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# Conflicts in Development: Tourism and the Cattle Industry in Brazil

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## Abstract

This paper challenges the conventional view that where there is a political elite, economic development will proceed along lines that sacrifice future generations for the benefit of the current ruling class. We find that shortfalls in the balance of payments will cause those in authority to promote activities that encourage tourism as a solution to balance of payments deficit. The vehicle for generating tourism is the provision of public goods. More traditional paths toward development particularly cattle ranching are displaced by tourist attractions. While motivated by myopic self-interest, the pursuit of public goods reduces the amount of debt transferred to future generations and thereby serves to redistribute wealth inter-temporally. Brazil over the period 1965 until 1998 is used as a test case.

**JEL Classification Codes:** O1, O5, P0

**Keywords:** tourism, cattle, ecotourism, public goods

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**CONFLICTS IN DEVELOPMENT:  
TOURISM AND THE CATTLE INDUSTRY IN BRAZIL**

**I. Introduction**

While volumes of research have been devoted to theories of economic growth and development, less attention has been given to empirical studies of specific country's efforts toward modernity.<sup>1</sup> In the absence of a well developed market mechanism the controlling authority must make decisions about which economic sectors to support and which to sacrifice. Early theories that emphasized growth as progressing through stages miss the point that in a global economy luxury goods such as tourism may displace primary sectors such as livestock at the will of the governing authority. Unlike the usual tragedy of the commons, public goods which attract tourists may be seen as providing a higher return to those in power than private goods such as livestock. Rangel (2005) argues that intergenerational public goods reduce the debt that the present generation bequeaths to future generations. As such governments should provide tax mechanisms to encourage public goods because in the absence of such measures insufficient attention will be given to protecting the interests of future generations. Our hypothesis is quite the contrary: the political elite will use public goods as a short run response to balance of payments problems. The unintended consequence of this myopic decision is that the supply of intergenerational public goods increases.

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<sup>1</sup> Antonio Rangel addresses theoretically how governments decide to invest in intergenerational public goods. Because the decisions involve present and future generations and non-excludability market based solutions are not feasible. See: "How to Protect Future Generations Using Tax-Base Restrictions," *The American Economic Review*, 95, 1 (March 2005) pp. 314-46.

This paper looks at Brazil where the impact of the global economy as measured by the balance of payments has led to efforts to grow tourism at the expense of cattle production. The next section summarizes the issues involved in development. Section III provides preliminary tests of the model. Section IV summarizes the findings and suggests some implications.

## **II. Choices in Development**

The premise of this paper is that authorities make decisions with respect to the sectors of the economy they will support. In the case of Brazil this is a choice between “tourism” and cattle. In many respects this paper may be thought of as Neo-Marxist. The ruling elite makes decisions with respect to which *class*, tourist or rancher, will best redress global imbalances. Two over-arching questions arise at the beginning of this research: (1) Does the authority have sufficient decision-making power to alter the normal course of development? (2) Why the tradeoff between tourism and cattle?

With respect to the first question the ruling elite have a long history of exercising autocratic power in Brazil.<sup>2</sup> Abiad and Mody (2005) construct an index of financial liberalization for 36 economies from 1973 to 1996.<sup>3</sup> On a scale of 0 (full repression) to 18 (full liberalization) Brazil increases from 1 to 8. Among Latin American countries Chile had the highest level (15) and Brazil and Venezuela were tied for the least liberal. Brazil’s index was the same as Zimbabwe and Ghana; the lowest among the African and

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<sup>2</sup> The role of elites in Brazilian history is well documented in the literature. An excellent summary can be found in Michael L. Conniff and Frank D. McCann, *Modern Brazil: Elite and Masses in Historical Perspective* (Lincoln: University of Nebraska Press, 1989).

<sup>3</sup> The determinants of financial liberalism and the secular trend are quantitatively measured in Abdul Abiad and Ashoka Mody, “Financial Reform: What Shakes It? What Shapes It?” *The American Economic Review* v. 95, 1 (March 2005) pp. 66-88.

Middle East countries included. Given the historical power of the ruling class and the state of the financial system the preconditions appear to exist.<sup>4</sup>

The emphasis on tourism and cattle may seem unusual at first glance. Tourism is used as a proxy for the government's investment in public goods while cattle raising is used to measure a private good. The tourist industry is usually measured by the number of tourists, but this is ambiguous. Writers on tourism are fully aware of the difficulty of defining the so-called "tourism industry."<sup>5</sup> While most people are confident that they can spot a tourist in a crowd, it turns out that defining the tourist *class* is extremely difficult and frustrating. Using industry practice it is common to classify an international "tourist" as someone from a different country who has traveled to a foreign destination (for whatever reason) and stayed there for twenty-four hours.<sup>6</sup> From an analytical perspective, it must be recognized that people travel for all sorts of reasons: to go to funerals, to search for loved ones who have disappeared, to transact or complete a business deal, to seek a peaceful environment in which to relax, to purchase goods and services that may not be available in some communities, to experience different cultures, etc. Our special interest is with those tourists that travel to enjoy the public goods specific to a given region. It is these people that were the focus of the 1967 law passed in Brazil establishing a state tourist agency (EMBRATUR).

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<sup>4</sup> Edwin McDowell summarizes business in Brazil: "The typical Brazilian large corporation is a "mixed" company with private and Government shareholders and independent of the Government bureaucracy, but in which the Government is dominant. ... It has been this way since the Getulio Vargas era, which spanned the better part of 24 years, beginning in 1930." Edwin McDowell, "Brazil Alters Its Export Mix," *New York Times*, January 7, 1979, p. F1.

<sup>5</sup> See, for example, Kathleen Carey, "Estimation of Caribbean tourist demand: issues in measurement and methodology," *Atlantic Economic Journal*, Sept. 1991, v. 19, n.3, pp. 32-41.

<sup>6</sup> *Ibid*: p.33. From an operational perspective, there is little alternative to defining a tourist since determining motivation would require much more detailed information.

The activity we have defined as tourism arises in two different environments closely associated with development and underdevelopment. In a developed nation, such as the United States, public goods tourist attractions have always existed, but they were not used on a grand scale until large segments of the population were wealthy enough to travel to distant destinations.

Domestic tourist attractions were not viewed as engines of growth the way they are in less developed countries. Niagara Falls, the Grand Canyon, Yosemite and Yellowstone Parks did not attract the average American—at least until late in the history of this country. Even Niagara Falls, which was much more accessible to the general public, was overdeveloped by private enterprise to such an extent that the government had to intervene to restore the public goods quality of the asset. New York City, the prime tourist Mecca of this country, came to be such an attraction as a result of private commercial and industrial activity. One exception to the above was Washington, D.C., which was planned with a truly public goods goal: the capital would be the pride of the American citizens, and would offer monuments, museums, cemeteries, parks and colossal public structures that would delight true tourists—those who traveled to experience a public good.

Natural public goods have always existed in the less developed world. Victoria Falls in Africa or the Iguazu falls in South America have existed prior to civilization. But travel to these distant destinations was always extremely expensive and unaffordable to most. Two factors are necessary for tourism in the modern world: increased wealth and

relatively low transportation cost. It came to pass, then, that wild Africa could be either re-discovered or re-invented, and tourism came to be perceived as an engine of growth.<sup>7</sup>

The sub-Saharan African case is important to discuss because it serves as a template for a formal model. Over time, the native population had expanded its control over the environment, displacing both wild animals and pests, expanding agriculture and raising domesticated animals. A similar process had occurred in Eurasia and North America, with wild animal populations destroyed and replaced with agriculture, hunting and the raising of domestic animals.<sup>8</sup> In sub-Saharan Africa this process of development has been stopped for a variety of reasons.

First, black Africa has seen the formation of weak nation states—resulting from colonially imposed artificial boundaries and the absence of endogenous economic growth. Second, the leading elite was either trained abroad or interested in imitating the institutions of developed nations. And third, many domestic resources were more valuable to foreign interests than to the native population.

Tourism (as defined in this paper) in black Africa has been based on the development of wild-animal parks and other natural public goods that are highly valuable to foreigners but of little value to the native population.<sup>9</sup> The enjoyment of public goods (Victoria Falls, for example) is of little value to a population that is poor even though in close proximity. A conflict arises between the ruling elite who see the benefits of tourism and the more traditional growth process involving agriculture and animal raising.

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<sup>7</sup> One truly extraordinary book covers this topic. Helge Kjekshus, *Ecology Controls and Economic Development in East African Society: the case of Tanganyika 1850-1950* (Athens: Ohio University Press, 1966).

<sup>8</sup> Tim Flannery, *The Eternal Frontier: an ecological history of North America and its people*, (New York: Atlantic Monthly Press, 2001).

<sup>9</sup> See: Bill Derman, “Environment NGOs, dispossession, and the state: the ideology and praxis of African nature and development,” *Human Ecology: An Interdisciplinary Journal*, June 1995, v. 23, pp. 199-216.

But why the change from the traditional path? In a long run growth paradigm the process may be economically justified in terms of specialization and measured GDP. More immediately and pragmatically tourism is a source of foreign exchange that redounds to the governing class. Countries with the worst balance of payments and the need for more centralized governments should be the most inclined to substitute the marketing of public goods for the more traditional process. This change in emphasis from agriculture and industry as the bases for development has significant implications for the economic and political systems of these societies. This justifies centralization, coordination and extensive marketing networks needed to attract those willing and able to travel a significant distances. Small scale enterprises that could generate a competitive environment for both the economy and the political sectors are replaced by the tourist enterprises, competing in the world arena. African nations are trying to use the service sector as an engine of growth knowing full well that international tourists will not be satisfied with the local accommodations that may satisfy visitors but not pleasure seekers.<sup>10</sup> Public goods are indispensable but not sufficient to tourism. A strong centralized government is needed to market the public good and provide the infrastructure to deliver the foreign tourists who in turn bring in the foreign exchange.

Our emphasis is the public goods nature of tourism.<sup>11</sup> Public bads may, under special circumstances, attract many visitors, but not necessarily tourists.<sup>12</sup> The recent tsunami in

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<sup>10</sup> The growth of the service sector negatively impacts income distribution in underdeveloped countries. See: Peter B. Evans and Michael Timberlake, "Dependency, Inequality and the Growth of the Tertiary: A Comparative Analysis of Less Developed Countries," *American Sociological Review*, 1980, v. 43, pp.531-552.

<sup>11</sup> The importance of public goods was recognized in 1996 by the President of the Hotel Association of Rio de Janeiro, who said: "Rio cannot compete as a resort. ... We have to resell the city's image. People already know about the Corcovado, the beaches and the mulattas. What they don't know is that we have more than 60 museums. We think Rio can be a very important center of a new kind of tourism, and a big

South East Asia illustrates the point. This horrendous event created a public bad of enormous proportions, with death and destruction for thousands of miles. Visitors both from the interior parts of the countries affected and from abroad traveled to the impacted coastal areas—in search of survivors, the bodies of loved ones, plus to help in reconstructions. Yet these visitors are officially counted as “tourists” according to the industry definition but the intent of their visit is quite different.<sup>13</sup> In cities like Recife, Brazil young women are recruited into prostitution and the incidence of AIDS is increasing as efforts are made to attract tourists.<sup>14</sup> Public bads can checkmate public goods. In the 1980s the failure of Rio de Janeiro to curtail crimes against tourists led to a significant reduction in American travel. Even now Americans are a very small part of the international tourists with most coming from Italy, Spain, Germany and France.<sup>15</sup>

Our model assumes that economic decisions in many less developed countries (including Brazil) are made by a central authority that may be concerned with narrowly defined immediate gains which may or may not be compatible with long run growth. In the sub-Saharan case previously discussed, this has meant the development of wild animal parks, biased policies against herders and agriculturalists, and a push for industries that lack competitive potential in world markets. Air transportation to remote

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center for sports events.” Larry Luxner, “Rio races to attract Olympic gold,” *Hotel & Motel Management*, February 5, 1966, v. 211, n.2, pp. 4-6.

<sup>12</sup> The fear of crime in Rio de Janeiro became such a serious public bad in the 1990s that the government used the military (rather than the police!) to stop the activities of criminals. Adam Brown, “Rio’s hoteliers applaud Brazil’s use of military force,” *Hotel & Management*, Jan 9, 1995, v. 210, n.1, pp. 4-6.

<sup>13</sup> This is not to say that people are not attracted to natural disasters and do not get some kind of pleasure from such activity. Crime scenes require crowd control because so many people are curious to see the site.

<sup>14</sup> Marlise Simons points out that women’s groups in Recife are concerned that the city and Brazil as a whole “is being promoted as a center for sex tourism” with the support of the government. Marlise Simons, “Brazil’s Fleshpots Bring Tourists and a Backlash,” *New York Times*, February 24, 1987, p. A4.

<sup>15</sup> James Brooke points out that there are direct flights from most European capitals to Brazil, but not between major American cities and Brazil. While Spain and Italy have made significant investments in Brazil, Americans have lagged behind. James Brooke, “Europeans Chase the Sun to Brazil’s Northeast,” *New York Times*, March 15, 1994, p. D2.

locations is subsidized, and local infrastructure is provided to ensure access to wild animal parks and the beach areas that cater to foreign tourists. Foreign hotel chains reach special deals with the ruling class which may be impossible to scrutinize in the protected environment of Swiss bank accounts, black-box governmental decision-making and a culture of political corruption.<sup>16, 17</sup> Pursuit of international tourism will shift government resources from the promotion of private activities to the creation, or at least the protection, of public goods which are attractive to the foreign tourists. Some private enterprises (such as hotels, usually of foreign origin and capable of serving foreign tourists) will gain a foothold in the economy with promises of extensive employment opportunities for the local population and/or with self-serving ecological arguments about promoting or protecting public goods assets. The connection between which enterprises win and which lose in this political economy game is not always obvious, except that in the sub-Saharan case it is quite obvious that animal raisers lose to the tourist sector. That is precisely the hypothesis that this paper wants to test in the case of Brazil.

It is not obvious that the Brazilian case fits the mold, for the country is not as underdeveloped as most African countries. Per capita GDP in 2000 in dollars was 7,745 similar to that in Botswana, Russia, South Africa and Venezuela. The growth rate of per

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<sup>16</sup> The labyrinth of policies that affect agriculturalists' income and prices has been brilliantly exposed by Steven M. Helfand and Gervasio Castro DeRezende in "The impact of sector-specific and economy-wide policy reforms on the agricultural sector in Brazil: 1980-98," *Contemporary Economic Policy*, April 2004, v. 22, pp.194-213. For an earlier period, see also Steven M. Helfand "The political economy of agricultural policy in Brazil: decision making and influence from 1964 to 1992," *Latin American Research Review*, Spring 1999, V. 34, pp. 3-33. This article, quite correctly, places heavy emphasis on the state-regulated hierarchical system of corporatist social relations.

<sup>17</sup> It should also be noted that the switch from military dictatorship to democracy in Brazil did not change corrupt practices: "Several authors maintain that, contrary to expectations, transition to democracy did not reduce presidential reliance on traditional patronage politics, but actually increased it." This evaluation comes from a review by Eliza Willis of a book by Keith S. Rosenn and Richard Downes, eds. *Corruption and Political reform in Brazil: the Impact of Collor's Impeachment*, in the *Journal of Latin American Studies*, August 2001, v. 33, p. 643. Things have not much changed in recent times: "On a scale of one to 10—10 being a nation without any political corruption—Brazil garnered a 3.9 rating [in 2003 and 2004]." "Corruption remains the same in Brazil," UPI NewsTrack, Oct 20, 2004.

capita GDP from 1960 to 2000 was similar to that of Canada, Chile and the United States.<sup>18</sup> Brazil, however, had a government sector that sought centralization of power in economic decisions and a tourist dependent on long-distance travel; conditions ideally suited for manipulation by a central authority capable of generating new public goods.<sup>19</sup> The market mechanism is encumbered by a labyrinth of regulations, subsidies, taxes, alternative exchange rates regimes, and industrial payoffs to government officials. Brazil, however, has a long history of external political independence, and its elite is fully aware that wealth creation requires the production of commodities if the country is going to experience long-term growth. This has been demonstrated in the past, where the ruling elite have promoted both agricultural and industrial development. At one time the ruling oligarchy had close ties to ranching while in more modern regimes the cattle industry is poorly represented.<sup>20</sup>

The tourist sector in Brazil (which is a small part of the whole economy) presents the government with the opportunity to use tourism as a short run tool rather than a long run engine of growth. Imbalances in goods and services (well observed in the foreign exchange accounts) can be covered with tourist income and, if absolutely necessary, with borrowing in the foreign exchange markets. Tourism becomes the first line of defense against planning and performance errors. Tourism which can be obtained through the manipulation of taxes, subsidies and the exchange rate becomes a policy variable driven

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<sup>18</sup> See: Heston, Alan, Robert Summers and Betina Aten (2002) *Penn World Table Version 6.1*. Center for International Comparisons at the University of Pennsylvania (CICUP). October and Robert J. Barro and Xavier Sala-i-Martin, *Economic Growth*, 2<sup>nd</sup> ed. Cambridge: The MIT Press, 2004. .

<sup>19</sup> See Paulo Prada, "Stranded: miles of beaches but no easy way to get there. Brazil's tourism needs a break," *Latin Trade*, Oct 2004, v. 12, pp. 54-55.

<sup>20</sup> The "coffee and cream [ranching]" interests controlled Brazil from the last decade of the 19<sup>th</sup> century to the second decade of the 20<sup>th</sup> century. However, only ranching interests extended their influence to a later period because of Getulio Vargas, who was dictator from 1930 to 1945, and served as a democratically elected president from 1950 until 1954. He came from an elite ranching family. See: Marshall C. Eakin, *Brazil, the Once and Future Country*. New York: St. Martin's Griffin, 1998, pp. 37-46.

by the previous currency imbalances. EMBRATUR has the authority to certify projects defined by the national tourist council as eligible for tax incentives which once when to cattle.<sup>21</sup>

The difference between tourism and cattle is both one of public and private good as well as one of social class. Foreign tourists to Brazil concentrate in the large urban areas, and the public goods aspects of these areas must be preserved or even improved in order to maintain their tourism quality.<sup>22</sup> This translates into a shift of the population away from the traditional central cities and to the ever expanding suburbs, urban centers in the interior and into the countryside, where economic intensive activities (such as agriculture) replace the more traditional, extensive cattle industry. The population move towards the interior of the country was a formal government policy designed and implemented by President Kubitschek in the second half of the 1950s. This was promoted with the founding of a new capital in 1960, the construction of extensive road networks and the granting of subsidies to settlers. Since our study covers the years 1965 to 1998, we hope that it captures and helps explain policy decisions that willfully created large population movements within Brazil.

The one population movement that has been extensively studied in the literature is the colonization of the Amazon—where cattle production expanded.<sup>23</sup> However, Amazon colonization and that of the surrounding *cerrado* frontier, misses the point that the rural population in many other states decreased in absolute numbers. For example, the state of

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<sup>21</sup> Thomas Lovejoy, an American ecologist points out “In Amazonas state, hotels are now getting the tax incentives that 10 years ago went to cattle ranchers.” James Brooke, “Growth in Tourism is Benefiting Fragile Environment,” *New York Times*, August 8, 1989, p. C4.

<sup>22</sup> See: “Brazilian cities: a future for the past,” *The Economist*, Nov 14, 1998, p. 96.

<sup>23</sup> The reason for that appears to be that livestock has been used to claim land in the new frontier; see Susanna B. Hecht, “The logic of deforestation in Amazonian,” *Bioscience*, Nov 1993, v. 43, n10, pp. 687-96.

São Paulo lost 1,298,271 people in the rural areas during the 1960s and 1,267,786 in the 1970s. In fact, excluding the Amazon and *cerrado* frontiers, there was a loss of rural population in Brazil of 3,564,756 people during the 1970s.<sup>24</sup> Also, the rural areas of Brazil lost 15.8 million people during the 1980s due to net migration, with the Northeast, the Southeast and the South experiencing the largest rates of rural population losses.<sup>25</sup>

The process of economic growth is complex and multidimensional. While tourism and cattle may be substitutes at the margin other factors will promote the growth of both. The cattle industry has experienced a growing trend over time, resulting from technological improvements and increased demand due to population growth. On the other hand, the income growth of the existing population will itself create a demand for a better-quality urban environment, inducing the dirigisme class (which also happens to live in that urban environment) to preserve and improve the living space of cities. Income growth, will further contribute to the displacement of people from the traditional urban centers that cater to the tourist class.

An alternative hypothesis might be that cattle is a function of the price and particularly the external price of beef. High international prices for beef may lead to restrictions on domestic consumption of beef, but increased production for international sale. Cattle production could rise because of increased sales abroad or fall because of decreased consumption at home.

### **Testing the Model**

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<sup>24</sup> Anna Luiza Ozorio de Almeida, *The Colonization of the Amazon* (Austin: The University of Texas Press, 1992), p. 19.

<sup>25</sup> Stephen G. Perz, "The Rural Exodus in the Context of Economic Crisis, Globalization and Reform in Brazil [1]," *International Migration Review*, Fall 2000, v. 34.

The theory developed in the previous section is not easily unraveled and tested. Data are difficult to obtain and verify. Further the decision making process is driven by variables not common to market models. Finally, the process is sequential rather than simultaneous. We assume the following sequence of events. In stage 1 deficits in the real balance of payments (BOP) act as an incentive for policy-makers to undertake actions to stimulate tourism (TOUR). In stage 2 the inflow of tourism is at the expense of cattle (CATTLE) raising and thereby a reduction in the number of cattle. This may arise because tax incentives are switched from cattle to tourism and/or tourism may reduce the amount of land suitable for cattle. The following equations summarize the process:

$$\text{TOUR}_t = b_0 + b_1\text{BOP}_{t-1} + b_2\mathbf{X}_t + e_t \quad (1)$$

$$\text{CATTLE}_t = c_0 + c_1\text{TOUR}_t + c_2\mathbf{X}'_t + e'_t \quad (2)$$

In equation (1) tourism is assumed a function of the balance of payments last year. A number of other lag structures were tried but a one year lag proved most significant.  $\mathbf{X}_t$  refers to a vector of exogenous variables including growth in GDP and time. A number of other variables were tried including electricity consumption, net exports and population, but proved insignificant. In equation (2) the number of cattle is assumed a function of the amount of tourism and a vector of exogenous variables including beef prices in Argentina, growth in GDP and time. Real Beef prices in Argentina measures the demand for beef in the export market and are assumed exogenous to the Brazilian beef price. The growth in GDP measures cyclical changes over time while the time variable captures the overall trend in the economy.<sup>26</sup> Other variables were tried including other prices, electricity consumption and acres devoted to rice production.

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<sup>26</sup> Electricity consumption was used along with and in place of time. Together they were highly multicollinear. Since the objective was to capture the trend, time was chosen.

Other prices and rice production were insignificant while electricity consumption was highly multicollinear with the growth in GDP. Table 1 defines the variables and gives the data sources for the period 1965 to 1998.

Figure 1 displays tourism and cattle over time. Both are clearly affected by a trend component indicating a positive linear relation. Figure 2 shows the same variables measured in first differences; detrending leads to what appears to be an inverse but not very strong relation.

A number of approaches were taken in an effort to quantify the process. In the first column of Table 2 the ordinary least squares (OLS) estimates of tourism and cattle are reported. Both time and the real balance of payments significantly affect the amount of tourism. The rate of growth in GDP is not significant but it is positive. In the cattle equation tourism has the expected negative effect and it is significant. This occurs despite the strong positive trend component. The growth in GDP is not significant and it is negative. Beef prices have a negative effect but are not significant.

While the premise of this paper is that tourism drives out cattle, and alternative might be that they are simultaneously determined. What we observe is the outcome of a conflict between those supporting cattle and those supporting tourism. The coefficient for tourism would then be biased and inconsistent. To determine whether the causality is in fact from tourism to cattle a number of alternative estimation techniques were tried. In a two-stage instrumental variable approach (2SLS), TOUR in equation 2 is replaced with an instrument assumed a function of the lagged real balance of payments, real beef prices, time and GDP growth. Two-stage least squares accounts for possible simultaneity between TOUR and CATTLE. The results for the cattle equation are quite similar to

those in the OLS estimates. The growth in GDP is now significant and negative. The reduction in standard errors indicates a gain in efficiency. In columns three and four the model is estimated using two systems methods: three stage least squares (3SLS) and seemingly unrelated regressions (SUR). The estimates are very similar. Despite a very strong trend component the lagged real balance of payments has a significant negative impact on tourism. Both tourism and GDP growth have significant negative effects on cattle after controlling for secular change.

The data on tourism include people who visit a country for business or personal reasons unrelated to public good consumption. How large a fraction these people are is difficult to determine precisely. The coefficient of determination between TOUR and GDP was .2346 indicating that some “tourism” is related to production. The estimates in Table 2 indicate, however, that even after controlling for GDP tourism continues to have a significant negative impact on cattle. These results are consistent with data provided by the Instituto Brasileiro de Turismo indicating that in 1994, 76% of the visitors to Brazil were tourists, 19.4% were engaged in business transactions, 2.9% attended conventions and 1.4% visited for other reasons. In 1998, 71.8% were tourists, 22.7% were engaged in business transactions, 4.0% attended conventions and 1.6% visited for other reasons.

Tourism appears to account for roughly 75% of all visitors.

The elasticity of cattle with respect to tourism (measured at the means) ranges from -.039 to -.048 with an average over the estimates of -.043. While the effect is statistically significant, the size of the coefficient is quite small.

## **Summary and Conclusions**

Where free markets are not allowed to make choices, governments may choose to support some sectors at the expense of others. Such decisions may not be important enough to reverse economic trends, but they may have marginal impacts on the allocation of societal resources. Evidence of this is seen in various African countries, but its presence in other countries has not been studied. This paper looks at a more developed country, Brazil, where it is theorized that a public good generating tourism is supported at the expense of a private good cattle.

The results of the empirical tests are tentative because of limitations in the availability of data and the complexity of the decision making process. Despite these problems the evidence is supportive of the view that governments can make substitutions among sectors of the economy. Public goods rather than private goods may be preferred in the short run by the ruling party. While the general view is that the provision of intergenerational public goods may not be politically feasible because of the costs to the present generation, we show that central authorities may use such goods to address immediate financial needs.

This paper is a first step in examining how political power can be used to change the traditional process of development. The narrow interests of the ruling party may lead to more resources being devoted to intergenerational public goods. The conundrum is that political power and short run gain leads to unanticipated benefits to future generations.

## Table 1

### Variable Definitions and Data Sources

TOUR : Individuals measured in thousands entering Brazil who stay at least 24 hours;

*United Nations: Statistical Yearbook (annually).*

BOP: Nominal balance of payments deflated by the price of U.S. exports (base is 1990);

*Statistical Abstract of Latin America (annually).*

CATTLE: Number of cattle livestock; *International Historical Statistics: The Americas (periodically).*

GDP: Annual rate of growth in real GDP; *Statistical Abstract of Latin America (annually).*

BEEFP: Real beef price in Argentina (base 1990); *Statistical Abstract of Latin America (annually).*

TIME : Beginning with one in 1965.

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Figure 1 Cattle and Tourism

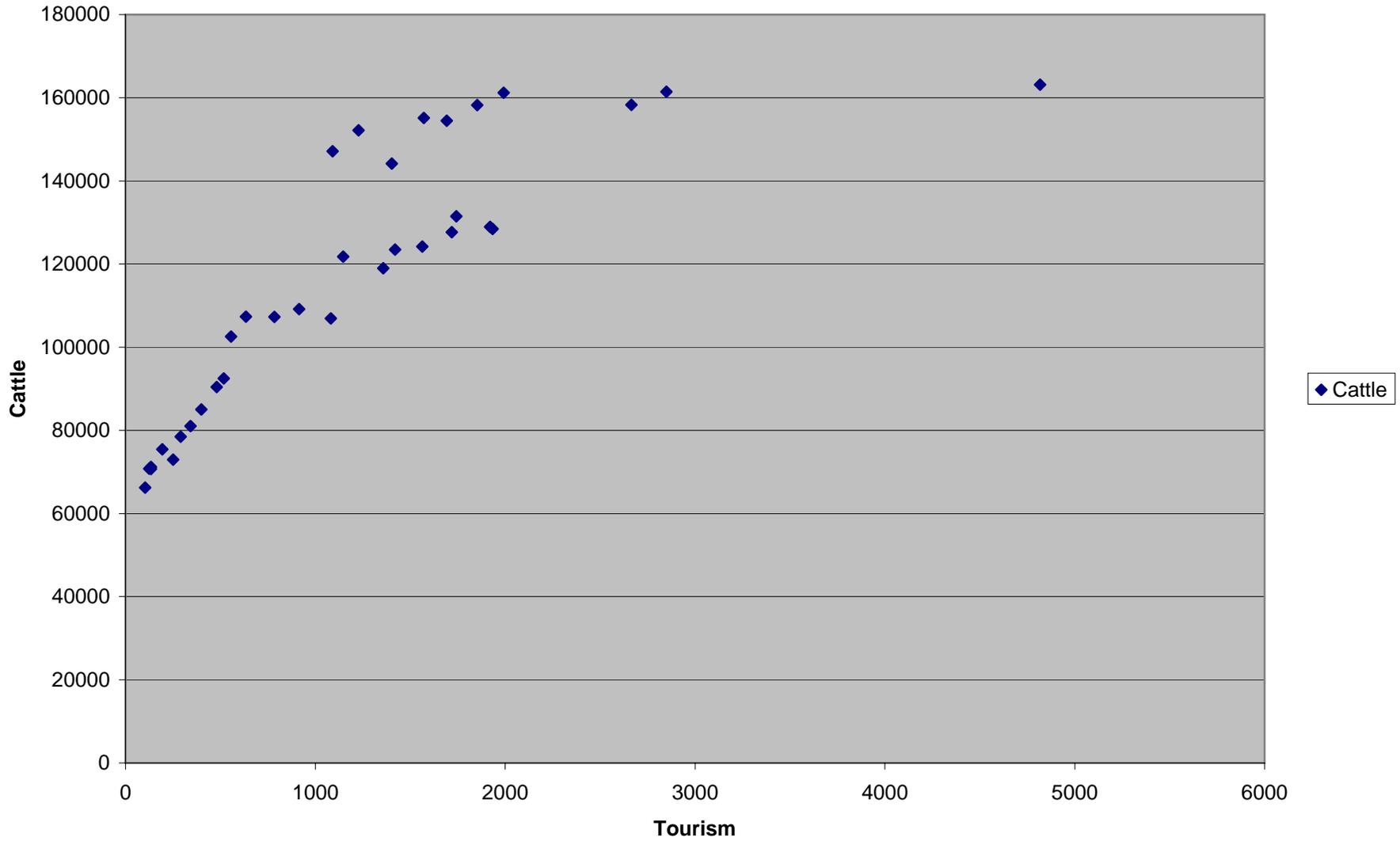


Figure 2 First Differences

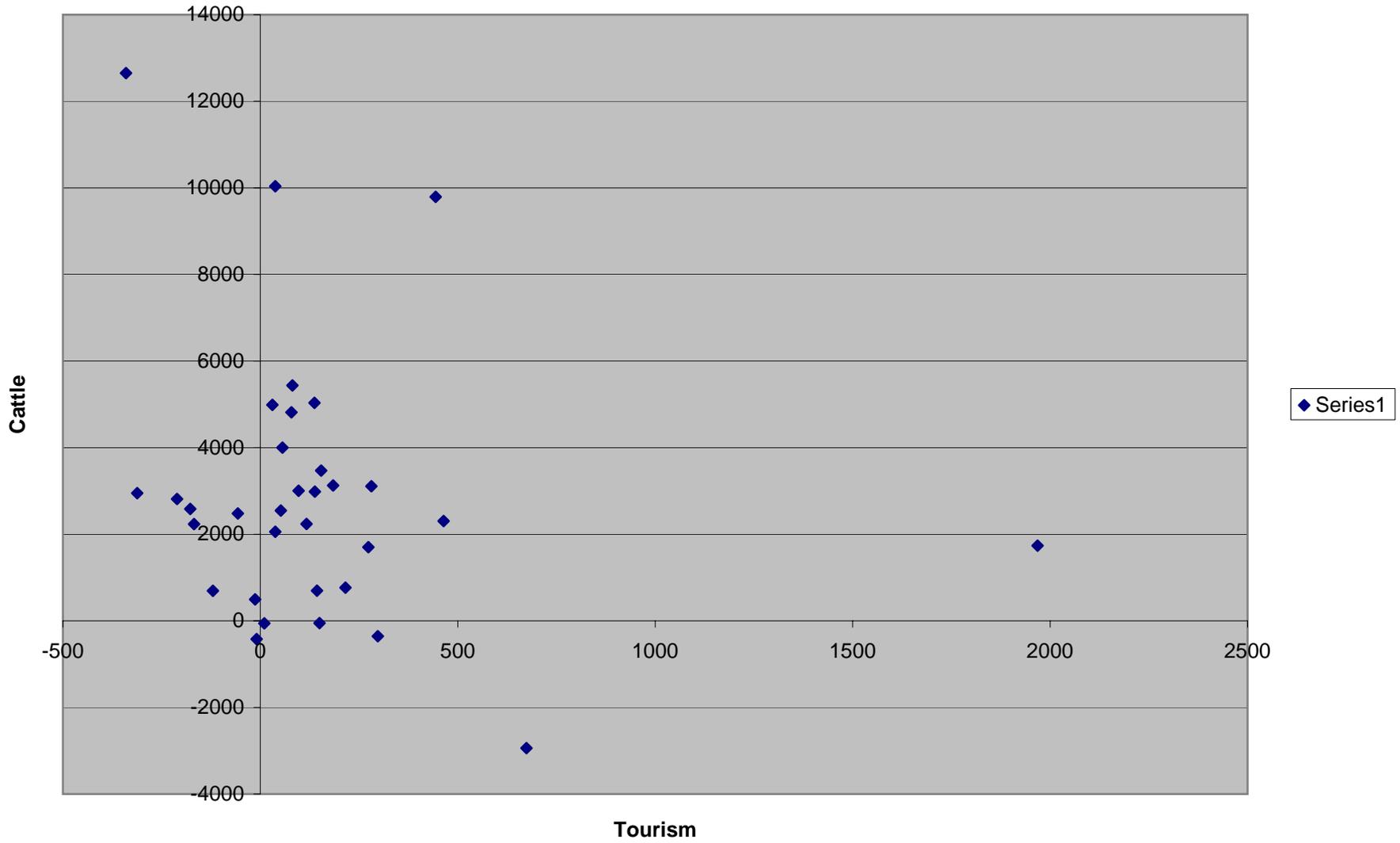


Table 2: Regression Estimates

Dep Variable	OLS	2SLS	3SLS	SUR
<b>TOUR</b>				
BOP	-3.6273 * 0.9572		-3.6273 * 0.8973	-3.6328 * 0.8971
TIME	80.6148 * 9.1257		80.6148 * 8.5548	80.6078 * 8.5547
GDP	4.6906 20.6111		4.6906 19.3216	4.7113 19.3214
Constant	-505.513 * 250.475		-505.513 * 234.805	-505.89 * 234.8
R <sup>2</sup>	0.8283		0.8283	0.8283
<b>CATTLE</b>				
TOUR	-3.7217 * 1.1628	-4.1031 * 1.0494	-4.6104 * 1.6682	-4.2525 * 0.9663
TIME	3524.14 * 140.995	3533.31 * 126.259	3582.71 * 168.674	3547.95 * 116.259
BEEFP	-12.488 14.0972	-9.6416 12.6587	-11.0196 11.7284	-10.0674 11.6549
GDP	-158.959 139.688	-387.128 * 148.308	-386.335 * 137.197	-386.816 * 136.605
Constant	61548.4 * 1936.76	62374.7 * 1757.66	62303.4 * 1649.24	62354 * 1618.97
R <sup>2</sup>	0.9909	0.9924	0.9923	0.9923

Notes: \* Significant at 5 percent.

R<sup>2</sup> in the systems estimations are only approximations.

Two stage least squares for the tourism equation are the same as the ordinary least squares estimates.

N=33.