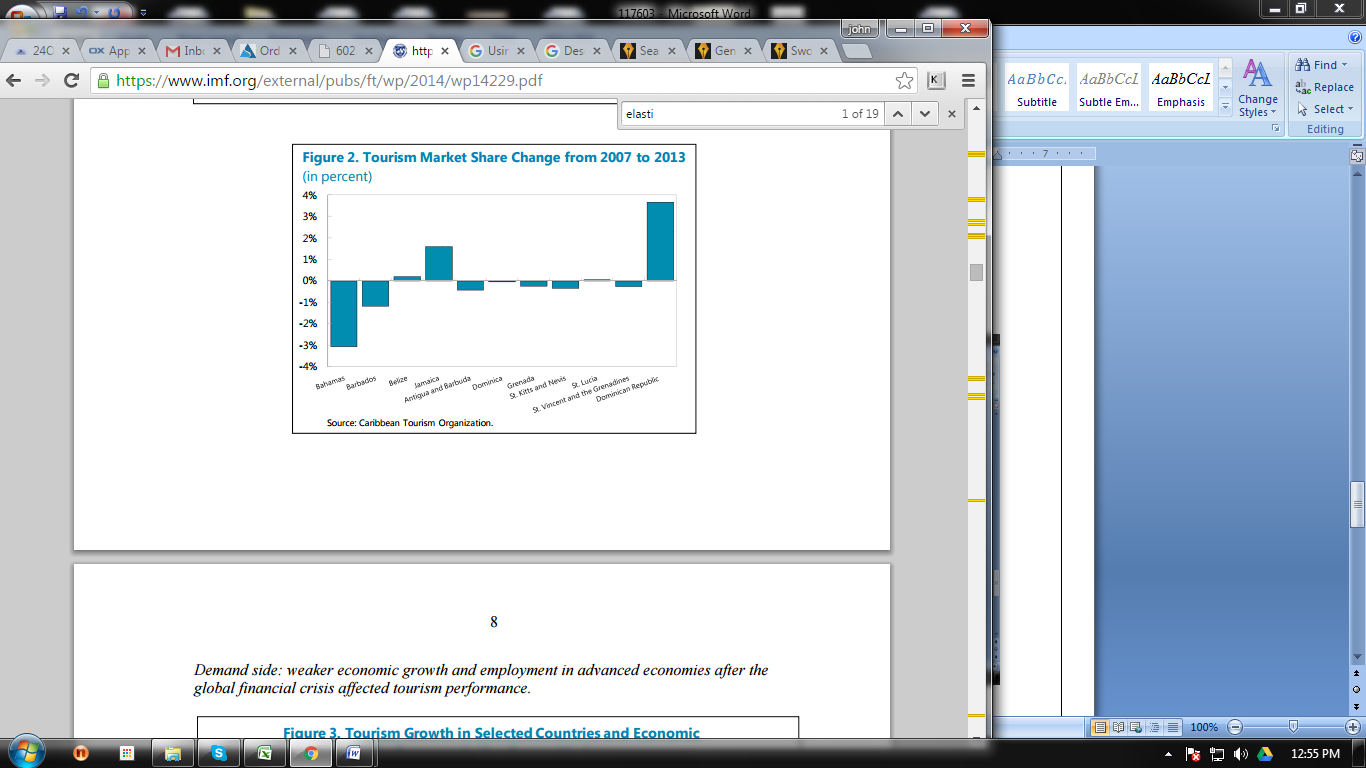
Section III.

Performances of tourism in recent years:

Solid growth were displayed in the 2000s in the Caribbean tourism; fueled by sturdy growths in major advanced economies and potent inflows of FDI (Foreign Direct Investments). Since the mid of 2008, the world downturn had led to collapses in external demands that significantly the performances of tourism. While there had been some indications of gradual recoveries in recent years' pace of growths had been weaker than in varied regions (Kawakami & Romeu, 2011). Caribbean's share in world tourism market has plummeted continuously; dropping to 2% in 2013 as compared to 2.5% in 2000. This is exhibited in Figure1.

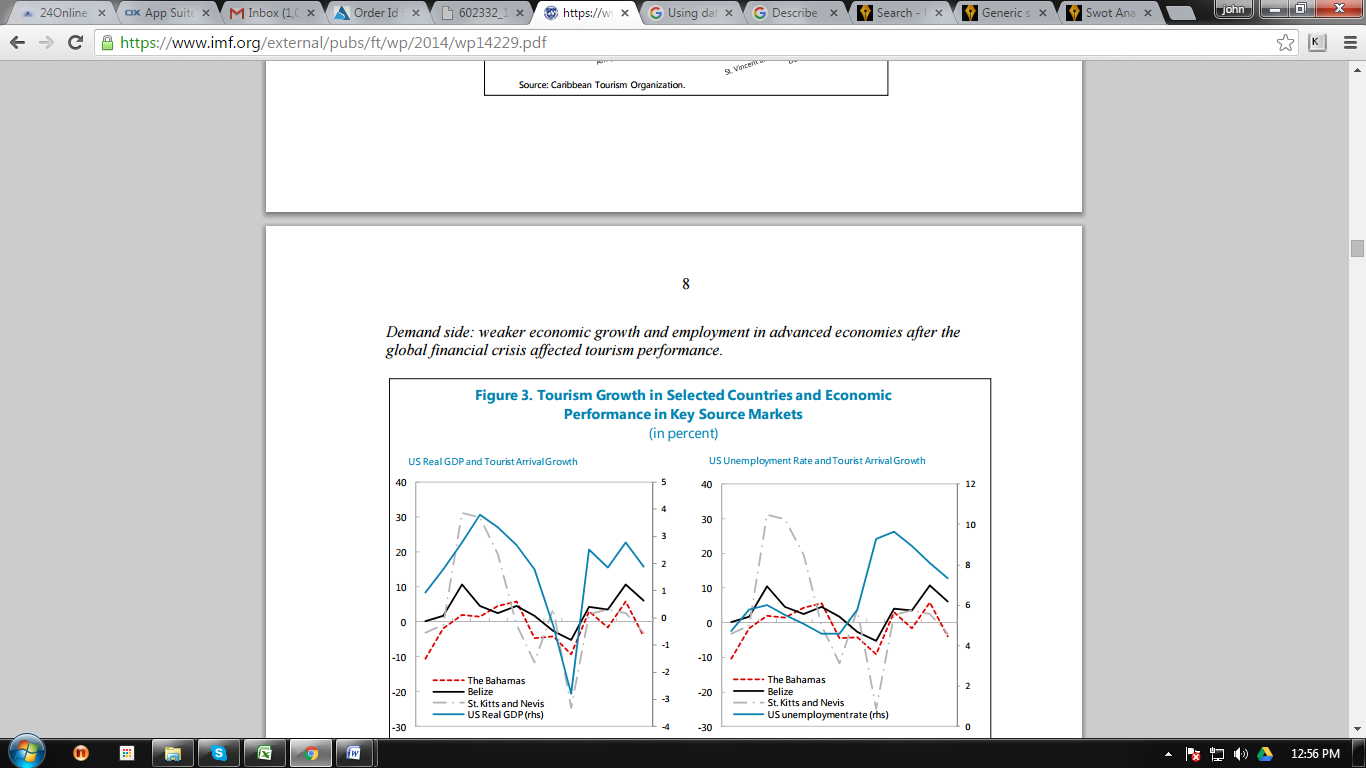


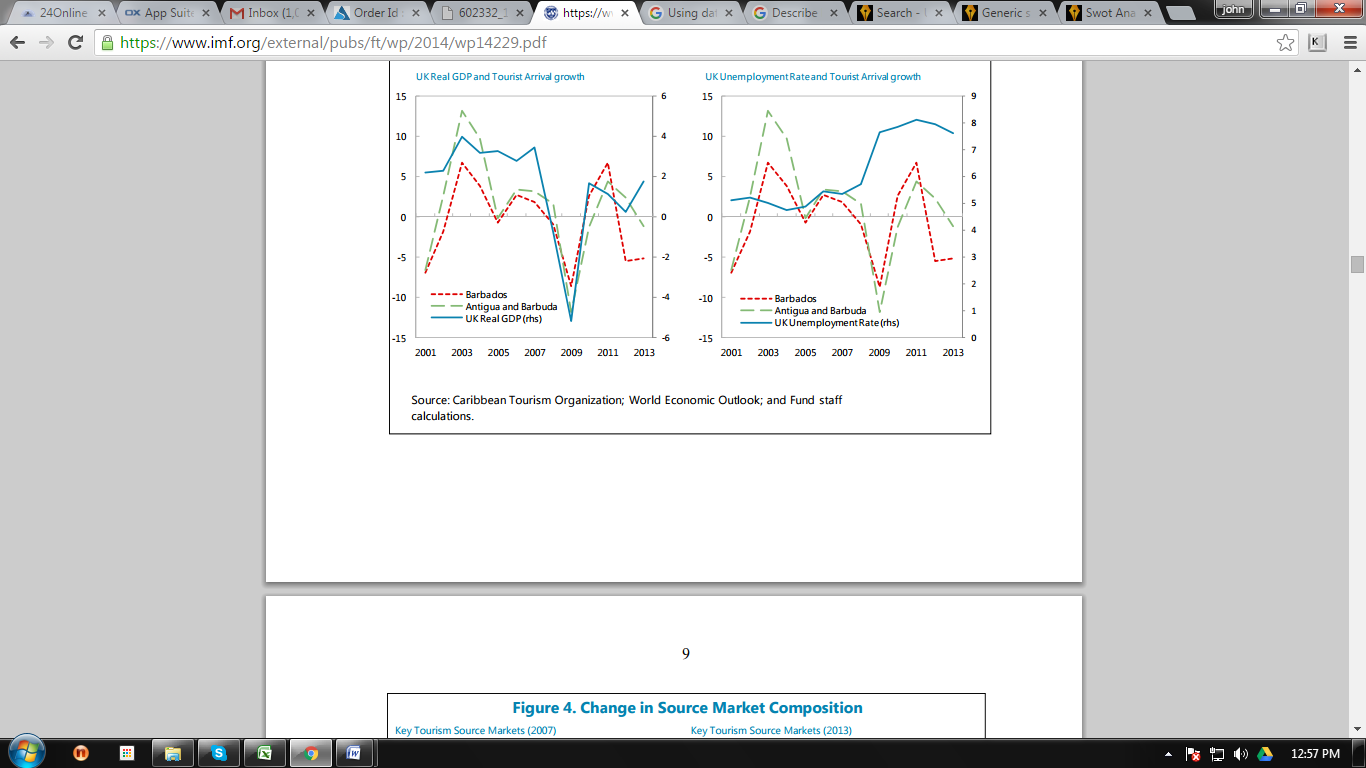
However, within the Caribbean some notable exceptions had been there that had been resilient, Jamaica, Dominican Republic and Belize being on the list (Jackman & Naitram, 2011). This resulted in shifts in market shares with Caribbean region. It is exhibited in Figure 2.

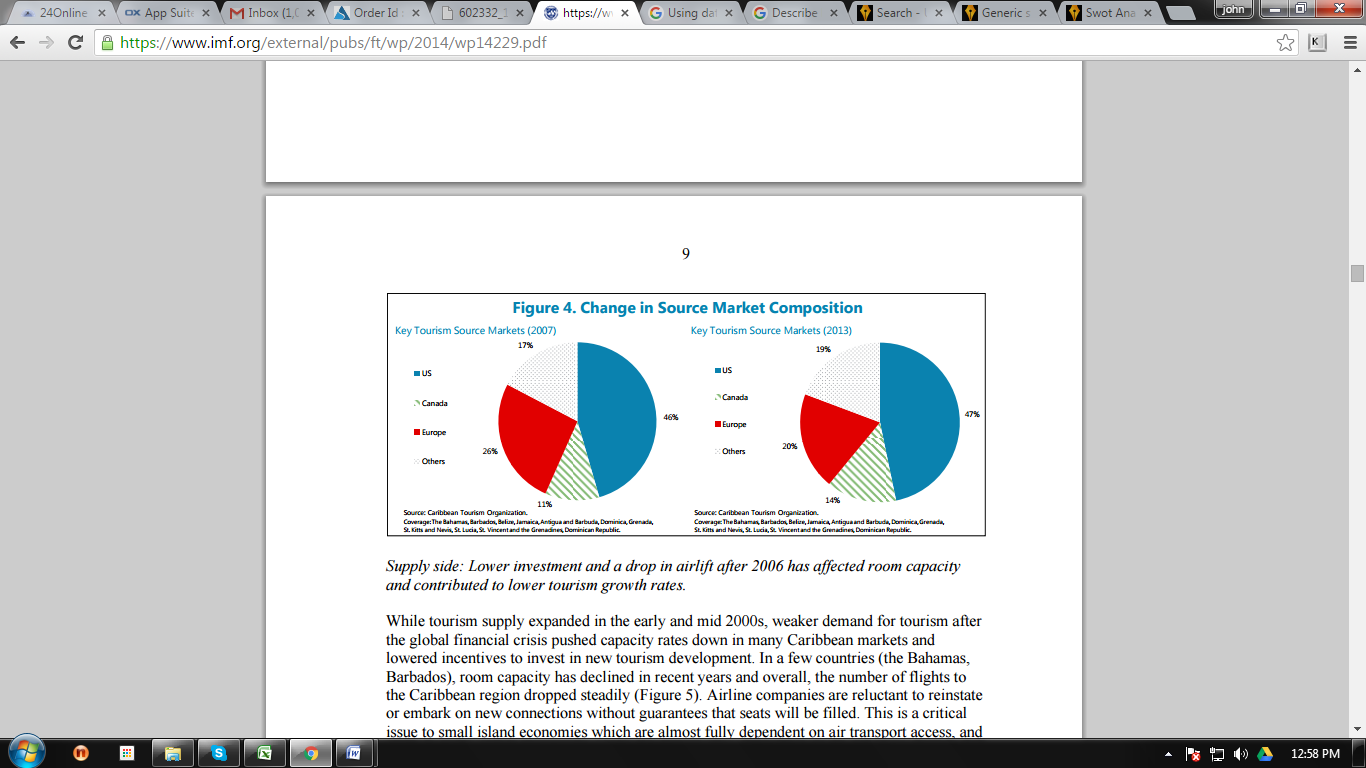


If history is taken into account, economic cycles in advanced nations had been transmitted speedily to the Caribbean via the tourism sector. This relationship is even persistent today in nations dependent upon arrivals of the US nationals. These countries are Saint Kitts and Nevis, Belize and the Bahamas (for Saint Kitts and Nevis, Belize and the Bahamas, the US is the prime market source that represents more than 60% of the total traveler arrivals). This relationship is even persistent today in nations dependent upon arrivals of the UK nationals (Bolaky, 2011). These countries are Barbuda and Antigua (for Barbuda and Antigua, the UK is the prime market source that represents more than 35% of the total traveler arrivals).

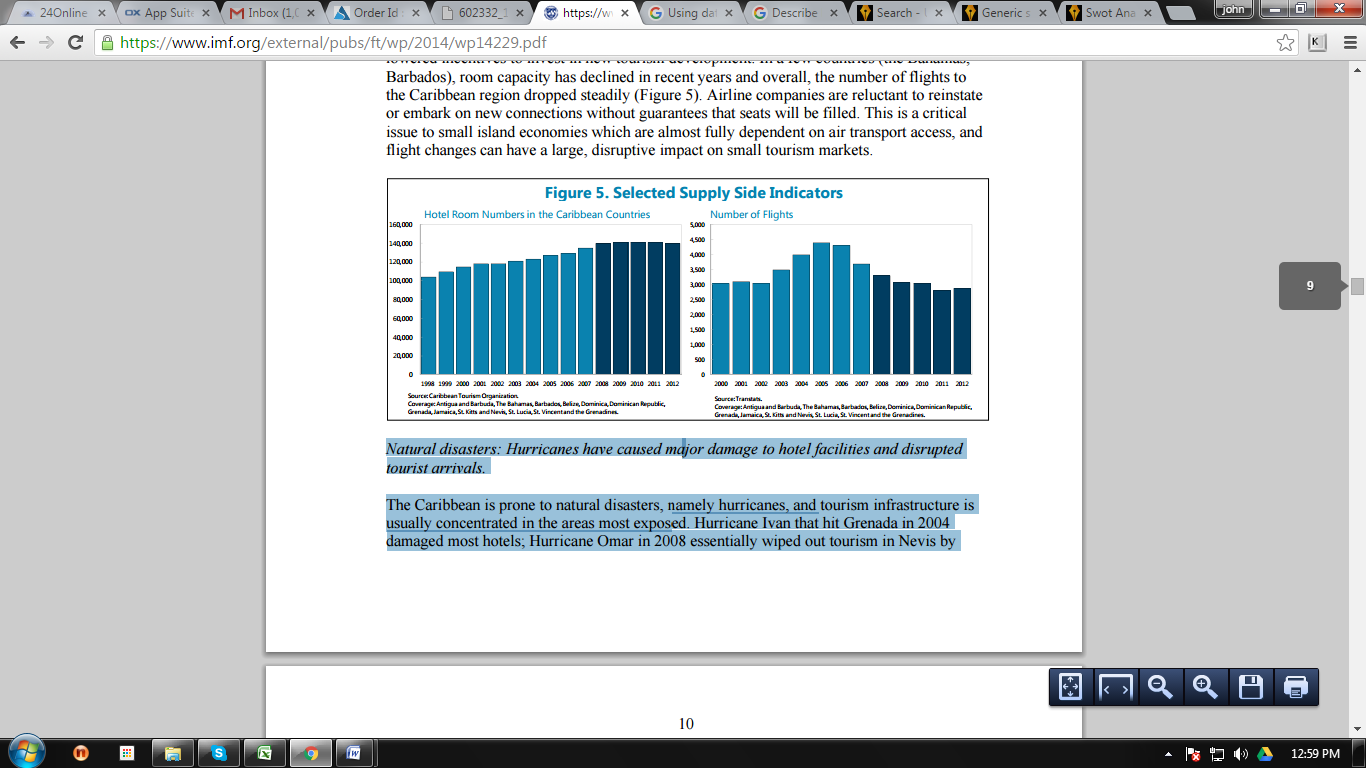
However, profound impacts were left by the Global Financial Crisis (GFC). Outputs contracted sharply in Canada, the US and the UK; unemployment levels surged for many years. The US household net wealth was depressed; tourism arrivals sharply plummeted after the Global Financial Crisis (GFC). It has remained weak till then (Thacker, Acevedo Mejia & Perrelli, 2012). In the Demand side, feeble economic growths and unemployment in stronger economies affected the performance of the tourism sector after the Global Financial Crisis (GFC). It is exhibited in figures below.





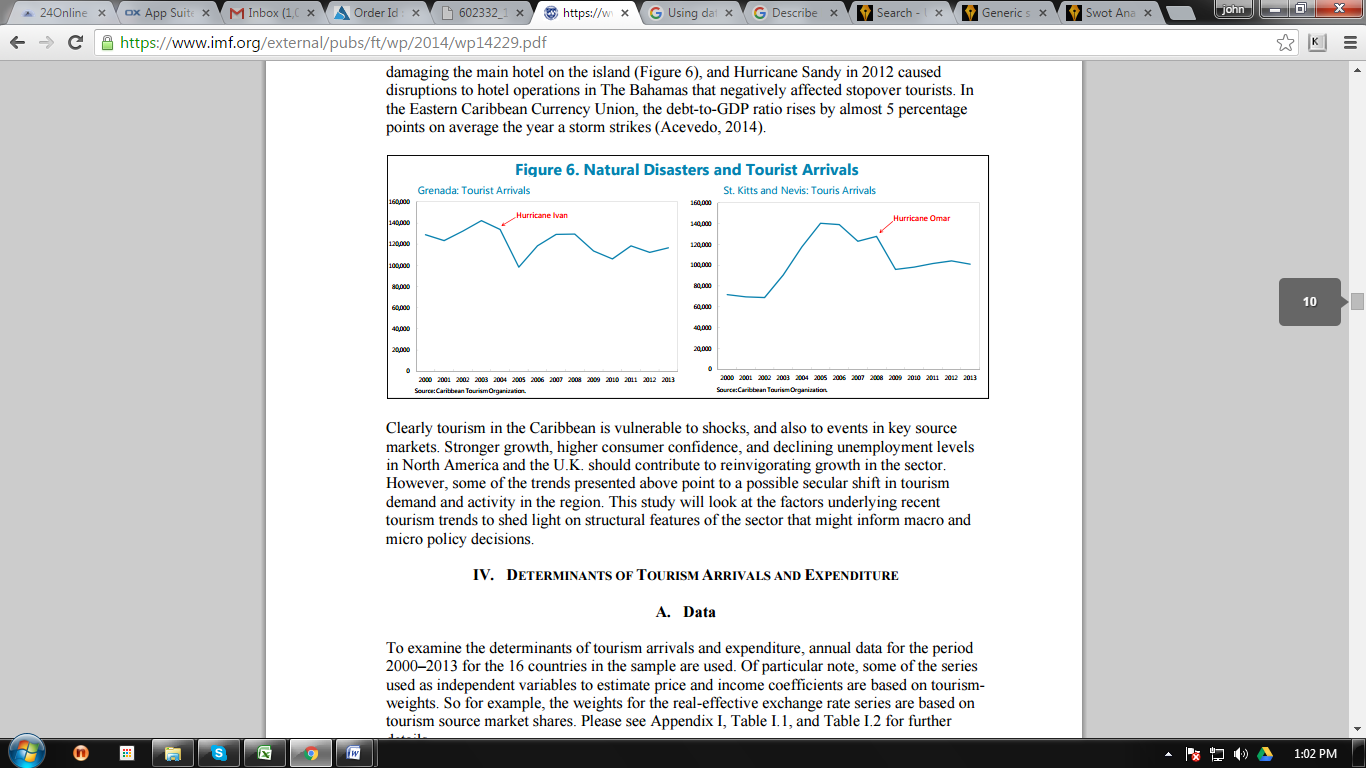


In the Supply side, the decline in airlifts after the year 2006 and lower investments have affected room capacities and have contributed to tourism growth rates that are lower. While tourism supplies are expanded in early and mid 200s, feeble demands for tourism following the Global Financial Crisis (GFC) pushed down the capacities rates in various Caribbean markets; lowered incentives for investments in newer tourism developments (Chintrakarn, 2013). In a few nations like Barbados and Bahamas room capacities plummeted in recent years. Overall all numbers of flights' services to the Caribbean declined steadily. It is exhibited in Figure 5.



Airline organizations had been reluctant for reinstating or embarking on newer connections without guarantee; seats shall be filled (Bolaky, 2011). It is a critical matter to the minute island economies that are almost totally dependent upon air transports accesses, and flights alterations could have a larger disruptive impact upon the smaller tourism markets.

The Caribbean is prey to natural calamities. Natural calamities like ‘hurricanes had caused colossal damages to the facilities of the hotels and had disrupted the arrivals of tourists. Moreover, the tourism infrastructures are concentrated in these most exposed regions. Grenada was damaged by Hurricane Ivan in 2004; also most hotels were severely damaged. The Nevis tourism was essentially wiped out in 2008 by Hurricane Omar; demolishing the major hotels in this region (Mwase, 2011). In 2012, Hurricane Sandy caused many disruptions in the operations of all hotels in the Bahamas; negatively affecting the stopover tourists. The East Caribbean Currency Union's debt ratio surged by 5% on an average, in the year it is stricken by storms (Acevedo Mejia, 2014). It is exhibited in Figure 6.



Tourism in the Caribbean is clearly vulnerable to shocks and also to the events of the main source markets. The Higher confidence of customers, declines in the rate of unemployment, sturdy growths in the UK and North America should contribute for reinvigorating growth in the tourism sectors. However, some trends were shown above points to a possibly secular shift in tourism activities and demand in this region (Hede & Hall, 2006). The study shall look into the factors underlying the recent tourism for shedding light upon the structural textures of this sector which may inform the macro policy decisions and micro policy decisions.

Section IV.

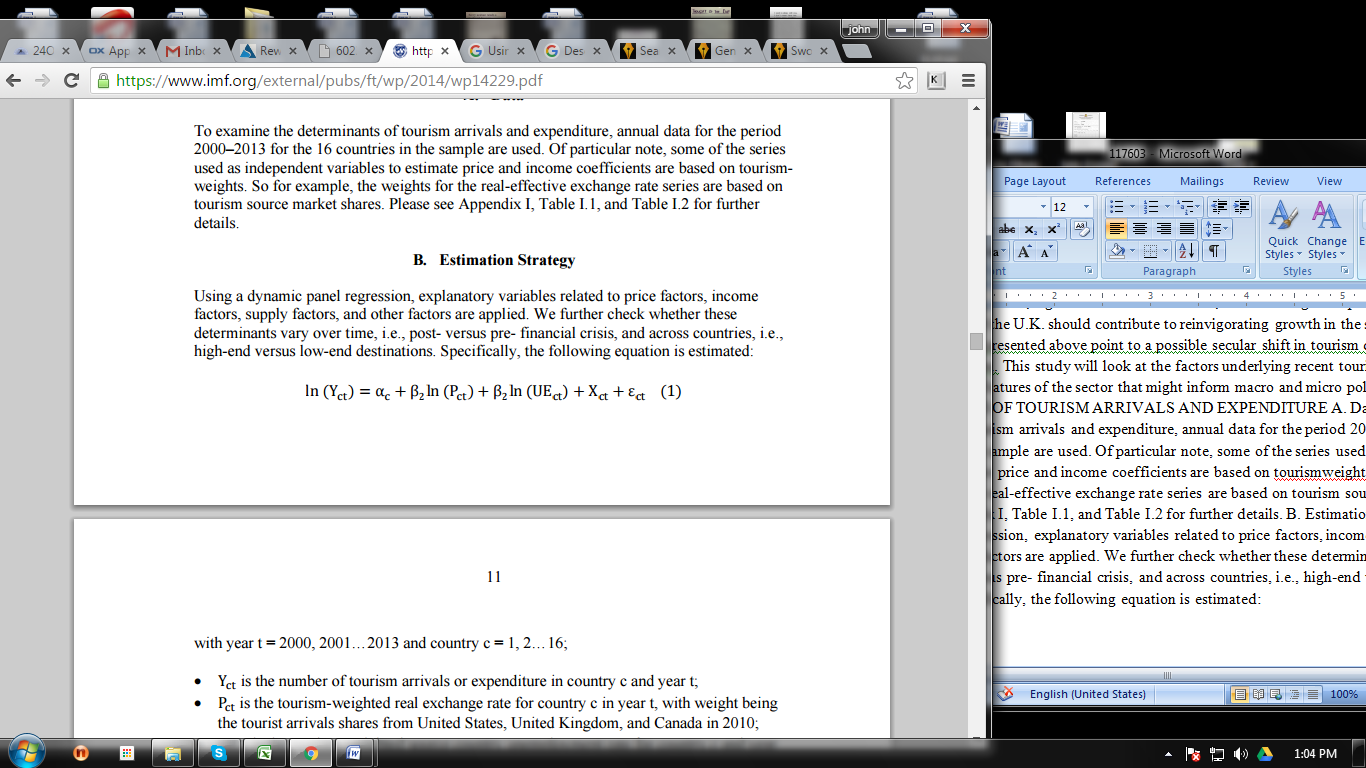
1. Data:

For examining the determinants of the tourism expenditures and arrivals, the annual data for sixteen nations from 2000 to 2013 in the sample is used (Mohan & Strobl, 2013). Some series that are used as the independent variable for estimating income coefficient and prices is based upon tourism weights. For example, the weight for real effective exchange rates is based on tourism sources (market shares).

1. Estimation strategy:

Using dynamic panel regression; explanatory variable connected to supply factors, income factors, price factors and another factor has been applied (Wright, 2013). Further, it is checked whether those determinants varies over time or not, that is post -Global Financial Crisis versus pre- Global Financial Crisis, and across nations; that is low-end destinations versus high end destinations.

In,



2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013= year t.

1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16= country or nation c.

Yct = numbers of tourism expenditures or arrivals in year t and country c.

UEct = tourism weighted source nation unemployment rate for nation c and also year t [both real incomes and unemployment were assessed, results is consistent but results by using unemployment was more robust (Lorde & Jackman, 2013). Unemployment is a potent indicator of an economic environment. In addition, there are little researches assessing unemployment impacts in source nations on the flows of tourism.]

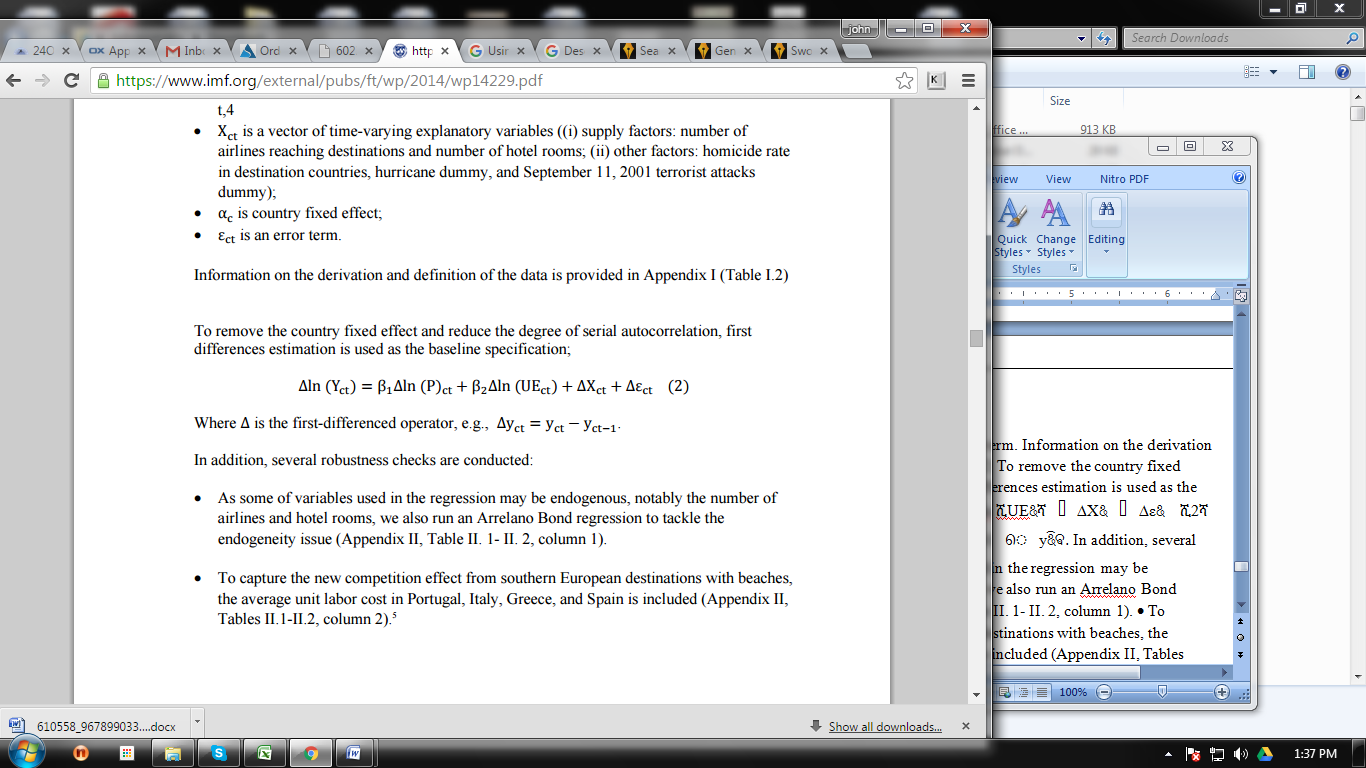
Pct = tourism weighted (real exchange rates) in year t for nations c; weights being tourists' arrivals share from Canada, the USA and the UK in 2010.

αc = nation fixed affect.

Xct = vector of time varying explanatory variable [(i) supply factors, numbers of hotel rooms and numbers of airlines reaching the destinations. (ii) Other factors, hurricane dummy, 11the September (2011) terrorist attacks dummy and rates of homicide in destination nations.

εct = vector of time varying explanatory variable [(i) supply factors, numbers of hotel rooms and numbers of airlines reaching the destinations. (ii) Other factors, hurricane dummy, 11the September (2011) terrorist attacks dummy and rates of homicide in destination nations (Granvorka & Strobl, 2013).

Information on definitions and derivations of data is given in Table 1.2 (Appendix 1). For removing the nation fixed effect and reducing the degree of serial-auto- correlation, 1st difference estimations are used as baseline specifications.



∆ = first differenced operator [example, ∆y+ =yct-yct-1]୲.

Additionally, numerous robustness check is conducted. It is because some variables used in regression might be endogenous, markedly numbers of hotel rooms and numbers of airlines. Additionally, numerous robustness check is conducted. It is because some variables used in regression might be endogenous, marked numbers of hotel rooms and numbers of airlines (Romeu, 2008). Also, the Arrelano Bond Regression is run for tackling the issue of endogeneity. For capturing competitive effects from cruise travelers, we control numbers for cruise travelers (it is exhibited in column 3 of Tables 1 to II.2 of Appendix II). For the substitute price factors in destinations, the two proxies have been used; UN per diem rate (exhibited in column 5 of tables II. 1 to II.2) and Rogoff measure of the exchange rates misalignment (exhibited in column 4 of table II.1 to II.2). For substitute income factors, three proxies have been used; tourism weighted source nation real Gross Domestic Product per capita (it is exhibited in column 6, Table II.1 to II.2); the USA households' net wealth (exhibited in column 8, Table II.1 to II.2) ; and Tourism Weighted Unemployment Gap (with the HP filters). It is exhibited in column 8, Table II.1 to II.2). As nation fixed effects the model captures the all time variant nation specific characteristic (includes distance; we have not used rates of unemployment and distance weighted real Gross Domestic Product per capita (Mwase, 2013). For focusing on the tourism-dependent economies, nations where tourism sector shares of the Gross Domestic Product was less than 5 % in the year 2010 are excluded (examples are Guyana, Surinam, Trinidad and Tobago and Haiti).

The post- Global Financial Crisis versus the pre- post- Global Financial Crisis:

Heterogeneous effects across nations and over time are also checked, specifically the post- Global Financial Crisis versus the pre- post- Global Financial Crisis. For checking whether income elasticities and prices had changed since the post- Global Financial Crisis, samples are split into two periods, pre- post- Global Financial Crisis (before the year 2008) and the post- Global Financial Crisis (after the year 2008).

The lower cost destinations versus the high end destinations:

For checking whether nations with varied characteristics has varied income elasticities and varied prices, samples are split into lower cost destinations versus high end (that is luxuries). 2 possible criteria have been used for classifying the low cost nations versus the high-cost nations; namely, four – five star hotels as shares of the whole [based upon ratios of four to five star hotels in the year 2014, with threshold of thirty percent; high end destinations were Saint Kitts and Nevis, The Bahamas, Anguilla, Barbados]; secondly, and Gross Domestic Product per capita. Both criteria can be said to reflect a host nation's ability for providing service required for supporting high end passengers and providing the infrastructures (Mwase, 2013).

Empirical results:

Overall both income factors and prices were found to have massive impacts on tourism expenditures and arrivals.

Price factors:

The 10% appreciation of tourism weighted real exchanges rate are connected with the 0.16% fall in the arrivals and the 0.1% fall in the tourism expenditures in a baseline specific (2000 to 2013, the table I). The results are broadly consistent with the literature of Mwase in 2013 and Culiuc in 2014. However, price elasticities had become marginally immaterial after the Global Financial Crisis (table 2). Amusingly, the price elasticities have been found to be insignificant statistically for the high end destinations (Table 3). It is suggestive of the fact that not surprisingly, the destination attracts travelers who are less sensitive to price factors (Laframboise, Mwase, Park & Zhou, 2014). Intuitively, tourists to the high end destinations may be lesser sensitive to real effective exchanges rates (prices) alterations as tourists preferences typical of the higher income travelers suggests the greater willingness for paying lofty marginal costs for maximizing the utilities for the given product of tourism (Culiuc, 2014).

Income factors:

A 10 % surge in tourism weighted unemployment rates shows a 2.1% fall in the arrivals of the tourists; and a 3.7% declines in expenditures in baseline specifications of 2000 to 2013 (Table 1). The income elasticities became smaller post- Global Financial Crisis (table 2). The findings exhibited that arrivals in the Caribbean are very sensitive to the economic conditions in the source nations (Brons, Pels, Nijkamp & Rietveld, 2002).

Supply factors:

The numbers of airlines had a statistically positive impact on the expenditures and arrivals of tourism. The numbers of the hotel rooms were found having significant impacts on tourism expenditures or arrivals in the Caribbean; either for low cost or the higher end destinations (Table 1). For addressing concerns of the reverse causality, numbers of the airline and hotel rooms lagged by one year were also tested; the results being similar (Emilio Pantojas García, 2008).

Other factors:

Both the 11th September terrorist mayhem and the hurricane had negatively and significantly impacted the expenditures and arrivals of tourism (Estevão & Tsounta, 2011). But tourism expenditures and arrivals were not sensitive to the homicides rates (Table 1).

Caveats:

There might be some nation-specific time-varying variables that are omitted; for example, the service qualities of the destinations and competition effects from varied other regions of Caribbean. It was difficult to capture all determinants of the tourism (Shabnam, 2014).

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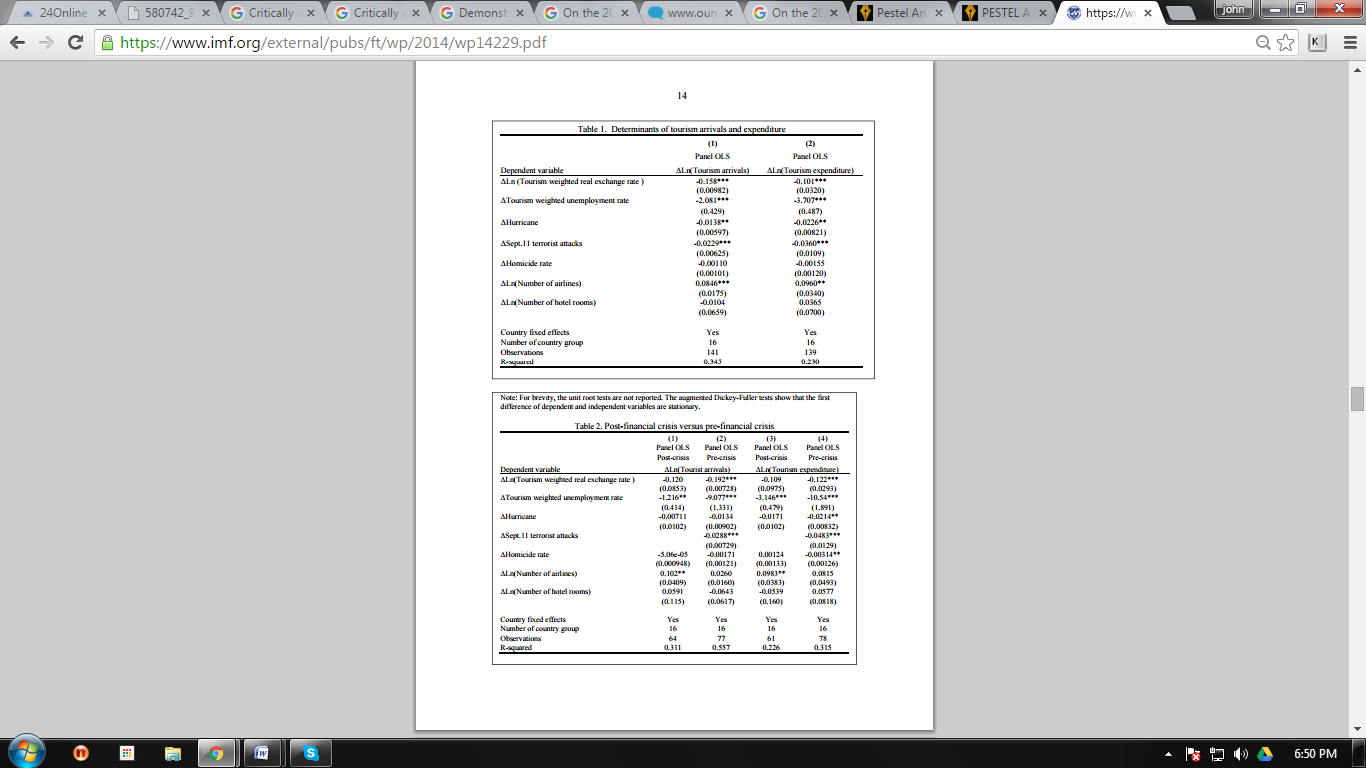
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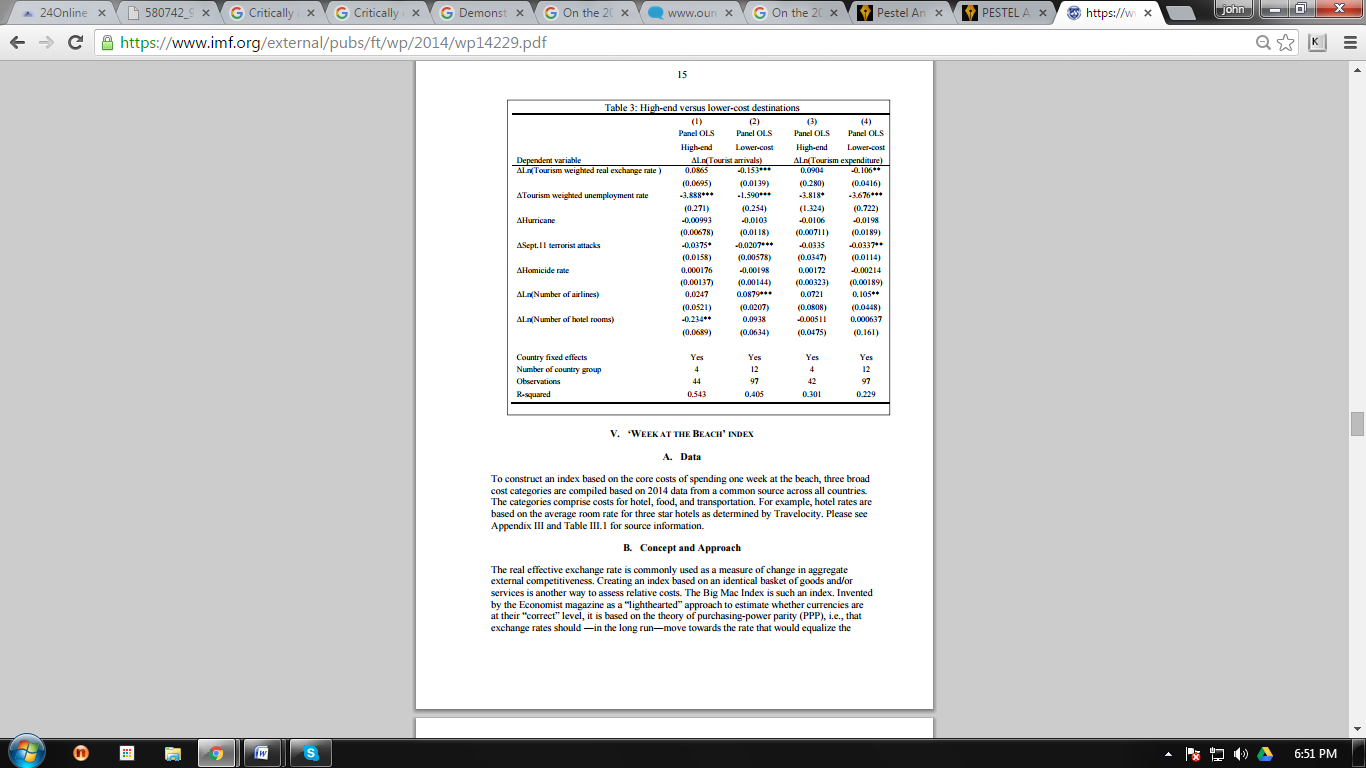
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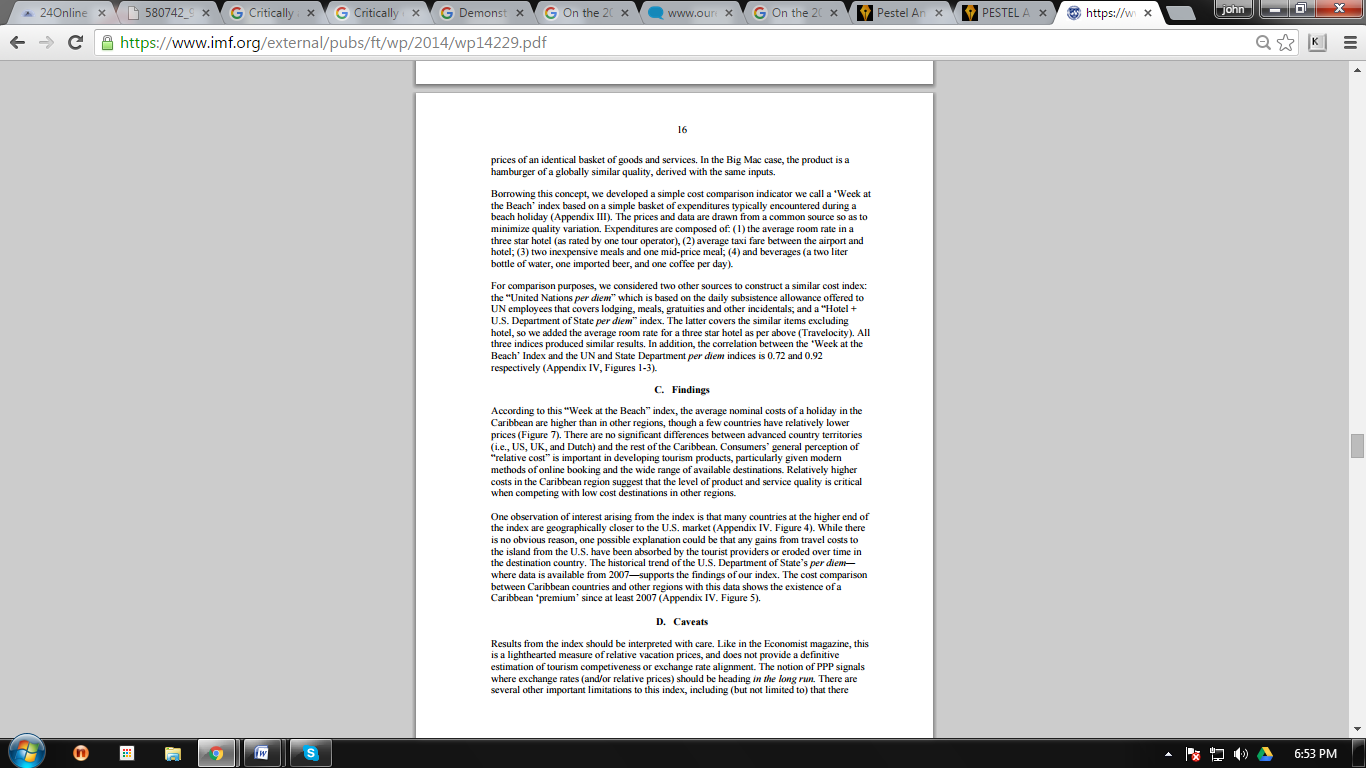
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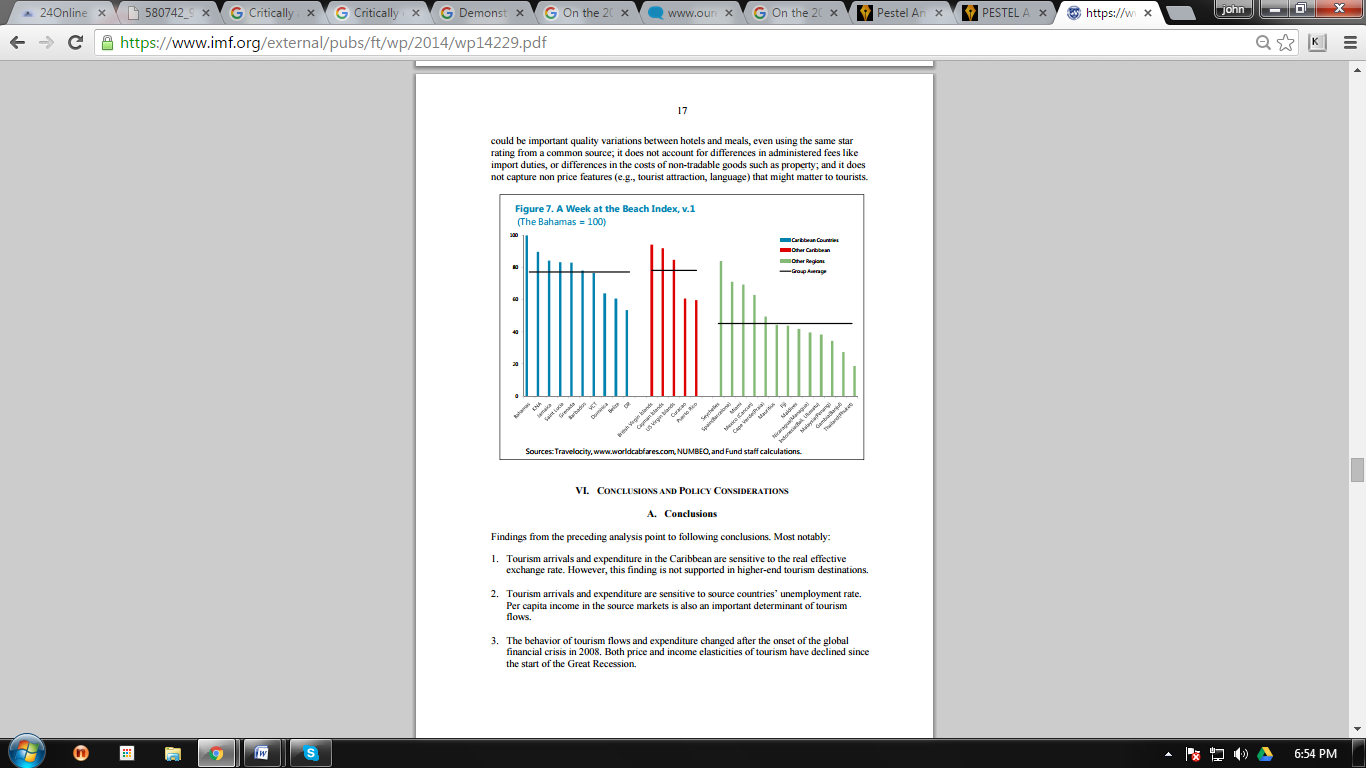
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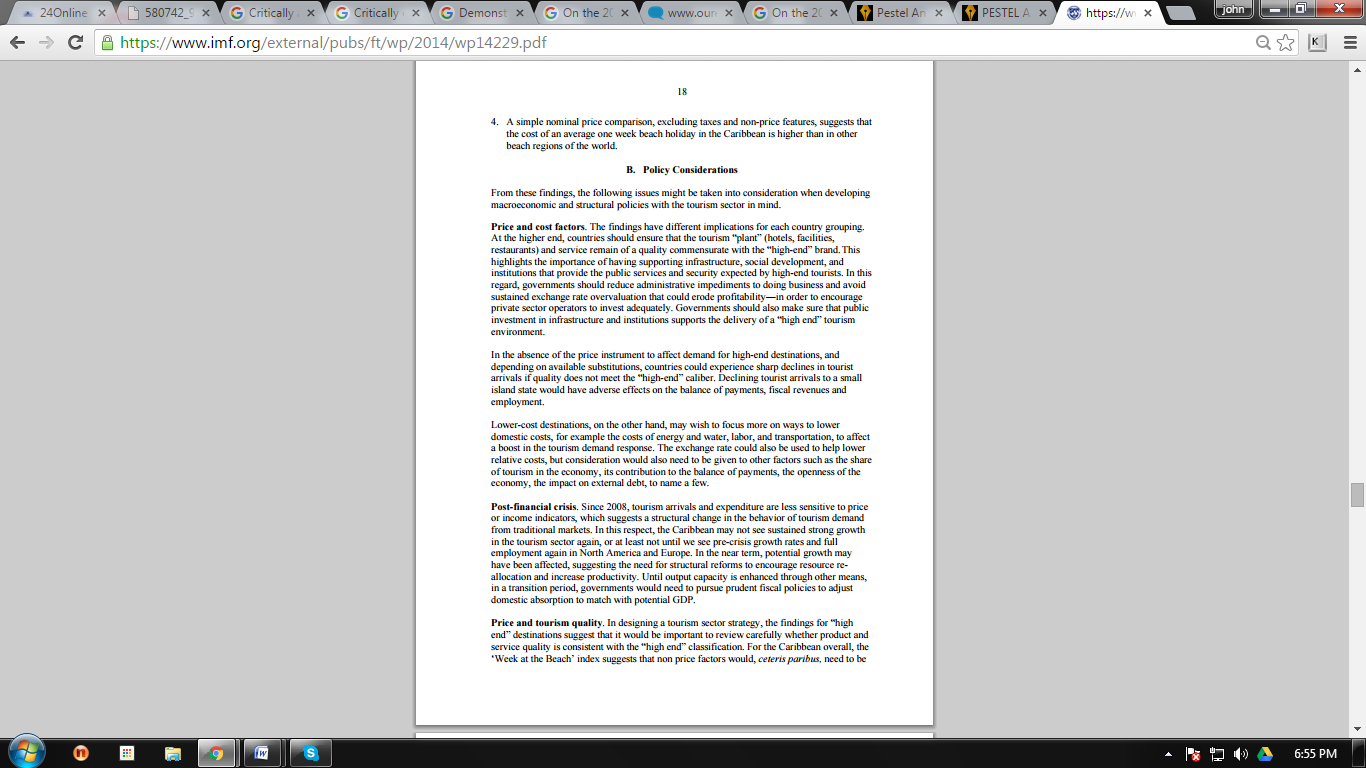
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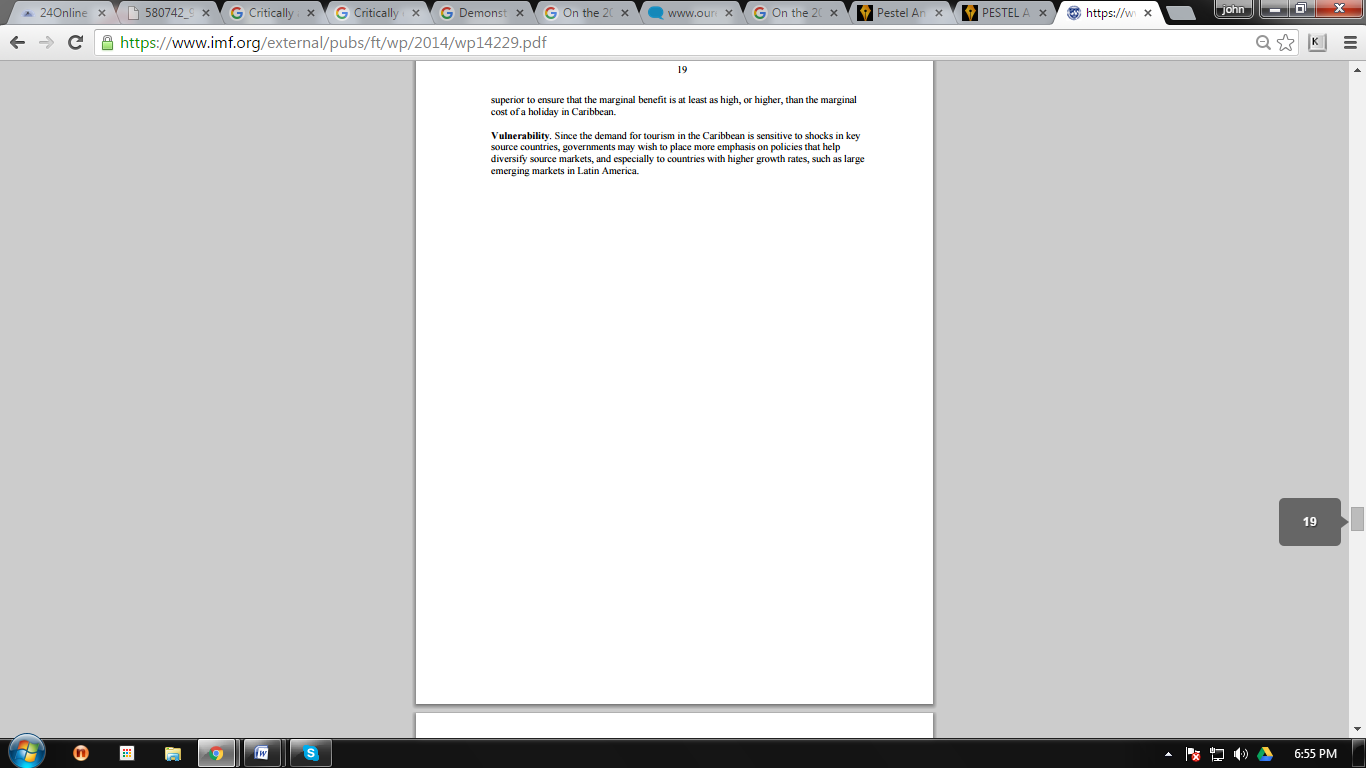


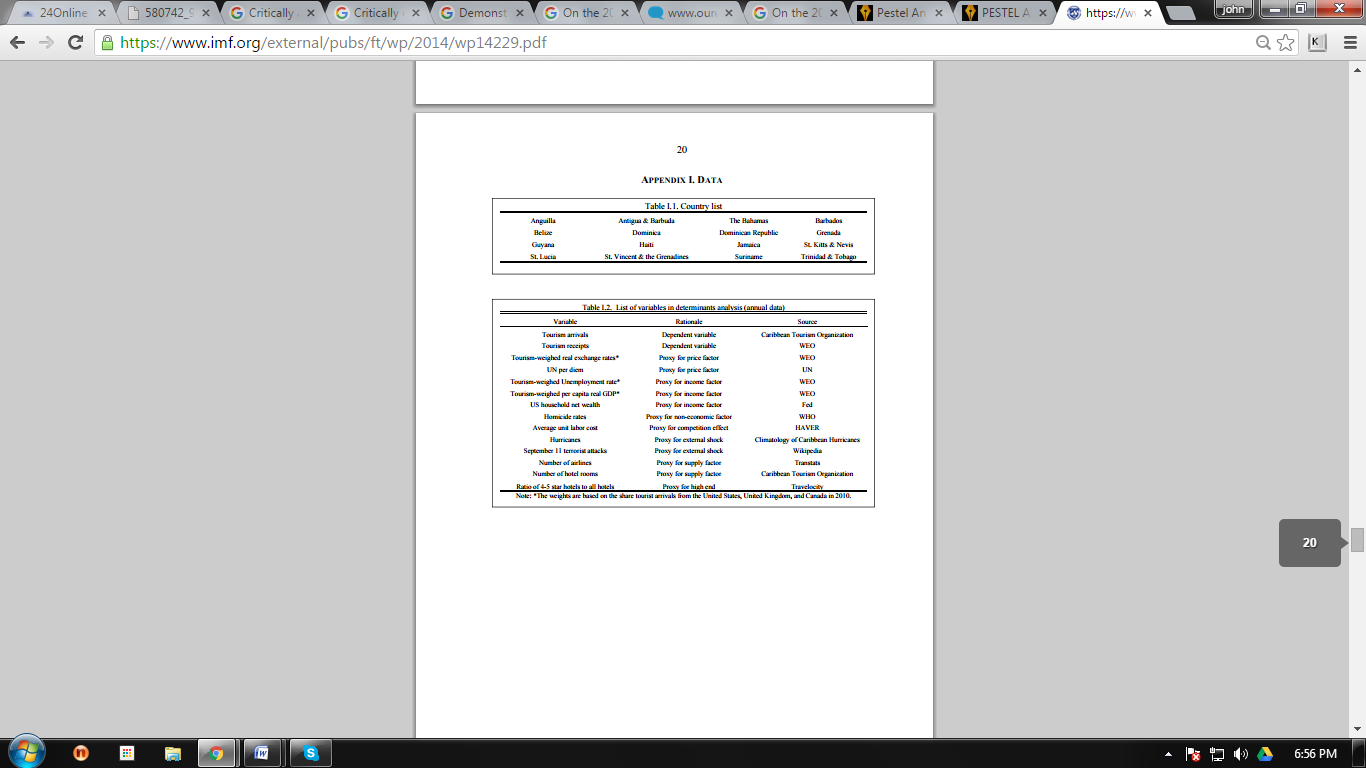


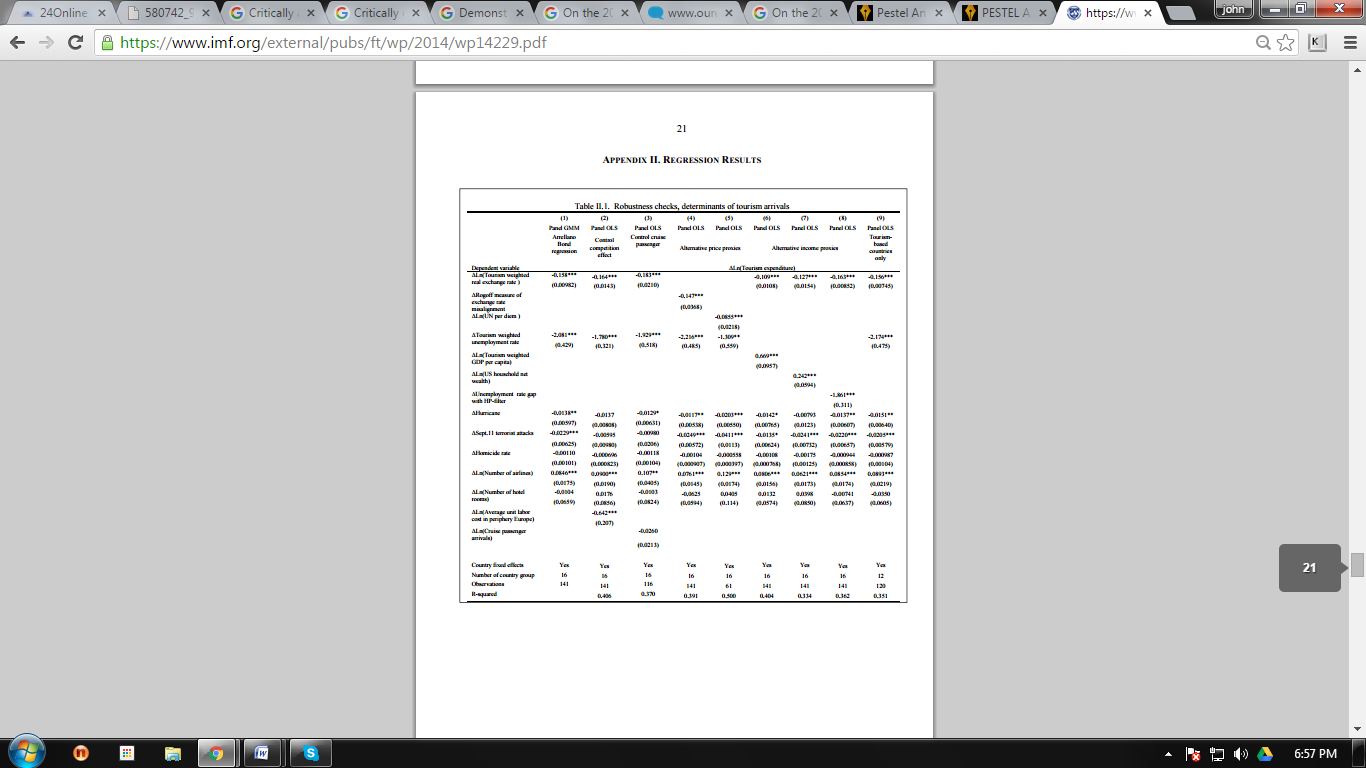


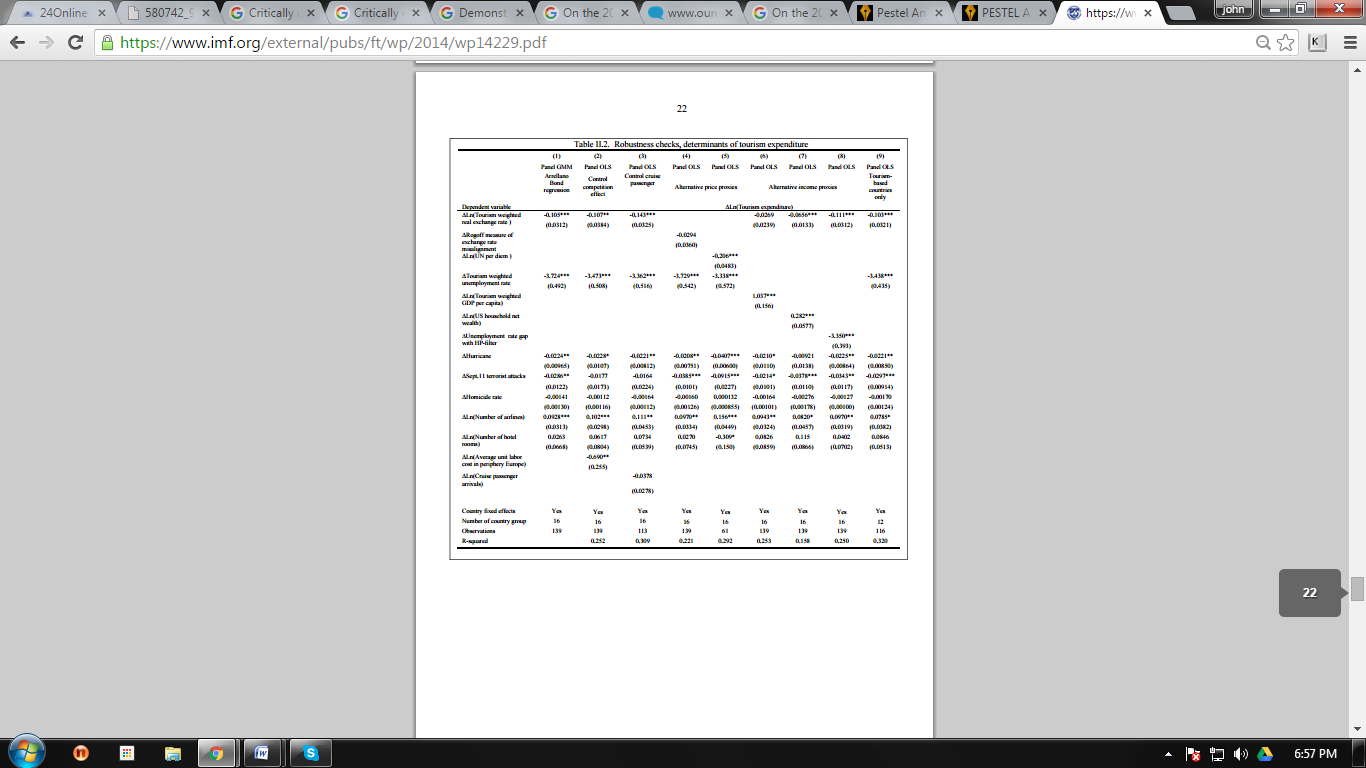


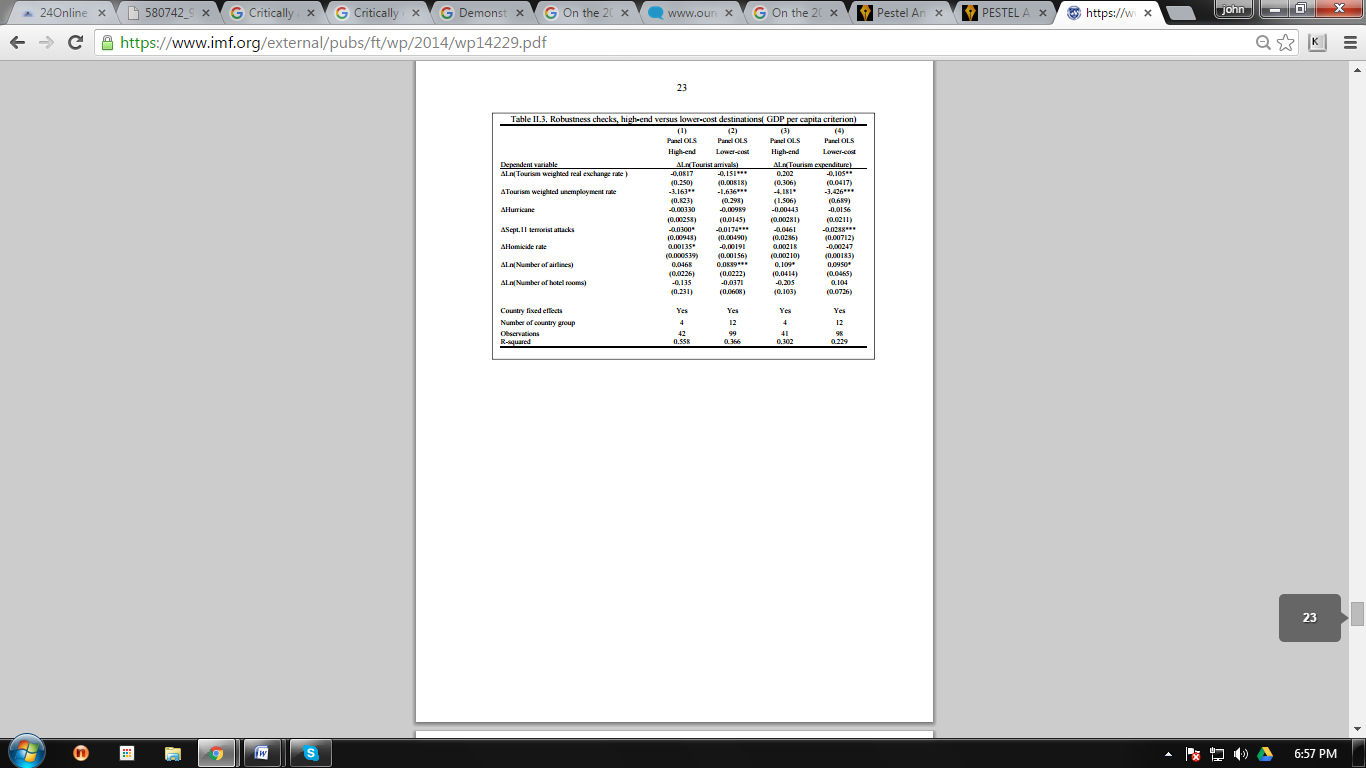


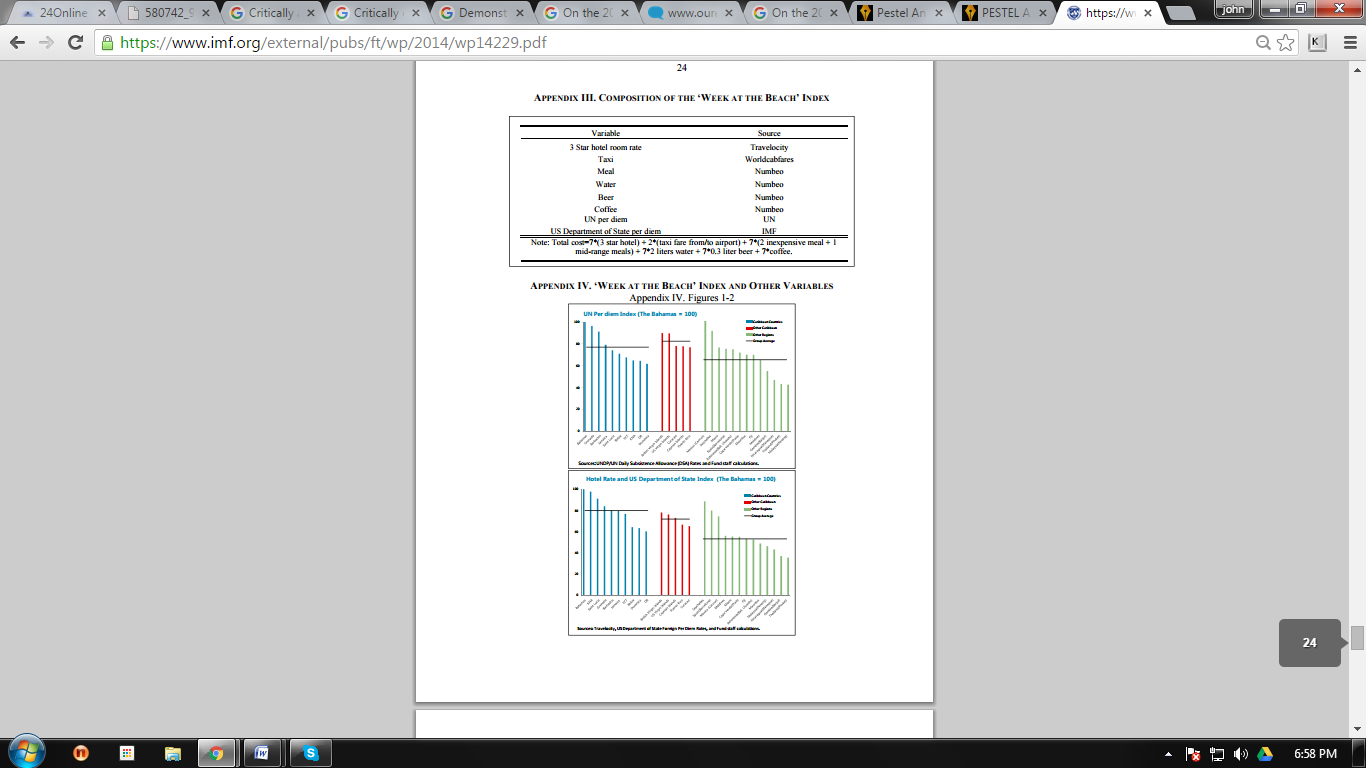


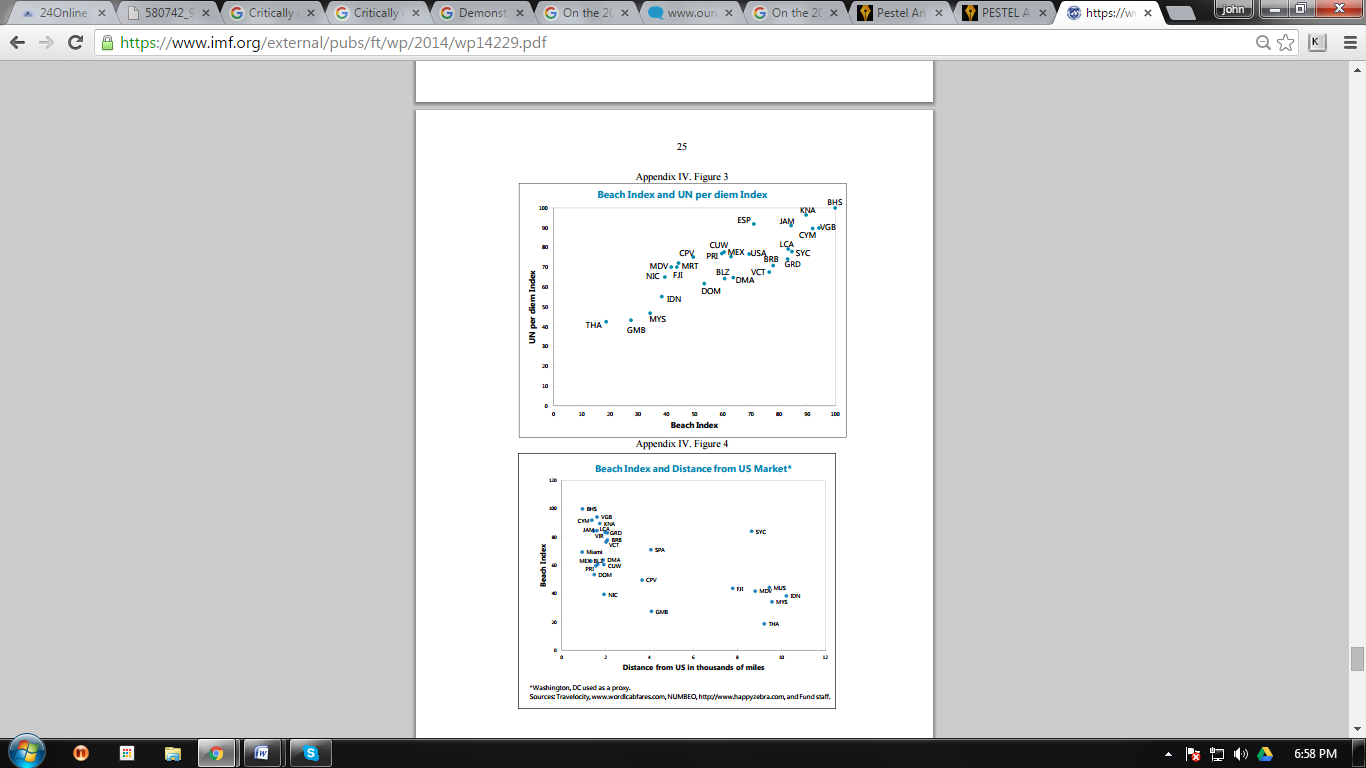


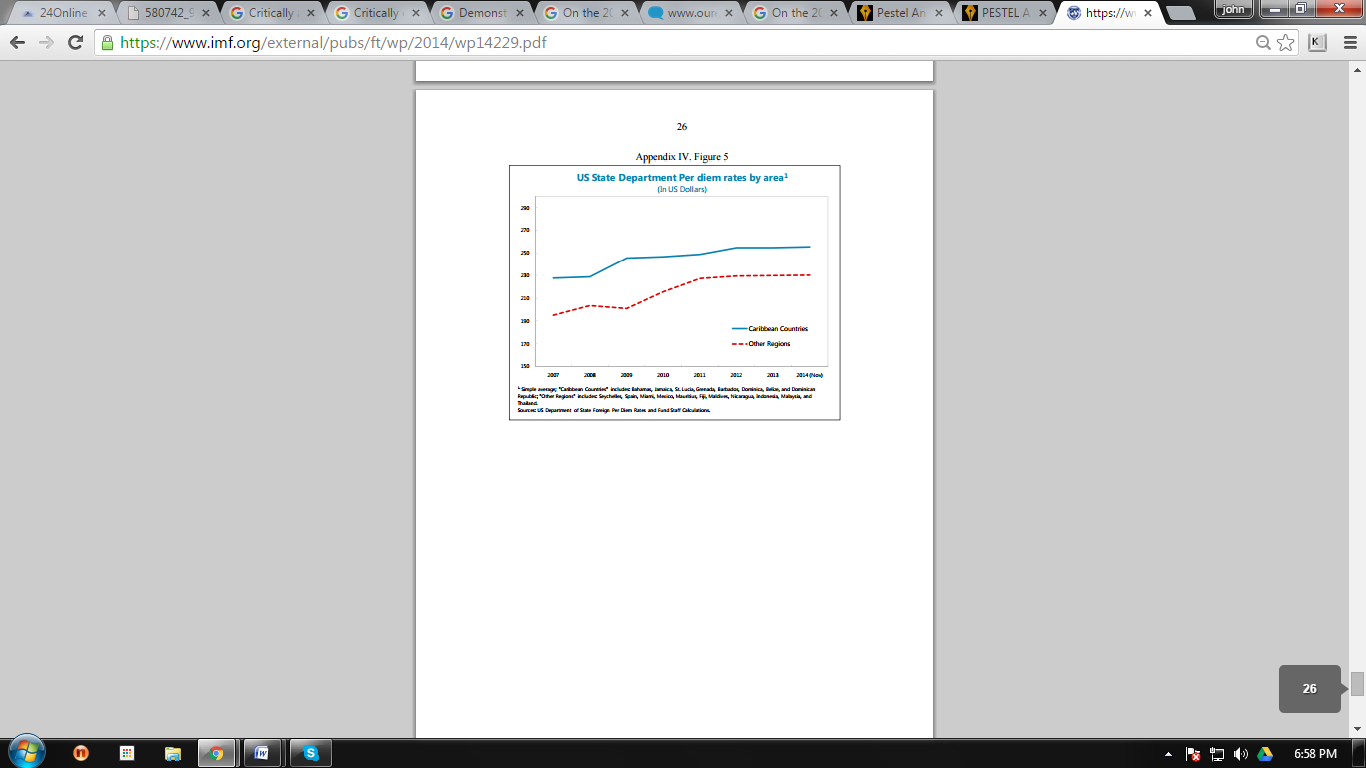












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