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**METHODOLOGY PAPER**  
**of**  
**ANTIGUA AND BARBUDA**

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*United States – Measures Affecting the Cross-Border  
Provision of Gambling and Betting Services, WT/DS285*

**Recourse by Antigua and Barbuda  
to Article 22 of the DSU**

**31 August 2007**

## I. INTRODUCTION

The purpose of this paper (this “*Paper*”) is to present the methodology used by Antigua and Barbuda (“*Antigua*”) to determine the level of nullification or impairment suffered by Antigua as a result of the failure of the United States of America (the “*United States*”) to comply with the recommendations and rulings of the Dispute Settlement Body (the “*DSB*”) of the World Trade Organisation (the “*WTO*”) in the dispute known as *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services*, WT/DS285 (the “*Dispute*”). The level of nullification or impairment presented in this Paper was determined by an independent, third party group of economic consultants engaged by Antigua for that purpose.

During the pendency of the Dispute, and indeed particularly since the end of the “reasonable period of time” given the United States under Article 21.3 of the WTO’s *Understanding on Rules and Procedures Governing the Settlement of Disputes* (the “*DSU*”) to come into compliance with the recommendations and rulings of the DSB, the United States has been extremely aggressive in its efforts to prohibit the provision of gambling and betting services to consumers in the United States from operators in Antigua. As a result, revenue earned by Antiguan providers of gambling and betting services has fallen dramatically over the past few years. For this and other reasons to be discussed in this Paper the determination of the exact level of nullification or impairment being suffered by Antigua is difficult to determine.

Accordingly, in this Paper Antigua will present three separate computations of the level of nullification or impairment, all based upon the same historical data and independent third-party projections. The first method assumes a constant market share by Antigua of 21 percent of the global remote gambling market (the “*Constant Market Share Model*”). The second, more conservative method fixes Antigua’s revenue from remote gambling and betting services at its level in 2001 and assumes an annual growth rate of 8.7 percent (the “*Constant Growth Model*”). The third, and most conservative method fixes Antigua’s revenue from remote gambling and betting services at the 2001 level (the “*Fixed Revenue Model*”).

The level of nullification or impairment sought by Antigua of US \$3.443 billion was determined pursuant to the Constant Market Share Model.<sup>1</sup> The other models are being presented in this Paper for purposes of showing the extremely large level of nullification or impairment being suffered by Antigua due to the non-compliance of the United States with the recommendations and rulings of the DSB in the Dispute, even using very conservative methodologies.

## II. METHODOLOGY

This section describes the methodology used to calculate the level of nullification or impairment suffered by Antigua as a result of the failure of the United States to comply with the recommendations and rulings of the DSB in the Dispute. The description of Antigua’s methodology

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<sup>1</sup> Since the 22 June 2007 recourse of Antigua to Article 22 of the DSU (the “*Recourse*”), the economists engaged by Antigua have refined the methodology somewhat, resulting in a slightly higher figure for the level of nullification or impairment than was determined at the time of the Recourse.

begins by setting forth information about the Antigua remote gaming industry and the counterfactual assumptions developed for the analysis. Then it details the methodology used to analyse and calculate Antigua's level of nullification or impairment.

### A. Antigua Remote Gaming Industry Data

In 1999, there were 119 licenced remote gaming operators in Antigua employing an estimated 3,000 persons.<sup>2</sup> As shown in *Exhibit AB-1*, Antigua remote gaming revenue in 1999 was approximately US \$546 million.<sup>3</sup> It then grew 214 percent to about US \$1.716 billion in 2000 and then increased another 39 percent to US \$2.392 billion in 2001, which marked Antigua's peak year in terms of remote gaming revenue. Over the 1999 through 2002 time period, Antigua drove the growth of the global remote gaming market. As shown in *Exhibit AB-2*, Antigua's share of the global remote gaming market was 52 percent in 1999, 61 percent in 2000 and 59 percent in 2001.<sup>4</sup> This overall success led the remote gaming industry to be the leading revenue generating sector of the Antigua economy.<sup>5</sup>

However, 2002 represented a major turning point for the Antigua remote gaming industry. In that year, among other things, the United States forced the major credit card companies and the then-dominant payment processing service, PayPal, to cease the transfer of funds between customers and remote gaming operators, thus making it considerably more difficult and expensive for Antigua

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<sup>2</sup> First Submission of Antigua and Barbuda, *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services*, 1 October 2003, p. 9.

<sup>3</sup> GBGC, Quarterly eGaming Statistics Report, May 2007 (including underlying online gaming revenue data for select gaming jurisdictions, including Antigua).

<sup>4</sup> *Id.*

<sup>5</sup> Antigua remote gaming revenue should not be directly compared to Antigua's gross domestic product ("GDP"), which was estimated at EC \$1.760 billion (US \$653 million using the average annual currency exchange rate) in 1999, EC \$1.796 billion (US \$668 million) in 2000, and EC \$1.883 billion (US \$703 million) in 2001 (Source: Eastern Caribbean Central Bank (the "ECCB"), National Accounts Statistics 2006 for the year ended 31 December 2005, 8 November 2006) (attached as *Exhibit AB-6*). First, generally speaking, GDP is underestimated because it excludes non-monetary transactions, unreported transactions, illegal transactions, and volunteer and other unpaid work. Second, GDP as an economic measure is the sum of value added (*e.g.*, wages, depreciation, profits, and taxes on production) at every stage of production for all final goods and services. It is not the sum of revenue at each stage of production. All non-labor and non-depreciation expenses at each stage are excluded from GDP. Thus, an economic sector's contribution to GDP will be lower than its revenue by the amount of its non-labor and non-depreciation expenses. Third, for small island economies such as Antigua, GDP tends to be low given small populations and high negative trade balances (*i.e.*, imports are substantially higher than exports). This fact merely reflects how GDP is calculated (*i.e.*, GDP equals private consumption plus investment plus government expenditures plus exports minus imports). Lastly and most importantly, the remote gaming industry is not fully or properly reflected in Antigua's GDP. This leads to an underestimation of GDP. This is a result of two factors: (1) there has always been a low response rate by remote gaming operators to GDP-related surveys, thus making the results of such surveys statistically unreliable; and (2) the few remote gaming operators that have responded to the GDP-related surveys, have not often reported a key component of GDP – profits. (Source: ECCB Staff, Telephone Discussion, 15 August 2007).

remote gaming operators to do business.<sup>6</sup> Furthermore, the Antiguan government in mid-2001 enacted stricter remote gaming regulations as a result of direct pressure from the United States, diminishing Antigua's appeal as a remote gaming jurisdiction to certain operators. The combination of the disruption in the primary payment methods and stricter regulations, both of which were the result of United States enforcement of offending measures, were among the primary reasons for the steep decline in the Antiguan remote gaming industry that began in 2002.<sup>7</sup> Further, Antiguan remote gaming revenue has dramatically declined in five of the past six years (2002, 2003, 2004, 2006 and now expected in 2007) as a result of redoubled efforts by the United States to prevent the delivery of services from Antiguan operators to United States consumers and is expected to experience only minimal growth going forward.<sup>8</sup> Antigua's revenue from remote gambling services has paled in comparison to that of the global remote gaming industry as a whole, which experienced strong growth in five of the past six years and is expected to significantly outpace Antigua in each of the next several years.<sup>9</sup>

In 2007, Antiguan remote gaming revenue is expected to decline 13 percent to approximately US \$948 million.<sup>10</sup> This reflects a mere seven percent share of the global remote gaming market. In comparison to its banner year in 2001, just prior to the onslaught of restrictive United States activities, Antigua has lost 60 percent of its peak remote gaming revenue and 52 percent of its share of the global remote gaming market. According to industry projections, the situation is not expected to improve for Antigua in the future.<sup>11</sup>

## **B. Counterfactual**

In order to calculate the level of nullification or impairment suffered by Antigua as a result of the restrictive United States measures, it is necessary to compare the Antiguan remote gaming industry's *actual* performance with its *expected* performance given a counterfactual (the "*Counterfactual*") where the United States did not take measures to restrict trade contrary to its obligations under the WTO's *General Agreement on Trade in Services* (the "*GATS*").

The Counterfactual developed for this methodology is that *if* the United States had permitted Antiguan operators to provide cross-border gambling and betting services to United States consumers without interference, as it is obligated to do under the GATS, *then* Antiguan service

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<sup>6</sup> **Exhibit AB-7**, Attorney General of the State of New York, Internet Bureau, Assurance of Discontinuance, *In the Matter of Citibank (South Dakota), N.A.* (21 June 2002); Attorney General of the State of New York, Internet Bureau, Assurance of Discontinuance, *In the Matter of PayPal, Inc.* (16 August 2002); United States Department of Justice, Criminal Division, Statement of John G. Malcolm, Deputy Assistant Attorney General (20 November 2002); Joseph Kelly, Robert Mignin, and Suzanne Saxman, "US Policy," Chapter 14, *Internet Gambling Report*, 9th edition, eds. Mark Balestra and Anthony Cabot (River City Group, 2006), pp. 194-195.

<sup>7</sup> Discussion with Antiguan remote gaming operators and the Antiguan Online Gaming Association, August 2007.

<sup>8</sup> **Exhibit AB-1**. The only year Antiguan remote gaming revenue did not decline was 2005, where it grew only one percent. Meanwhile, the global gaming industry excluding Antigua grew 42 percent in 2005.

<sup>9</sup> **Exhibit AB-1**.

<sup>10</sup> *Id.*

<sup>11</sup> **Exhibits AB-1 and AB-2**.

providers would have had a significantly increased share of the overall global remote gaming market, significantly higher revenues, significantly lower business costs and as a result, higher profits. These benefits would extend to the entire economy and population of Antigua, as the Antiguan remote gaming industry would be the leading sector of the Antiguan economy both in terms of employment and revenue.

The Counterfactual is based upon the following assumptions:

1. *The United States adheres to its GATS commitments for remote gambling and betting services as established in the Dispute.*

2. *The United States recognises that Antiguan law governs Antiguan-based remote gaming operators serving customers located in the United States.* Under Antiguan law and its regulatory scheme, as is the case under state law in the United States, transactions with customers using the services of Antiguan operators are considered to take place at the location of the computer servers and telephone operators located in Antigua. While United States customers may be *physically* present in the United States, they must first fund an account in Antigua with the Antiguan operator and then wager the funds in Antigua at the location of the Antiguan operator's computer server. The bets therefore take place in Antigua, where such wagering is lawful, licensed and regulated. Antiguan operators would have the additional benefit of offering certain gambling services, such as sports wagering and casino gaming, that are not available in the majority of states in the United States. Antiguan operators would thus have had access to a market in which to offer certain services with relatively few domestic or international competitors.<sup>12</sup>

3. *The United States does not interfere with the electronic transfer of funds between customers and Antiguan remote gaming operators.* Antiguan operators are dependent on electronic payment processing of customer funds. As a regulatory precaution, Antiguan operators are not permitted to accept currency for remote gambling transactions or to allow consumers to play on credit. A consumer is only permitted to wager on funds on deposit with the Antiguan service provider in a designated account. This means that Antiguan operators must rely on the ability to send and receive consumer funds by electronic means such as bank wire, credit card, debit card or automatic clearing house.

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<sup>12</sup> If Antigua had open access to provide race and sports wagering to United States residents, it is probable for purposes of this Counterfactual assumption that the remote race and sports betting operators located outside Antigua may have elected to offer services to customers in the United States. Even with this possible competition, Antiguan operators were uniquely situated to capture and retain a large and loyal customer following in the United States sports betting market as Antiguan operators (i) were the first entrants to the American market; (ii) utilised innovative product offerings (such as live betting, low-cost wagering, and futures products) specifically tailored to American sporting events; (iii) are located in a time zone convenient to a North American customer base; and (iv) engaged in marketing campaigns focused on American bettors. Further assets to Antigua in this regard are its favourable taxation scheme and a well-established and respected financial services sector.

The United States has severely limited Antiguan operators' access to these ordinary financial services.<sup>13</sup> Without reliable and cost-efficient financial services, Antiguan operators have been forced to use second- or third-tier payment processors and banks, sometimes with disastrous results, to move money between consumers and the operators. Banking costs are now the greatest single expense for remote gambling operators in Antigua.<sup>14</sup> As a result, Antiguan operators have had to create complex business systems merely to take funds in from, and to make payments out to, their customers in the United States. In addition to increasing the cost of doing business, this severe handicap has frustrated potential consumers from wagering with Antiguan operators unable to get accounts funded.

4. *The United States does not interfere with advertising by Antiguan remote gaming operators.* Antiguan operators, as is the case with their counterparts in the United States, rely heavily on advertising to attract new consumers and retain existing ones. Yet, unlike sanctioned service providers in the United States, Antiguan operators have been generally precluded from advertising in major media outlets in the United States. In the face of direct and effective pressure by the United States government, Antiguan operators have been and remain unable to advertise on television, in national print media, during sporting contests, on most major Internet search engines and portals and in virtually all other customary advertising outlets. This has cut off Antiguan operators from not only American consumers, but also international consumers who receive United States-based television and print media. The highly restricted access, and at times complete inability, to advertise remote gambling services has had a substantial and materially detrimental impact on the growth, revenues and profits of Antiguan operators. Accordingly, *if* Antiguan operators had full and ordinary access to advertising services, *then* Antiguan operators would have been able to attract a significant number of new consumers—and retain them—and do so at much lower costs than they face under current conditions.

5. *Antiguan remote gaming operators are not compelled to invest significant resources to counteract United States measures to restrict gaming operators from providing remote wagering services to United States consumers.* Despite aggressive actions by the United States government to prohibit the provision of cross-border gambling and betting services to consumers in America, some Antiguan operators have managed to continue to offer services to American consumers. In order to do so, these service providers have expended large and disproportionate amounts of financial resources and attention on creating and maintaining a highly adaptable remote business network designed to allow consumers in the United States to use Antiguan services despite the GATS-inconsistent actions taken by the United States government. Among other things, Antiguan operators have had enormous amounts of money seized or lost as a direct result of United States government interference; been forced to bear a significant portion of the fees and costs of legal disputes

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<sup>13</sup> *Exhibit AB-8*, Federal Bureau of Investigation, Press Room, “Online Gambling: Don’t Roll the Dice” (6 June 2007) [[www.fbi.gov/page2/june07/gambling060607.htm](http://www.fbi.gov/page2/june07/gambling060607.htm)] (discussing FBI strategy of targeting financial services to cut off the flow of money between American consumers and foreign remote gambling providers).

<sup>14</sup> Discussions with Antiguan remote gaming operators and the Antigua Online Gaming Association, August 2007.

initiated by the United States (or individual states) or in response to United States violations of its GATS commitments; and been forced to incur millions of dollars in legal fees alone to respond to criminal cases brought by the United States or to assist Antigua in the Dispute. These miscellaneous costs, resources and diverted attention have come at the cost of investment in research and development of new product offerings, marketing, advertising, developing cash reserves and other normal and ordinary activities that would have been beneficial to the growth and development of the Antiguan remote gaming industry.

### C. Calculation of the Level of Nullification or Impairment

#### *Introduction*

Based upon the facts underpinning the Dispute, independent third-party data on the remote gaming industry and the Counterfactual discussed above, Antigua has developed a methodology for calculating its level of nullification or impairment as a result of United States measures intended to prevent Antiguan gaming operators from providing cross-border gambling and betting services to United States consumers in contravention of the recommendations and rulings of the DSB in the Dispute.

The time period used in the methodology is from 4 April 2006 (the end of the “reasonable period of time” in the Dispute) through 31 December 2012 (the last year for which independent third-party remote gaming revenue projections are available). The industry data was acquired from Global Betting and Gaming Consultants (“GBGC”), a third-party international gaming consulting firm that specialises in remote gaming.<sup>15</sup>

The methodology utilises three steps. The first step is to calculate Antigua’s lost remote gaming revenue as a result of the United States restrictions on trade. This is calculated by comparing *expected revenue* to *actual revenue*. The second step of the calculation is to apply a generally-accepted “multiplier” to adjust the lost revenues to include the impact of the revenue losses on other sectors of the Antiguan economy. The final step of the calculation is to discount the trade loss to present value utilising a 9.38 percent discount rate.<sup>16</sup>

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<sup>15</sup> *Exhibit AB-9*, Global Betting and Gaming Consultants, Quarterly eGaming Statistics Report, May 2007 (including underlying remote gaming revenue data for select gaming jurisdictions, including Antigua). GBGC is a specialised gaming consultancy with its corporate headquarters located at 23b St Michaels Street, West Bromwich, West Midlands, B70 7AB United Kingdom; Tel: +44 (0) 121 500 5564; Web Site: www.gbgc.com. GBGC’s clients include large gaming operators, national or state lotteries, gaming suppliers, investment banks, other consultancies, and government regulators. One of GBGC’s core services is the provision of extensive global gambling data and statistics for its consumers. GBGC also provides consulting services in the areas of market research, business planning, product evaluations, development of corporate strategies, license applications and regulatory developments for private and governmental gaming clients. Its clients use its data and due diligence services in major initial public offerings, private mergers and acquisitions, and equity buyouts.

<sup>16</sup> The present value calculation uses the mid-period convention and a discount rate of 9.38%, which is the median Weighted Average Cost of Capital (CAPM) for the U.S. SIC Code 7999, which includes the gaming industry (*Exhibit AB-10*, Ibbotson Cost of Capital 2006 Yearbook).

The methodology is then presented in three alternative models, with each model adhering to the same basic methodological framework but each utilising slightly different variables. The Constant Market Share Model, described in *Exhibit AB-3*, assumes that Antigua would have retained a 21 percent share of the global remote gaming services. In 2001, Antiguan operators earned 59 percent of all global remote gaming revenues. This percentage fell precipitously to 41 percent in 2002, diminishing further to 21 percent in 2003. The analysis presented in *Exhibit AB-3* assumes that had the United States not undertaken activities to prohibit trade in remote gambling and betting services in violation of the GATS, Antigua would have maintained its 2003 share of the 21 percent of the global remote gaming market. Under the Constant Market Share Model, the present value of the average annual nullification or impairment to Antigua is approximately **US \$3.450 billion**.

The Constant Growth Model presented in *Exhibit AB-4* assumes that the 2001 revenues of the Antiguan remote gaming industry would have remained constant through 2006, and thereafter grown at compound annual growth rate of 8.7 percent through 2012, which is the estimated annual global remote gaming industry growth rate during this period. In this alternative calculation, the present value of the average annual level of nullification or impairment is approximately **US \$2.403 billion**.

The Fixed Revenue Model described in *Exhibit AB-5* is a particularly conservative variation of the Constant Growth Model. In *Exhibit AB-5*, Antigua assumes there would be no growth in its operators' 2001 revenue levels. As shown in *Exhibit AB-5*, assuming 2001 revenues remained constant with no growth whatsoever, the present value of the average annual level of nullification or impairment is approximately **US \$1.614 billion**.

### ***The Three Models Presented***

1. *Exhibit AB-3: Constant Market Share Model*
  - a. Counterfactual Remote Gaming Revenue

The top three rows of *Exhibit AB-3* demonstrate the calculation of Antigua's counterfactual remote gaming revenue, which is an estimate of Antigua's remote gaming revenue (*i.e.*, amount wagered minus payouts) on a calendar year basis given the Counterfactual. In other words, these data are *expected* revenue figures to which *actual* revenue is compared to compute the *lost* remote gaming revenue.

The first row of *Exhibit AB-3* sets forth the actual global remote gaming revenues for the time period from 1999 through 2006, and estimated remote gaming revenues for the 2007 through 2012 time period (the "*Global Remote Gaming Revenue*"). The second row of *Exhibit AB-3* presents a reasonable and conservative estimated market share for Antiguan operators had the United States not undertaken actions to interfere with the Antiguan remote gaming industry (the "*Counterfactual Antiguan Share of Global Remote Gaming Revenue*"). In this methodology it is assumed that without United States interference the Antiguan remote gaming industry would have maintained its 2003 market share of the global market of 21 percent from 2004 through 2012.

The third row of *Exhibit AB-3* shows the mathematical computation of Antigua’s remote gaming revenues based on the 21 percent market share assumption of the global market (the “*Counterfactual Antiguan Remote Gaming Revenue–Model 1*”).

b. Actual Remote Gaming Revenue

Actual remote gaming revenue, which is set forth in the fourth row of *Exhibit AB-3* (the “*Actual Antiguan Remote Gaming Revenue*”), represents the amount of revenue generated by the Antiguan remote gaming industry on a calendar year basis. Data for 1999 through 2006 are actual figures, while data for 2007 through 2012 are industry projections.

c. Lost Remote Gaming Revenue

Lost remote gaming revenue, which is the fifth row of *Exhibit AB-3* (the “*Lost Antiguan Remote Gaming Revenue–Model 1*”), is equal to the amount of revenue lost by the Antiguan remote gaming industry as a result of the United States’ failure to comply with the recommendations and rulings of the DSB. Formulaically, it is calculated as the difference between the Counterfactual Antiguan Remote Gaming Revenue–Model 1 (third row of *Exhibit AB-3*) and the Actual Antiguan Remote Gaming Revenue (fourth row of *Exhibit AB-3*).

In order to adjust for the fact that the time period of the analysis commences on 4 April 2006, the 2006 value used for Lost Antiguan Remote Gaming Revenue–Model 1 is prorated in the sixth row of *Exhibit AB-3*.

As shown in *Exhibit AB-3*, under this model Lost Antiguan Remote Gaming Revenue–Model 1 is approximately US \$1.561 billion in 2006 (prorated from 4 April 2006 through the end of 2006), and is expected to be approximately US \$1.966 billion in 2007, US \$2.613 billion in 2008, US \$3.120 billion in 2009, US \$3.486 billion in 2010, US \$3.751 billion in 2011 and US \$4.016 billion in 2012. Using this methodology, Antigua’s average annual remote gaming revenue loss over the period is US \$3.041 billion.

d. Total Level of Nullification or Impairment

Thus far, the results of the analysis have captured losses to only one sector in the Antiguan economy, albeit a large one – the remote gaming industry. However, the losses to this industry have certainly led to additional losses in other sectors of the very small Antiguan economy. This phenomenon, which is rooted in sound, generally-accepted economic theory, is commonly known as the “multiplier effect.” Any significant initial change in economic activity, typically referred to as the “direct effect,” whether positive or negative, is likely to have indirect effects on other sectors of the economy that depend at least in part on the directly affected sector. For instance, losses to the remote gaming industry lead to subsequent losses to (i) other businesses and industries from which the remote gaming industry purchase goods and services (*e.g.*, computers, servers, software, office supplies, banking services and computer and information technology services); (ii) employees as jobs are lost or wages reduced; and (iii) the Antiguan government as licensing fees and taxes are lost. In order to measure the indirect effects of an initial revenue change, an output (value of sales) multiplier is typically applied to direct effect, thus yielding the total economic effect on economic output

(including both the direct and indirect effects). Generally, multipliers are complex to derive and require detailed economic data on the geographic location and industry (or set of industries) that are rarely readily available. Thus, a significant amount of time and effort are required to create custom multipliers.

Unfortunately, there are no publicly available multipliers for either Antigua or the remote gaming industry. Thus, while perhaps not a perfect match for the Antiguan remote gaming industry, the best available output multiplier—and the one used by the economic experts engaged by Antigua—was for the tourism industry in Barbados.<sup>17</sup> First, as a *service* industry multiplier, it is more likely to be similar to a remote gaming industry multiplier than a goods industry multiplier. Second, Barbados is a small Caribbean island economy like Antigua. Generally, small island economies are highly dependent on imports and thus have weaker multipliers (*i.e.*, a dollar of direct effect recirculates fewer times through the economy). The tourism output multiplier for Barbados was only 1.41 (*i.e.*, for every US \$1.00 of direct effect, the indirect or secondary effect is only US \$0.41 for a total effect of US \$1.41). Generally speaking, this is a rather low output multiplier.<sup>18</sup>

Using this small island economy multiplier, the average annual remote gaming revenue loss of US \$3.041 billion translates into a total annual trade loss of approximately US \$4.288 billion per year.

e. Present Value Calculation

The final step of the calculation is to discount the average annual trade loss to present value, applying a 9.38 percent discount rate. The present value of the average annual trade loss—and level of nullification or impairment to Antigua—is approximately **US \$3.450 billion** per year under the Constant Market Share Model.

2. *Exhibit AB-4: Constant Growth Model*

a. Counterfactual Remote Gaming Revenue

Counterfactual remote gaming revenue for the Constant Growth Model, which is set forth in the first row of **Exhibit AB-4** (the “*Counterfactual Antiguan Remote Gaming Revenue–Model 2*”), is an estimate of Antigua’s remote gaming revenue on a calendar year basis given the Counterfactual where the United States did not restrict trade. In this model, Antigua has conservatively assumed that the Antiguan remote gaming industry would have been able to maintain the level of remote gambling revenues it generated prior to 2002, but with a further assumption of remote gaming industry growth of 8.7 percent per year over the period from 2007 through 2012. The 8.7 percent growth rate represents the average annual remote gaming revenue growth rate for the rest of the world (*i.e.*, the global remote gaming industry excluding Antigua) over the same time period according to GBGC (*see* the backup table to **Exhibit AB-4**).

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<sup>17</sup> **Exhibit AB-11**, Horwath Tourism & Leisure Consulting, “Tourism Multipliers Explained,” November 1981.

<sup>18</sup> Among the wide array of output multipliers presented in the source referenced in the immediately preceding footnote, the tourism multiplier for Barbados was the lowest.

b. Actual Remote Gaming Revenue

For this model the Actual Antiguan Remote Gaming Revenue, which is set forth in the second row of *Exhibit AB-4*, is the same as with the Constant Market Share model, and represents the amount of revenue generated by the Antiguan remote gaming industry on a calendar year basis. As previously noted, these data were obtained from GBGC, a third-party independent data source.

c. Lost Remote Gaming Revenue

Lost remote gaming revenue, which is the third row of *Exhibit AB-4* (the “*Lost Antiguan Remote Gaming Revenue–Model 2*”), is equal to the amount of revenue lost by the Antiguan remote gaming industry as a result of the United States actions to prohibit remote gaming services. Formulaically, it is calculated as the difference between the Counterfactual Antiguan Remote Gaming Revenue–Model 2 (first row of *Exhibit AB-4*) and Actual Antiguan Remote Gaming Revenue (second row of *Exhibit AB-4*).

As with the Constant Market Share Model, in order to adjust for the fact that the time period of the analysis commences with the end of the “reasonable period of time” on 4 April 2006, the 2006 value for Lost Antiguan Remote Gaming Revenue–Model 2 is prorated in the fourth row of *Exhibit AB-4*.

As shown in *Exhibit AB-4*, under this model Antigua’s average annual remote gaming revenue loss is approximately US \$2.114 billion.

d. Total Trade Loss

As shown in *Exhibit AB-4*, using the small island economy multiplier of 1.41, the average annual remote gaming revenue loss to Antigua is measured at approximately US \$2.981 billion.

e. Present Value Calculation

The final step of the calculation is to discount the average annual trade loss to present value, applying the 9.38 percent discount rate. After application of the discount rate, the average annual trade loss—and level of nullification or impairment to Antigua—is approximately **US \$ 2.403 billion** per year under the Constant Growth Model.

3. *Exhibit AB-4: Fixed Revenue Model*

a. Counterfactual Remote Gaming Revenue

Counterfactual remote gaming revenue for the Fixed Revenue Model, which is set forth in the first row of *Exhibit AB-5* (the “*Counterfactual Antiguan Remote Gaming Revenue–Model 3*”), is an estimate of Antigua’s remote gaming revenue on a calendar year basis given the Counterfactual where the United States did not restrict trade. In this model, Antigua has very conservatively assumed that the Antiguan remote gaming industry would have been able to maintain the level of remote gambling revenues it generated prior to 2002 for each year through 2012.

b. Actual Remote Gaming Revenue

For this model the Actual Antiguan Remote Gaming Revenue, which is set forth in the second row of *Exhibit AB-5*, is the same as with the other models, and represents the amount of revenue generated by the Antiguan remote gaming industry on a calendar year basis.

c. Lost Remote Gaming Revenue

Lost remote gaming revenue, which is the third row of *Exhibit AB-5* (the “*Lost Antiguan Remote Gaming Revenue–Model 3*”), is equal to the amount of revenue lost by the Antiguan remote gaming industry as a result of the United States’ actions to prohibit remote gaming services. Formulaically, it is calculated as the difference between the Counterfactual Antiguan Remote Gaming Revenue–Model 3 (first row of *Exhibit AB-5*) and Actual Antiguan Remote Gaming Revenue (second row of *Exhibit AB-5*).

As with the other models, in order to adjust for the fact that the time period of the analysis commences with the end of the “reasonable period of time” on 4 April 2006, the 2006 value for Lost Antiguan Remote Gaming Revenue–Model 3 is prorated in the fourth row of *Exhibit AB-5*.

As shown in *Exhibit AB-5*, under this method Antigua’s average annual remote gaming revenue loss is approximately US \$1.360 billion.

d. Total Trade Loss

As shown in *Exhibit AB-5*, using the small island economy multiplier of 1.41, the average annual remote gaming revenue loss to Antigua is measured at approximately US \$1.918 billion.

e. Present Value Calculation

The final step of the calculation is to discount the average annual trade loss to present value, applying the 9.38 percent discount rate. After application of the discount rate, the average annual trade loss—and level of nullification or impairment to Antigua—is approximately **US \$ 1.614 billion** per year under the Fixed Revenue Model.

### III. CONCLUSION

For the reasons and on the basis described in this Paper, in the Request Antigua has requested the DSB authorise a level of the suspension of concessions or other obligations equal to the level of nullification or impairment attributable to the failure of the United States to comply with the recommendations and rulings of the DBS in the Dispute in an annual amount equal to **US \$3.443 billion**.

## Schedule of Exhibits

- Exhibit AB-1** Antigua Remote Gaming Revenue: 1999 to 2012.
- Exhibit AB-2** Antigua Share of Global Remote Gaming Revenue: 1999 to 2012.
- Exhibit AB-3** Level of Nullification or Impairment to Antigua – Constant Market Share Model.
- Exhibit AB-4** Level of Nullification or Impairment to Antigua – Constant Growth Rate Model.
- Exhibit AB-5** Level of Nullification or Impairment to Antigua – Fixed Revenue Model.
- Exhibit AB-6** Eastern Caribbean Central Bank, National Accounts Statistics 2006 for the year ended 31 December 2005 (8 November 2006).
- Exhibit AB-7** Attorney General of the State of New York, Internet Bureau, Assurance of Discontinuance, In the Matter of Citibank (South Dakota), N.A. (21 June 2002); Attorney General of the State of New York, Internet Bureau, Assurance of Discontinuance, In the Matter of PayPal, Inc. (16 August 2002); United States Department of Justice, Criminal Division, Statement of John G. Malcolm, Deputy Assistant Attorney General (20 November 2002); Joseph Kelly, Robert Mignin, and Suzanne Saxman, “US Policy,” Chapter 14, Internet Gambling Report, 9th edition, eds. Mark Balestra and Anthony Cabot (River City Group, 2006), pp. 194-195.
- Exhibit AB-8** Federal Bureau of Investigation, Press Room, “Online Gambling: Don’t Roll the Dice” (6 June 2007).
- Exhibit AB-9** Global Betting and Gaming Consultants, Quarterly eGaming Statistics Report, May 2007.
- Exhibit AB-10** Ibbotson Cost of Capital 2006 Yearbook.
- Exhibit AB-11** Horwath Tourism & Leisure Consulting, “Tourism Multipliers Explained,” November 1981.