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Pastore, Mario H.

Dpt. of Economics and Ctr. Pol. Ec., Washington University Saint
Louis, Center for Seventeenth and Eighteenth Century Studies,
UCLA, Miami University, Oxford, OH

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"COERCED LABOR AND FREE PEASANTRY:

A PROPERTY-RIGHTS, RENT-SEEKING VIEW OF COLONIAL PARAGUAY"#

by Mario Pastore##

Introduction

What forces accounted for the rise and fall of coerced indigenous labor forms and the eventual predominance of a free mestizo peasantry in colonial Paraguay?

The early colonial economy of Paraguay was characterized by Spanish enslavement of American Indians. However, enslavement contributed to indigenous depopulation, which led the crown to outlaw indigenous slavery and replace it in mid-sixteenth century by two versions of the "encomiendas," a form of serfdom. The encomienda "yanacóna or originaria," disguised and restricted the earlier slavery; the encomienda "mitaria", on the other hand, bore more of a resemblance to European serfdom. "Yanacónas or originarios"

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##Department of Economics and Latin American Studies, Tulane University. I wrote this paper while visiting at the Department of Economics and the Center in Political Economy, Washington University in St. Louis, and at the Department of Economics at Miami University, Oxford, Ohio. I thank the comments and suggestions of Stanley Engerman, Evsey Domar, Branislava Susnik, Luis Galeano, Luis Campos, Jerry Cooney, Héctor Pérez Brignoli, Douglass North, John Nye, and Elyce Rotella, as well as of many other colleagues. Remaining deficiencies are my responsibility.

lived in the houses, farms, and -later- ranches of their masters, serving them continuously in all sorts of tasks. "Mita Indians" so-called took turns rendering their masters specified labor services in shifts whose duration was eventually reduced to two months per year. They were -from the 1580's onwards- increasingly confined to segregated towns, which were first mostly founded by Franciscan missionaries. "Town Indians" were also subject to the "mandamientos," a state-run contract labor system which rented out indigenous laborers to Spaniards for relatively short, specified tasks.¹

Both the bonded and the still free indigenous population had declined noticeably by the 1630's and continued to fall thereafter despite entrustment and confinement to towns, founded also by Jesuit missionaries after 1610. Alongside the relatively larger estates Spaniards now worked with still diminishing supplies of both types of encomienda labor, the stagnating Franciscan missions and the still struggling Jesuit missions, a progressively more important mestizo, guaraní-speaking free peasantry began to proliferate. Paraguay's encomenderos or would be encomenderos, Jesuit priests, and - beginning in the 1630's- Brazilian slave raiders competed for indigenous laborers, and the resulting political and military conflicts that erupted between them characterized the remainder of the seventeenth and the first part of the eighteenth centuries.

The indigenous population of the Jesuit missions began to grow fairly rapidly after the middle of the seventeenth century, as it was successively freed from the slave raids and the labor services required by the encomienda mitaria. That of Franciscan missions -which was subject to the encomiendas- also began to rise, but much later -as the middle of the eighteenth century approached- and comparatively more slowly. Nevertheless, privately held

encomiendas did not now regain their past importance, even after large numbers of indigenous people became potentially available for entrustment following the Jesuits' expulsion in 1767. Private encomiendas increasingly reverted to the crown, but remained legal until just after the turn of the century, and in practice persisted until the end of the colonial period.

The free mestizo peasantry also grew in numbers, as a result of population growth and the transformation of some former Jesuit mission dwellers into peasants. However, after the Bourbons liberalized -in the 1770's most notably- international trade restrictions imposed by the Hapsburgs the previous century, and immigration increased as well, free land became progressively more scarce, the lands of the "pueblos de indios" were encroached upon by strangers, and sharecroppers and landless peasants appeared. The indigenous towns, unlike the encomienda, were not abolished during the colonial period and persisted beyond independence until the middle of the nineteenth century.

Any set of stylized economic facts must be seen through the prism of a certain body of economic theory and interpreted in terms of that theory. I will approach the problem neoclassically, that is, I will attempt to account for the stylized facts as behavior arising from constrained maximization. Since I seek to explain property rights on laborers and the institutional structure that evolved to enforce them, as well as the manner in which one set of property rights and enforcement institutions evolved into another, property rights will be determined endogenously and changes in property rights will result from changes in parameters. However, once a particular set of property rights and enforcement institutions have appeared, they become behavioral constraints, part of the datum within which agents maximize. More precisely,

the rise and decline of indigenous labor coercion will be seen to have resulted from the rent-seeking behavior of individuals and the state subject to changing relative factor prices and transactions costs constraints.

The paper is organized as follows: section one describes in more detail the evolution of indigenous enslavement, *encomiendas*, segregated towns, and *mandamientos*, as well as of the mestizo free peasantry. Section two puts forth some property-rights and rent-seeking notions that will help conceptualize the described phenomena. Section three uses these notions to interpret the evidence presented. Section four shows that refutable implications derived from the theoretical scheme are consistent with the historical record and that historical evidence not utilized to derive the theoretical scheme may be interpreted in terms of it without difficulty. Section five draws conclusions.

I. Indigenous Slaves, Serfs, and the Small Free Mestizo Peasantry in Paraguay.

Pre-Columbian indigenous people of the area with which we are concerned commonly practiced slavery and other forms of labor coercion, though in a much lower scale than Spaniards subsequently did. Tropical forest dwellers, the indigenous people of the Parana-Paraguay river basin were similar in many respects to those still living in the Amazon river basin. These wage war not for possession of forest land, which is abundant, but for the capture of slaves and wives. Groups tend to split once they reach a certain size and, rather than fighting over the land, the new groups simply move on to a previously unoccupied spot of the forest. Forms of state are very simple. More complex forms of state tend to appear where there are "varzeas" (very fertile land silted by periodic river floods), because it becomes necessary to exclude

competing groups from them. The state then taxes the excluded inland groups for the right of access to the fertile river banks. Something similar seems to have occurred in the highlands of Mexico and Peru, where more complex forms of state and labor coercion also seem to have arisen earlier where the scarcity of land first made itself felt.²

Spaniards did not begin enslave indigenous people of the area immediately after arriving. Instead, while they were still seeking to reach Perú from the east and southeast they sought to obtain without coercion the Indian goods and labor services they needed to attempt the journey. To this effect they formed mutually beneficial -though shifting- alliances with the guarani-speaking, neolithic Carios of the Asuncion area and against the nomadic, more warlike Guaycurú tribes that blocked the westward way and for long had harassed the Carios. These alliances were cemented in the customary indigenous manner, that is, by trade as well as by the polygamous marital unions of Cario women to Spanish men.³ The Carios valued iron tools highly, and quickly substituted them for their own stone instruments. From the Spanish-Cario "marriages" arose a mestizo population, about which more will be said later, and kinship ties between Spaniards, Carios, and their mestizo offspring. Kinship had mediated the exchange of voluntary, reciprocal labor services among indigenous tribes and the *cuñadazgo* initially served the same purpose for Spaniards and Carios. Particularly important in this connection were ties between in-laws, which led to the institution of the "*cuñadazgo*."⁴

The joint westward military expeditions through the Chaco to Perú produced numerous captives that were divided up as slaves among the Spaniards and their Cario allies. These expeditions did not only require the support of indigenous warriors but had to be outfitted and called for porters as well.

Indigenous women became particularly valuable to Spaniards in this connection, because they had customarily been responsible for agriculture and other heavy chores. Pressed by the need to reach Peru from the east before other Peninsulars did so from the west the Spaniards quickly turned the "cuñadazgo" into a vehicle for coercively exacting progressively greater amounts of labor from their Cario "relatives," male and female. They came to use their "wives" as slaves, exchanging them freely among themselves for clothing, horses, etc. These increased exactions were responsible for some early indigenous uprisings against the Spaniards, among them that of 1539, led by Cario women.⁵

Once Peru was reached from the west, it became clear to Spaniards in the River Plate that the eastern route was more costly and would not be used; they now turned their energies to extending the conquest and colonization of the area around Asunción and began to openly raid friendly indigenous communities for slaves. It did not appear to matter that mineral resources seemed to be lacking and that no commodities suitable for export had yet been found. These raids ("malocas" or "rancheadas") sought women in particular, for reasons already explained, and formally stretched until 1555.⁶ Indigenous slaves were used domestically and were exported to São Vicente, on the Atlantic coast, where they were sold to Portuguese sugar cane producers.⁷ The Spaniards' former indigenous allies reacted against these raids with a generalized resistance (bloodily repressed), and flight, as well as in other ways.⁸

Intermarriage with Spaniards, enslavement, resistance, flight, and European diseases rapidly lowered the indigenous population, a fact which royal officials had expected from previous experience elsewhere in the New World.⁹ Royal officials pressed to do away with enslavement and to instead institute the encomiendas, a system that would protect free indigenous vassals

from enslavement and which they finally managed to impose in 1556. That year the Provincial governor assigned in encomiendas mitarias 27,000 able-bodied, adult males (the equivalent of a population of 100,000) among a fraction of the Spaniards in Asuncion.¹⁰ Those who did not receive encomiendas, sorely disappointed by what they said was favoritism in their granting, set out for other areas where untrusted indigenous settlements were known to exist, the Guairá area east of Asunción most notably, and where the same process as in Asunción was then repeated.

The encomienda mitaria required those subject to it to take turns providing their masters specified labor services for a period of time that by the early seventeenth century had been reduced to two months per year. An encomendero was allowed to hold an encomienda grant for the remainder of his life and to bequeath it to one, or in very unusual circumstances, two consecutive generations of his or her descendants (that is, always less than the perpetual grant to which encomenderos aspired). The encomienda was said to have become "vacant" at the end of the stipulated period, if the beneficiary died without heirs, or if he abandoned the encomienda. A vacant encomienda escheated (reverted) to the crown, which could reassign them to other worthy Spaniards of its choice if it so desired.¹¹ The crown could also assign encomiendas to the Church or to royal officials in pursuit of public aims.

"Indios de la mita" were also subject to the "congregación," a policy that involved their resettlement, concentration, and internment in segregated towns ("pueblos de indios") to which only encomenderos and a few additional persons could have access.¹² These towns were often -though not always- located near the Spaniards' own towns, and were then referred to as "fronteros." Two supervisory layers governed the indigenous population of

these towns, one Spanish, the other indigenous. The first layer included the temporal supervision of a lay Spanish town overseer and the religious supervision of a priest who imparted Catholic instruction to the American Indians confined to them. The second layer consisted of a Spanish imposed, relatively privileged indigenous hierarchy more elaborate than the one that characterized indigenous communities of this area prior to the conquest.¹³ The presence of this hierarchy, conversely, meant that town dwellers enjoyed a measure of self government, though its extent was more circumscribed than what they had enjoyed in pre-Columbian times. As in the case of Spanish towns, indigenous town were governed by "cabildos." Under the direction of both supervisory layers, town dwellers were supposed to provide for their own sustenance and that of their overseers by laboring collectively on the fairly large amounts of land the colonial administration assigned to the towns, although these lands were clearly less extensive than those indigenous communities had previously roamed over and considered theirs. Town dwellers collectively owned the lands with which had been endowed and could not alienate them.¹⁴ Similarly, town dwellers could only trade with those allowed access to the towns, in particular, royal officials and their encomendero(s).

Entrustment of the indigenous population and its confinement to towns could, and did in fact, take place independently of one another, especially in the beginning, and the privately undertaken founding of indigenous towns eventually became the responsibility of the religious orders. Thus, while the first encomiendas were granted in the 1550's and some indigenous towns were founded by private Spaniards, the first permanent indigenous towns were not founded until the 1580's, by Franciscans missionaries.¹⁵

"Recalcitrant" indigenous people who had waged war against the Spaniards

or who, after 1556, had refused to peacefully submit to entrustment, could be forced to do so in "just wars" the Spaniards waged to that effect. These slaves were kept under close supervision in the homes and farms of the Spaniards and following the first repartimientos in mid-sixteenth century came to be regarded as belonging to another encomienda, the encomienda "yanacona," later known as the "originaria."¹⁶ Like the encomiendas mitarias, the yanaconas or originarias could not legally be traded at will; they had to revert to the crown before it reassigned them to another Spaniard. The encomienda yanacona thus disguised and prolonged indigenous slavery, but in a restricted form, since yanaconas could not legally be sold or rented. In practice, however, trades and rentals did take place.

Apart from the labor services they owed their encomendero under the encomienda mitaria, those confined to towns were also subjected to the "mandamientos," a state-run system of contract labor by which indigenous laborers were rented out to private entrepreneurs who needed them for specified tasks of limited duration. Mandamientos furnished Spaniards the indigenous laborers they needed to build and man vessels to transport yerba mate down river to Asunción, as well as for other commercial activities. Indigenous laborers received a legally established maximum wage from their employers for the tasks they performed under the "mandamientos," but they had to turn over half of it to the town's "treasury." The state could also use laborers from indigenous towns to build and repair roads, bridges, forts, and public buildings.¹⁷ When demand for labor increased, the number of indigenous laborers that were sent out under the mandamientos increased as well. Since many of those indigenous laborers did not return to their towns of origin the population remaining in indigenous towns decreased permanently. The colonial

administration appointed a special supervisor ("alcalde de sacas") to enforce mandated extraction ceilings and assure that indigenous laborers on mandamiento assignments returned to their towns.¹⁸

The "new" system of the encomiendas did not work well, for reasons that contemporaries attributed to the incentive system built-in the encomiendas. Specifically mentioned were the facts that the grant was not perpetual, that it could only be held for the grantee's lifetime and that of one or two generations of their descendants; and that encomenderos could not freely trade or rent their encomiendas. Encomenderos shifted indigenous serfs from the encomienda mitaria to the encomienda yanacona or exceeded the terms of mandamientos, to which end they bribed the Spanish corregidores of indigenous towns if necessary. Encomenderos also evaded rendering the military service to which their grant obliged them by purchasing government offices conferring exemption from that responsibility.¹⁹ For these and other reasons the indigenous population continued to decline. By the early seventeenth century it had been reduced to a fraction of its original size and both forms of the encomiendas had declined noticeably, despite the fact that much of the indigenous population had been confined to towns.²⁰ Three successive sets of royal ordinances of the late sixteenth and early seventeenth centuries noted the abuses and legislated against them.²¹

Real reprieve for the Guarani, however, did not come until after the Jesuits began to found missions in the Guairá region east of Asuncion in the 1610's, with indigenous people already entrusted to Spaniards, a fact which later was to serve as the excuse for disputes between Paraguayans and Jesuits.²² However, raids by Portuguese enslavers forced the relocation of the original Spanish settlements and Jesuit missions from Guairá to areas

farther west and south west, respectively. The displaced Spanish settlements moved within the jurisdiction of Asunción. The Jesuits resettled in an area astride the Parana and Uruguay rivers, which became the Jesuit missions' "locus classicus." The pursuing Portuguese "bandeiras," however, were decisively defeated in mid seventeenth century by Jesuit-led indigenous armies which the missionaries had trained and furnished with firearms. Between 1660 and 1680, and in recognition of their success, the crown exempted the Jesuit missions from the encomienda.²³ Henceforth, the tribute indigenous people owed the king was paid by Jesuits not in kind but in cash, which they obtained by selling yerba mate in the regional market. Initially, Jesuit-supervised teams of indigenous laborers gathered yerba mate in far-off royally owned lands. However, the operation was very costly in terms of human life. To reduce those losses, the Jesuits eventually set up plantations in the missions themselves.²⁴ Attempts by encomenderos to extend the encomienda to Jesuit mission towns, observed at this time, generally failed.²⁵ Thereafter, the indigenous population of Jesuit missions grew despite periodic bouts of the plague.

Outside the Jesuit missions the indigenous population had declined notably by the 1630's, and continued to decline thereafter -though more slowly- even though by this time it had for the most part been confined to towns. Encomenderos can now be observed to attempt to extend the encomiendas to mestizos and to introduce African slaves, but they were generally unsuccessful, because of legal regulations and the deliberate hindering of the colony's export trade, respectively. Only in the mid eighteenth century did the indigenous population of Franciscan missions begin to rise, very slowly.

The remainder of the seventeenth and the early eighteenth centuries were

marked by economic contraction and absence of immigration. As the indigenous people were "reduced" to towns they vacated lands which were occupied in turn by family farms of mestizo, guarani-speaking peasant proprietors. Resulting conflicts between Paraguayans and Jesuits over indigenous labor came to a head in the so-called Comuneros Revolt of the first third of the eighteenth century.

Following the Borbonic liberalization of trade restrictions of the 1770's in particular, production of yerba mate in the north, tobacco in the east, and cattle for the yerba industry in the south and southeast, all increased.²⁶ Correspondingly, the land market became more active: land prices rose, land rents, tenant-farming, and landless peasants appeared, and the frontier was pushed farther out.²⁷ There was migration to the more rapidly growing yerba and cattle ranching areas of the north from, for example, the southern mission towns abandoned by the recently expelled Jesuits as well as from among immigrants who had come from outside the Province.²⁸ Higher tobacco output grown typically by the small peasantry as a cash crop and initially encouraged by the establishment of the royal tobacco monopoly, led to an increase of the small peasantry and, therefore, of the land frontier. Furthermore, strangers ("forasteros") increasingly encroached on the lands of the pueblos de indios during this period. As land prices rose, wages rose as well, partly because the Borbonic reforms encouraged the development of manufacturing and agricultural state enterprises whose demand for indigenous labor revived a seventeenth century colonial administration policy to grant no new encomiendas and force vacant ones to revert to the crown.²⁹ The greater domestic and foreign demand and the greater derived demand for land and labor helped expand the land frontier, but it also introduced a certain

concentration of land and greater social differentiation among small peasant proprietors.

The system continued to function along these lines for the remainder of the colonial period. The Spanish crown finally abolished the encomiendas as a legal institution in 1803, and an early national government reiterated their abolition in 1812, after Independence. However, the pueblos de indios outlived persisted until the middle of the nineteenth century.³⁰

Now that we have described in detail the phenomena to be explained, let us briefly discuss some basic elements of the economic theory of property rights and then attempt to substantiate the Introduction's contention that the observed forms of property rights on labor and land resulted from public and private rent-seeking subject to the constraints of relative factor endowments and positive transactions cost.

II. Property Rights, Factor Proportions, and Public Finances.

The major questions that need accounting may be conceptualized within a property-rights, rent-seeking framework. These questions are, first, the early enslavement of indigenous people by Spaniards; second, the indigenous depopulation which led to slavery being substituted by the encomienda yanaconas or originarias and the encomienda mitaria; the mandamientos; and the continued decline of the indigenous population and the encomiendas; third, the rise of a free mestizo peasantry; and fourth, the abolition of serfdom; Let us now proceed to discuss the property rights and rent-seeking framework that will help us think them.

In general, scarce resources will generate rents that will accrue to their owners so long as property rights are well delineated and enforced.³¹

On the other hand, should property rights be poorly delineated and/or enforced, the resources will be overexploited and the rents that would otherwise have accrued to their owners will dissipate along many margins.³² The prospect of capturing rents that will otherwise dissipate will provide incentives to delineate and enforce property rights over scarce resources. Property rights delineation and enforcement will internalize the formerly existing externalities.³³ Delineation and enforcement of property rights may be carried out by individuals or, if the coercion necessary for enforcement is subject to economies of scale, by a specialized institution such as the state, which will edge out competing private associations. The state will perform these and other functions such as resolving disputes over rights among its constituents, defending constituents' rights from outside threats, and solving the free rider problem usually entailed here, all in exchange for revenue derived from the rents that will accrue to owners of scarce resources.

All other things equal one would expect to find relatively better defined and enforced property rights over comparatively more scarce factors for which costs of measuring and monitoring rights are relatively lower.³⁴ Conversely, one would expect to find property rights over relatively more abundant resources to be comparatively imprecisely delineated or poorly enforced, *ceteris paribus*. Property rights will be comparatively better delineated and enforced, therefore, as resources become sufficiently scarce relative to the costs of measuring and monitoring rights. This holds for any factor of production. Should labor be scarce relative to land, we would expect property rights on labor to be better delineated and enforced than property rights on land. Conversely, should land be comparatively more scarce vis-a-vis labor, we would expect property rights on land to be comparatively more

reduced to one degree or another: otherwise, the laborer could migrate in search of the highest wage; in turn, reducing the freedom of movement of the laborer will require his tying to, for example, the land, other men, or a combination of both.³⁷ Labor coercion will, in addition, force the laborers off the labor supply curve that would characterize their labor leisure choice if this were free, leading laborers to furnish a larger labor input than they would have provided voluntarily at every wage rate.³⁸ The shifted labor supply curve retains its positive slope, implying that bonded laborers will move along their coerced labor supply curve in response to material incentives. We would expect to observe, therefore, systems of coerced labor to include incentive structures to induce laborers to increase effort. Laborers' rights to enjoy the material incentives offered them will have to be somehow recognized in order for the incentives to have the desired effect. In turn, this means that coerced laborers will -in general- have to be capable of owning property de facto if not de jure. In turn, this will have several implications for the capacity of coerced laborers to accumulate wealth, derive an income from it, and spend that income. Whether laborers' right to property ownership is legally recognized or the laborer's income is spent on consumer goods or on repurchasing his/her freedom need not concern us at this stage.

Tying laborers will require some type of coercion to be applied, which implies that an unequal distribution of coercive power must exist between the laborers and those who keep them under subjection. Whether the required coercion is applied by individuals, the state, or both, its ultimate aim must be to appropriate the difference between the marginal product of labor and the wage rate that will obtain in what now must be regarded as an imperfectly competitive labor market, a monopsonistic labor market to be precise. Should

individuals and the state jointly apply the required coercion, one would expect to observe some arrangement by which individuals and the state will share the benefits of labor coercion. Labor coercion sanctioned by the state, therefore, may also be thought of as a public finance system.³⁹

State regulation creates economic rents that may raise the rate of return to resources above what they would earn under competitive conditions and which the state may tax to obtain revenues in excess of what it could have collected in an unregulated market. In effect, the state and private entrepreneurs share the rents that these regulations create, the division of the rents depending on the bargaining power of the parties. Therefore, state regulation will be both demanded and supplied. Because rent-creating legislation is valuable, private entrepreneurs will spend resources lobbying the government for it. Whether contract or predatory, the government will have incentives to sell rent-creating government regulation at prices that reflect its position as a price discriminating monopolist, because the sale will increase government revenues. That both contract and predatory governments may be consistent with labor coercion is clear from the historical record of the Americas. However, which form of government is more likely to sanction labor coercion is not as clear. The welfare loss is greater than that implied in the standard monopoly analysis, which does not take into account the cost of resources devoted by private entrepreneurs to lobbying the government or, we may add, by the government to price discriminate.⁴⁰ Clearly, then, some free men benefit more from coercing labor than do others, and they may consequently be expected to feel differently towards the regulatory system required to keep slavery in place, attitude which one would expect to somehow be reflected in their political opinions and activities regarding the role of the state in

preserving or abolishing labor coercion.

Now, for there to be incentives to more precisely define property rights on laborers in agricultural settings in particular, labor must be relatively scarce vis-a-vis land or, conversely, land must be abundant by contrast with labor, which is why agricultural labor coercion is generally associated with relative land abundance.⁴¹ Relative land abundance, however, is neither a necessary nor a sufficient condition for the rise of some form of labor coercion. It is not a necessary condition because so long as the gap between the marginal product of labor and the subsistence needs of labor is relatively large, serfdom may obtain even though free land may have disappeared, as happened in the Russian Ukraine in the eighteenth century.⁴² Nor is it a sufficient condition because - as will be seen in detail below - land abundance may result in a small free peasantry.⁴³ In either case, state intervention in some form will be required to enforce property rights system on laborers. However, what share of the actual coercion required to enforce a form of labor coercion is applied by private and public agents is not clear. The particular case being examined here suggests that much of the actual coercion necessary to enslave American Indians was applied by private entrepreneurs, state sanction being merely formal. Domar suggested that in the case of serfdom the state must intervene to abolish the right of laborers to move by tying laborers to landowners, which causes competition among employers to cease.⁴⁴ However, what share of the necessary coercion is privately applied and what share is applied by the government is again unclear. Finally, under land abundance, the peasantry arises because the state intervenes to preserve the right of the laborers to move, causing competition to persist. In this case, Domar asserts, even if the state restricts the right to own land to

a certain group of individuals, so long as competition is not restricted, land abundance will result in a class of landowners and a class of free wage laborers or a class of sharecroppers, not in labor coercion.⁴⁵ How much coercion the state is willing to apply we will assume will depend on the rate of return to the state on the application of coercion.

2. Examining the African experience, Thomas and Bean noticed a clear link between slave hunting and depopulation. They suggested that enslaving was analogous to fishing in an open access fisheries and that depopulation could be likened to the depletion of fish stocks that ensues in that case, the classic problem studied by the economic theory of common property resources.⁴⁶ It may be reasonable to think, therefore, that the indigenous depopulation that accompanied Spanish enslavement of American Indians may be similarly consistent with the theory of common property resources, and that it may be attributed in part to the same causes. Moreover, if the consequences of enslaving are consistent with what the theory of common property resources predicts will happen to commonly owned resources, it is reasonable to think that observed responses to the over-exploitation of a common property resource like labor may be similarly consistent with policy measures which economists specializing in natural resource management recommend to prevent depletion of the resource and dissipation of its rents. The congregación, encomiendas, and mandamientos, therefore, could be viewed in this light. One may expect the encomiendas and mandamientos, in particular to have a dual aim, one, resource conservation and, two, appropriation of the resource's rent. Finally, it is similarly reasonable to think that the chosen policies' prospective success or failure may be analyzed ex ante in terms of the same theory.

3. Consider now the free peasantry.⁴⁷ Its rise may be accounted for in

terms of a simplified model which captures the essential characteristics of the scenario we are considering, the extreme scarcity of labor relative to land. For simplicity we may imagine that labor is homogeneous and property rights on labor have emerged and are vested on the laborers themselves. Land, on the other hand, is infinitely abundant, equally fertile everywhere, and initially unowned. The model may or may not abstract from capital. In either case, the abundance of land reduces the number of factors by one so that the model will, in effect, be a one or a two factor model, respectively.

Assume for the moment that the only two factors of production are labor and land. Being scarce, labor will fetch a price; being abundant, land will not fetch a price, nor will it earn rent, provided we abstract from locational advantages. Under these conditions, and so long as private property rights are well defined and enforced, a free, small peasantry will arise. This result follows from implicit assumptions about the nature of the technology of production and of property rights delineation and enforcement: for reasons that Ricardo elucidated years ago, given that land is both evenly fertile and abundant in supply, the marginal product of labor will be constant and equal to its average product; the production function will therefore be a straight line out of the origin and the labor demand curve derived from it will be horizontal. Under these conditions, how much output is produced will be a function of the supply of labor. Output will increase or decrease as the labor supply of labor curve shifts to the right or the left. Techniques of production will -since labor is the scarce factor and land the abundant one- economize on the use of labor but not on the use of land. That is, given the labor supply and technologically determined labor/land ratios, land inputs will be automatically determined.

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Assume for the moment that the only two factors of production are labor and land. Being scarce, labor will fetch a price; being abundant, land will not fetch a price, nor will it earn rent, provided we abstract from locational advantages. Under these conditions, and so long as private property rights are well defined and enforced, a free, small peasantry will arise. This result follows from implicit assumptions about the nature of the technology of production and of property rights delineation and enforcement: for reasons that Ricardo elucidated years ago, given that land is both evenly fertile and abundant in supply, the marginal product of labor will be constant and equal to its average product; the production function will therefore be a straight line out of the origin and the labor demand curve derived from it will be horizontal. Under these conditions, how much output is produced will be a function of the supply of labor. Output will increase or decrease as the labor supply of labor curve shifts to the right or the left. Techniques of production will -since labor is the scarce factor and land the abundant one- economize on the use of labor but not on the use of land. That is, given the labor supply and technologically determined labor/land ratios, land inputs will be automatically determined.

Since the marginal product of labor equals the average product and given that competition equates them both to the wage rate, total output will equal the wage bill and all output will accrue to the laborers themselves. If labor and land are complementary in production, by the same logic that we envision all final output belonging to the laborers, we can envision the laborers holding the land they cultivate in private property. Although techniques of production will tend to be land intensive, peasants will have no incentive to accumulate more land than they can work alone or with the help of their families. In addition to being owned by those who work them, therefore, farms will tend to be small and fairly equal in size. The nature of property rights on labor determine the land tenure system, not the other way around.

For as long as land remains abundant land rent will be zero. Land owners, therefore, will not hire laborers, nor will laborers hire themselves out to landowners for less than they can earn working land of their own, which under the assumed conditions they can readily obtain; consequently, land will be worked by individual proprietors without the help of hired labor. Since we are abstracting from locational advantages, locational rents will not arise, nor will a market in land. Neither would we expect to observe a wage labor force or share cropping, since both presuppose that land has become scarce. Property rights on commodities will be vested on the laborers, and the exchange of commodities, if it exists, will take place according to their labor content. The same goes for the means of production. Thus, although private property in land has arisen, so long as land remains abundant exchange proceeds as Smith had visualized it in his "early and rude" state of society preceding stock accumulation and land appropriation.⁴⁸ The number of peasant holdings will grow with the peasant population which, *ceteris paribus*, may be

expected to be a direct function of the difference between peasant output and the peasantry's subsistence requirements, among other variables.

The preceding results clearly depend on property rights being enforced at zero cost. In reality, however, enforcing property rights is costly and, in particular, requires that coercion be applied. In all but the simpler societies the coercion necessary for the enforcement of property rights requires a state, whose degree of complexity will vary with the nature of the property rights system. Without enforcement by the state the free peasantry that will arise in response to free competition and land abundance is not likely to persist, no matter how violence potential is distributed among peasants. An uneven distribution of coercive capabilities among the peasants may lead some of them to attempt to enslave or enserf others, for the purpose of appropriating some portion of the difference between the marginal product of labor and the subsistence requirements of labor. Should the distribution of coercive capabilities among the peasants be initially equal it will tend to become unequal, because incentives will exist for peasants to innovate the technology of coercion for the purpose of appropriating some of the labor rents of those that do not.

Whether the social structure that will arise to apply the coercion required to defend property rights under conditions of land abundance will be a predatory or a contract state, however, is not clear. Early political philosophers like Locke thought that land abundance would lead to a small peasantry and a representative democracy. On the other hand, we have already made reference to modern anthropological evidence from Amazonia which suggests that -while land abundance does tend to yield something akin to a small peasantry- only very simple forms of political organization tend to arise in

such a setting. Forms of political organization sufficiently complex to be called a state tend to arise only when land becomes comparatively scarce, to exclude others from the scarce land. In their more advanced expressions these tend to resemble predatory states rather than contract states. Whatever form of state arises, the state may be supported from revenues levied on labor income but not on land rent.

4. Assume now that land is of uneven fertility or alternatively, that while being evenly fertile it is not infinitely abundant. In fact, both instances are equivalent, as Wicksteed first demonstrated. Let us preserve the distinction for expository purposes. Should land be unevenly fertile, intramarginal land will yield rent, which may be taxed to protect property rights on land up to the margin. Extramarginal land remains unowned.

Population growth in a closed economy context where land is evenly fertile will eventually lead to land scarcity. Alternatively, in an open economy context land scarcity may result from population growth or from an increase in foreign demand for land intensive goods that raises their prices and causes land rent to appear. There will now be reasons for landlords to hire laborers or for share cropping to arise rather than to coerce labor, but again, whether or not competitive conditions prevail will depend on the state, which even here could reduce labor mobility if the difference between the marginal product of labor and the subsistence requirement of laborers are large enough.

III. Interpreting the evidence

1. One can gain insight into the initial conditions Spaniards encountered by recalling that abundant, evenly fertile land yielding no rent

leads to a peasantry, and that differentially fertile land yielding rent leads to greater differentiation in the social and political structure. Analogously, under conditions of land abundance such as obtain in the Amazonian forests, population growth leads to competition that can be resolved fairly peacefully by the spread of small population groups throughout the available forest land, for reasons similar to those discussed above. Abundant resources earn no rent and, therefore, do not justify defining property rights, defending these rights, or resolving disputes over them, which will tend not to arise anyway. Groups need not compete militarily or otherwise for the abundant resource. Thus, land abundance and the associated lack of competition will reduce the need for a military and a legal apparatus aimed at protecting property rights and resolving disputes between competing claimants to them. The virtual absence of the state observed under these conditions is consistent with the findings of game theory that "wealth maximizing individuals will usually find it worthwhile to cooperate with other players when the play is repeated, when they possess complete information about other players' past performance, and when there are small numbers of players."⁴⁹ That wars -to the extent they exist- should be waged for the capture of slaves and wives would appear to be consistent with the fact that labor is relatively scarce relative to land.

Incentives exist for more complex forms of state and, consequently, taxation, to arise where a) land is not evenly fertile everywhere and, therefore, may be said to yield a differential rent over which competition arises, and which requires exclusion to prevent the resource from being overused and the rents it would otherwise yield to be dissipated, or b) where land is of even quality but the growth of population has given rise to locational rents. Evidently, a) applies to communities that had settled on the

varzeas, such as the Carios. Access to varzeas may be purchased with valuable goods, slaves, or labor services, in which case we would expect trade and labor coercion to be known to indigenous dwellers of varzeas and forests.

Pre-Columbian Paraguay may be viewed as a particular case of the varzea-forest setting described above.

2. Such a varzea-forest setting as was just described was precisely the setting on which mercantilist Spanish colonization of Paraguay imposed itself. Generally regarded until recently as a system of government intervention to artificially create balance of trade surpluses, mercantilism is again being thought nowadays as the fiscal system of predatory states which -unconstrained by their constituents- freely use their discriminating monopolist position to raise revenue by selling rent creating regulation at prices reflecting their ability to price discriminate among regulation demanders. The theory of the single ruler, revenue maximizing, predatory state is put forth by North.⁵⁰ An application cast in rent-seeking terms is Baysinger, Tollison and Ekelund's analysis of French and British mercantilism. Spanish mercantilism may be viewed in similar fashion.

Isabel and Ferdinand's de facto appropriation of the natural and labor resources of America by right of conquest was lawfully sanctioned by a Papal bull, which the crown obtained by assuming the Church's responsibility of converting the aboriginal Americans to Catholicism.⁵¹ As their proprietor, the crown could utilize those assets for its own profit, i.e., it could try to maximize the discounted future stream of net income that they could yield. To that effect the crown could assume the risks of conquering, colonizing, and exploiting the resources, to that effect hiring individuals under a wage contract, monitoring their activities, and so on. Alternatively, the crown

could cede its rights over these resources to private entrepreneurs in exchange for either a lump sum payment or a share of the profits that they would derive from exploiting them. Whether or not it did so would depend on the crown's attitude towards risk, its access to information about conquest opportunities vis-a-vis those of individuals, and its ability to monitor agents. Even if conquistadors were subject to greater risk than the crown, under information asymmetry and costly monitoring, it would have been in the crown's interest to share profits with conquistadors rather than employing them under a salary contract or selling off conquest rights to them for a lump sum payment. That is, it would have been in the crown's interest to choose to share profits with conquistadors if the latter could obtain information about conquest opportunities relatively more effectively than the Crown, and if crown monitoring of its agents' actions were comparatively costly. It has also been argued that "(r)iskiness to conquistadors would have made it irrational for the crown to sell off conquest rights for a lump-sum payment and not share in the returns, assuming the returns are sufficiently detectable."⁵²

The conquest and colonization of America, therefore, may be seen as a joint venture between the Spanish state and private entrepreneurs. To make it worthwhile for private entrepreneurs to risk their resources in pursuit of royal ends of discovery, conquest, and colonization the crown establishing a system of incentives that permitted the individuals in question to obtain a portion of the rents that these resources could produce. The crown's share usually took the form of a tax payment, which in the case of mineral ores was the royal fifth, twenty per cent of the refined metal. Crown associates obtained the residual.

The expected rate of return of investment was higher in the more densely

populated highlands of Mexico and Peru, because there lay deposits of precious metals in scarce supply in Europe, a relatively large indigenous population with a highly evolved division of labor, a relatively high agricultural and artisanal labor productivity, and systems of public finance and labor coercion that had supported fairly large state and religious bureaucracies before Columbus and which were easily adapted to Spanish aims.

In the American lowlands, on the other hand, there appeared to be no deposits of precious metals and, while land was abundant, the indigenous population was sparse, its labor productivity was comparatively much lower and, consequently, population groups were much smaller, nomadic or semi-nomadic, and more thinly spread. Taxation could produce sufficient revenues to sustain only a very simple form of state and religious organization, and revenues could not increase without substantial -and, therefore, costly- modification of indigenous social structures.

Under these circumstances one would have expected privately and publicly owned resources to flow towards the highlands and away from the lowlands, which is what in fact happened. However, to defend the more profitable areas of its domains from encroachment by competing rivals, both indigenous and European, Spain needed to settle the frontier areas and had to offer its agents sufficient incentives to induce them to do so. In the frontier region we are considering there were no precious metals, land was relatively abundant, and the relatively scarce resource was the indigenous labor force; Consequently, land had little or no value, only labor could, in general, produce rents.⁵³ Therefore, some system of property rights on the scarce factor labor had to be designed to allow part of the rents that would have accrued to indigenous laborers if these had remained free to be channeled

towards the crown's peninsular vassals. Thus, inducing Spanish colonists to remain in the frontiers implied some form of labor market regulation by coercion, since only by curtailing labor mobility could the wage rate and the marginal product of labor be made to diverge and the difference could be appropriated by non-laborers.

3. It is easily understandable, therefore, that the crown should have initially allowed indigenous enslavement to take place. The conquest itself had resulted in military confrontations which yielded captives that Spaniards and their local indigenous allies shared among themselves. Furthermore, once it was clear that Peru would be reached through Panama and the Pacific coast, it was to be expected that Spaniards in Asunción should have turned their attention to enslaving American Indians, their former allies included, even if the slaves thus obtained could only produce goods to be consumed by the Spaniards locally: hopes that mines would be found in the Rio de la Plata area remained alive, and even if that search proved futile in the end, past experience suggested that an agricultural commodity for export might still be produced if slave labor were to be available. Finally, the tax revenues the crown obtained from enslavement helped support royal officials in the area and defend the colony.

The enslavement of American Indians, however, had deleterious public finance implications which past experience elsewhere in the New World had already made evident to the crown; although Spaniards were supposed to pay the crown a head tax per indigenous slave they captured or bought from other indigenous people, free American Indians also owed the crown a tax for the protection that it presumably afforded them; American Indians were -after all- free vassals of the crown. The negative long term effects of the enslavement-

induced decline of the free indigenous population and the consequent shrinking of the potential tax base, therefore, could soon be expected to offset the short term public finance advantages the crown derived from indigenous enslavement, as it already had in regions conquered earlier.

Thus, as the "Adelantados" (individuals the crown had authorized to undertake the conquest of Spanish America) completed their task, the crown sought -and found- ways to amend the terms of the "capitulaciones" (contracts) it had signed with them specifying the conditions in which the conquest would be conducted and the manner in which the proceeds would be divided.

Invariably, the crown curtailed the Adelantados' political and economic powers sooner or later and ultimately replaced them by salaried officers of the royal bureaucracy designated by the king. This political struggle was a necessary prelude to the economic struggle for control of the indigenous labor force, which hinged on imposing the *encomienda*. Control of land was secondary and, therefore, the struggle was less concerned with it. This suggests that once the conquest of a certain region was secured, the crown invariably sought to change the original distribution of rents in its favor by imposing the *encomiendas*, which achieved this aim in a manner that will become clear below.

4. When closely looked at, it becomes apparent that the *encomiendas* were more than a system of coercively extracting indigenous labor services. Actually, they were a transaction, more specifically, a tax-farming scheme by which the crown exchanged royal grants of indigenous labor services for some form of compensation. That the *encomienda* was a transaction may be seen from the fact that its terms were clearly specified in a legally binding contract which was recognized by colonial courts. The crown farmed out to "worthy Spaniards" the right to collect for themselves in labor services the tax

indigenous people owed the crown and which royal officials would otherwise have had to collect.⁵⁴ In exchange, these encomenderos committed themselves to pay certain taxes to the Royal Treasury, to render military service to defend the colony and, in addition, to protect, convert, and acculturate their indigenous charges as well.⁵⁵

The encomiendas helped the crown attain this aim as follows: as was already pointed out, indigenous peoples were vassals of the crown and, as such, deserved its protection, for which they had to pay the king a tax. However, in the region of concern to us American Indians were much less able to pay taxes than in other regions of the Spanish American empire, because of their comparatively lesser degree of agricultural development and practically non-existent commerce. While in the regions of comparatively more developed agriculture and trade the colonial administration could profitably tax indigenous production, obtaining revenues in kind and in money, in those where these activities were comparatively less developed the costs of collecting taxes in kind frequently exceeded the value of tax collections. Collecting taxes was an unprofitable undertaking owing to high transaction cost: local auction markets for agricultural produce were relatively thin, revenues in kind were perishable, and the high cost of transportation by land and water made it difficult to transport revenues to other regions of America or to Spain, where they might be more advantageously auctioned off.

Private Spanish colonists in Paraguay, on the contrary, could devote the output of indigenous agriculture to more profitable use than the crown. Not only could they consume in situ the provisions indigenous people furnished, but they could also raise indigenous labor productivity significantly if they could subject the indigenous labor force to a more disciplined work regime.

Output per head could increase even more if they could set indigenous laborers to work with iron tools, which they themselves recognized to be superior to stone tools and sought eagerly. By permitting serfdom to be imposed, therefore, both output and taxable income could be increased.

In addition to agreeing to pay the king certain taxes, encomenderos committed themselves to help defend the colony against external and internal enemies. In this way the crown saved itself the expenses of supporting a specialized military force to defend the colony from external and internal threats, costs which given the colony's location on both the Indian and Portuguese frontiers, were not negligible and could be quite high. The cost of tax collection to the crown also decreased, since there were fewer encomenderos than there were indigenous tributaries. All of the functions encomenderos undertook to discharge were formal obligations of the Church that the crown had committed itself to carry out in exchange for receiving papal sanction to colonize the newly discovered lands.

The encomienda, consequently, was but a particular case of tax-farming to which the crown resorted to increase its revenues and reduce its expenditures, that is, to maximize its fiscal resources. That this should have involved turning free vassals of the crown into serfs involved some inventive ideological justification, but nothing that went beyond the capabilities of crown ideologues.

5. In conjunction with the congregación, the encomiendas also served the purpose of reducing the depletion of indigenous labor, a scarce resource that Spaniards were exploiting as if it had been an abundant one because they could in fact regard it as a common pool resource.

That the problem of indigenous depopulation, in so far as it was induced

by enslavement, can be thought of in terms of the economic theory of common property resources is suggested by the consistency between the observed phenomenon and the predictions of the theory as well as by the fact that the crown's attempt to cope with it involved the choice of policy measures similar to those favored by economists to reduce overuse of commonly owned resources.

In the face of indigenous depopulation and its negative implications for public finances, the crown declared indigenous slavery illegal except in cases of "just wars," that is, it denied individuals the right to appropriate by force indigenous labor power without royal authority. In other words, the crown reaffirmed its property rights on the indigenous labor force.⁵⁶ Secondly, the crown not only outlawed the damaging rancheadas, but segregated Spaniards and American Indians subject to the "mita," requiring each of them to live in towns of their own, apart from one another. Concomitantly, the crown allowed only selected individuals to obtain -for a fee- licenses authorizing them to use the labor services of indigenous people under specified conditions.⁵⁷ Only the encomenderos, the town supervisor, and the priest that was supposed to christianize the residents could have access to Indian towns. Third, by comparison to what was required of indigenous slaves, the crown reduced the length of time and the range of labor services that indigenous people subject to the mita were obliged to render to their masters. As time went on, furthermore, the crown progressively curtailed the length of required labor obligations, which was reduced from around six months in mid sixteenth century to two month early in the seventeenth century. Thus, the terms of the original encomiendas, granted in mid sixteenth century, were much more onerous than those of the encomienda early in the seventeenth century.⁵⁸ At the same time that the congregación reduced to towns many indigenous

communities, it also curtailed their freedom to move about. That is, it accomplished the double aim of protecting indigenous people from Spaniards, thus reducing the depopulation caused by enslavement and pathogens, and restricting their freedom of movement, a necessary condition for extracting some of the labor rents.

Measures like the assignment of property rights on laborers to licensed trustees, the imposition of limits on the number of indigenous laborers that could be made to work at any one time, and the appointment of "alcaldes de sacas" are too similar to those that would be imposed to restrict access to fisheries to be coincidental and, generally speaking, their stated intention was the same, i.e., eliminating the dissipation of rents. In this particular case, arrangements to reduce the dissipation of rents also aimed at making it possible for the state to appropriate a larger fraction of labor rents as well. Many of the features of the encomienda and the congregación can be more fully appreciated when viewed in this light.

The behavior of the indigenous population once it was confined to segregated towns to which unauthorized Spaniards were denied access suggests that enslavement may account for a portion of the variation in population. Though still subject to periodic bout of epidemics, it appears that the population of indigenous towns recovered faster the less varied and less onerous the labor services they were expected to render. Thus, the rate of decrease of the indigenous population slowed down after the indigenous people subject to the encomienda mitaria were confined to towns. In the Jesuit missions, where they were exempted from the encomienda, the indigenous population actually grew, even though these missions continued to have contact with Spaniards.

6. That a small mestizo peasantry should have emerged and eventually predominated over the forms of coerced indigenous labor that preceded it imply that the previously cited mechanism of coercion were not applied to mestizos and that, on the contrary, their rights were well defined and enforced. In fact, when their fathers so recognized them and the governor concurred, mestizos were legally exempt from the encomienda, an exception that the courts enforced. Due to the absence of Spanish immigration, mestizos actually occupied many of the positions of "criollos," Indies-born children of Spaniards, although public office and encomiendas continued to be preferentially assigned to Spaniards and criollos. Thus, following the original distribution of encomiendas in Asunción, Spaniards as well as their mestizo offsprings left for areas to the north and east, where there were relatively large concentrations of still untrusted indigenous people who could be subjected to the encomienda mitaria or, if they refused, enslaved. Once the still untrusted population disappeared, however, the by now mostly mestizo population had to rely on their own labor and the still abundant land for a livelihood, that is, they became peasants. As the scarcity of indigenous laborers became even more pronounced and the encomiendas stagnated, encomenderos attempted to entrust mestizos but they were unsuccessful because mestizos were legally ineligible for subjection and the colonial courts enforced that exemption. Thus, it was the government's intervention to enforce property rights that allowed a free peasantry to remain free when economic forces would have led to its bonding. As the population grew and foreign demand for Paraguay's exports increased, following the Borbonic Reforms in particular, lands became scarcer, rent on land emerged, and the land frontier was pushed farther out by family farms.

IV. Is the Analysis Robust?

Confidence that the analysis is robust may be increased in at least two ways. The first requires that we derive from the model refutable implications consistent with the historical record. The second requires that the model be capable of accounting for events that were not used in its construction. Let us consider each of these two tests.

In the model we have presented, changes in relative prices of productive factors result in changes in the profitability of delineating and enforcing property rights over them. We saw that this notion is consistent with the fact that the indigenous population decline, by increasing the relative price of labor, furnished incentives for indigenous slavery to be substituted by the *encomienda* and *mandamientos*. Conversely, once the population began to increase, the importance of labor force coercion declined and that of free labor increased. Now, as the indigenous population declined and the scarcity of labor relative to land increased, the increase in the price of labor relative to land should have given rise not only to a change in the profitability of different property rights sets but to a change in production techniques as well. Those previously considered efficient should have been displaced by others which more intensively utilized the relatively abundant and, therefore, cheaper, factor. In particular, we would have expected a fall in the relative importance of activities that used labor relatively intensively and an increase in the relative importance of activities that used land relatively intensively. In turn, these changes should have reflected themselves in the structure of production and exports; goods produced by techniques less intensive in labor and more intensive in land should have

begun to predominate. As will be seen below, this is exactly what we observe.

Until the 1570's, the economy was based exclusively on indigenous agriculture. Cattle raising, relatively less labor intensive than agriculture, was practically non-existent. All production was for local consumption. However, beginning in the late sixties and the early seventies, interest in cattle raising increased. In turn, the expansion of cattle raising was linked to the founding of new cities, the expansion of the regional market and, eventually, to the development of foreign trade. The structure of exports, which were initially made up mostly of cereals, sugar, and wines, began to change towards the early part of the seventeenth century. The early exports, which presupposed a relatively labor intensive agriculture, began to be overtaken by the 1630's by yerba mate, which did not require cultivation and could be harvested from trees that grew spontaneously in forests northeast of Asunción. We conclude then, that at least one implication of the model is consistent with the evidence.

In addition, differences in relative labor endowments made themselves felt in the choice of technique and of product in different sectors of the yerba industry. Thus, Paraguayans, who continuously complained of the scarcity of indigenous labor, produced for the most part caa-virá or "yerba de palos," a variety that required less processing, and never developed yerba mate plantations. The jesuit missions, however, where the labor was more abundant, were known for producing a variety of yerba that required more labor intensive processing (caá-mirí), and also developed plantations.

The analysis must also be able to account in terms of the model for features of Paraguay's colonial economy other than those so far described. At least two such instances may be mentioned. First, that on the one hand, as

the encomiendas stagnated early in the seventeenth century, the crown should have exempted the Jesuit missions from the encomiendas and should have refused several requests by encomenderos to cancel that exemption, while in the late eighteenth century it should have expelled the missionaries; and second, that in the eighteenth century, as population grew, land rents appeared, and foreign trade increased, the crown should have granted no new encomiendas, should have retaken possession of those whose terms had ended, and should have substituted the militia by a semi-professional army paid for out of revenues derived from taxation of foreign trade and land rents. Let me take these two instances one at a time.

The indigenous population of Jesuit mission towns grew rapidly from their inception. By contrast, that of Franciscan missions did not begin to grow until the mid-18th century and then only very slowly. Furthermore, under the direction of their Jesuit mentors, the missions contributed effectively to defense and, in addition, paid their taxes in money, punctually to boot. When indigenous people were congregated in missions under Jesuit oversight, segregated from Spaniards, and exempted from the encomienda, the stock of indigenous labor yielded much higher returns than it did when confined to towns founded by Franciscans, less isolated from Spaniards, and subjected to the encomienda. The crown had no reason, then, to yield to encomenderos and reimpose the encomienda on indigenous dwellers of Jesuit missions, and did not.⁵⁹ On the other hand, when the crown was able to resolve boundary problems it had with its Portuguese neighbor to the east, the Jesuit missions' usefulness was decreased. It is perhaps no accident that few years separated the expulsion of the Jesuits and the signing of the Treaty of San Ildefonso between Spain and Portugal, which settled the frontiers in the area under

discussion. Clearly, however, the crown's decision to expel the Jesuits from its domains may not alone, perhaps not even principally, be attributed to decreased defense needs.

Second, in a period of rising wages, as the crown granted no new encomiendas, reclaimed the encomiendas it has leased out, and put the remaining indigenous population to work in state enterprises, the encomenderos' contribution to defense decreased and the crown's share of defense duties increased concomitantly. Therefore, a new military organization had to replace the old; furthermore, the system by which the colonial administration obtained contributions to defense from individuals in exchange for grants of labor was scrapped. In its stead, by the military reform of 1801 the crown created a semi-professional army remunerated mostly in money, not in labor, in land, or both.

For the above reasons, private encomiendas declined but they persisted for nearly as long as Spanish rule lasted. That it may have lingered on beyond its formal abolition in 1803 is suggested by the fact that when Paraguayans declared independence, one of their first measures was to reiterate that the encomiendas had been abolished, a measure by which they hoped to eliminate privileges as well as to increase the supply of labor and slow down wage increases, even if only slightly.

V. Conclusions

The previous description and analysis suggest that the case considered was but a particular instance of mercantilist regulation of a labor market. The state maximized fiscal revenues creating economic rents through regulation. It defended the property rights that created these rents investing

resources with an eye to how high a rate of return they were expected to obtain. Whether slavery or serfdom arose hinged on the degree to which the state enforced property rights, which in turn depended on the rate of return that activity was expected to yield to the state as compared to others. Indigenous slavery emerged when the single-ruler, revenue-maximizing, predatory mercantilist state, in order to provide incentives for private agents to settle this poor frontier colony, did not enforce its private property rights over the labor of indigenous people and allowed them to be regarded as a common property resource. Exploitation by private entrepreneurs of crown-owned indigenous labor along common property resource lines led to the depletion of the resource and the dissipation of rents that should have accrued to the crown. As the resource became more scarce and, therefore, more valuable, and to prevent further depletion and rent dissipation, the crown sought to regulate the exploitation of Indian labor by means of the *encomienda* and the *congregacion*. These regulatory institutions were similar to schemes for managing open access fisheries. They were intended to curtail access to the resource and reduce the dissipation of the rents it could yield to the crown. However, the system did not work well until it became clear that indigenous people could better contribute to colonial defense and crown coffers more when gathered in Jesuit missions than when entrusted to *encomenderos*. Only then were they exempted from the *encomiendas*. The growth of the mestizo population legally exempt from the *encomiendas* in time made labor relatively more abundant and land comparatively more scarce, a tendency that was exacerbated when the Borbonic reforms increased foreign trade and immigration. As land and foreign trade replaced labor as the state's predominant source of tax revenues, the crown abandoned the *encomiendas* in

favor of other institutional arrangements by which the state sought to provide defense and obtain revenues. The systems of indigenous labor coercion were nothing but mercantilism's system of monopolies as they applied to the labor market.

ENDNOTES

1. The name yanacona came to Paraguay with some of the men who escaped the repression that followed Pizarro's revolts in Perú, and was used in the early years of the colonial period. It later yielded to the term "originario," which was used to refer to American Indians "outside their town of origin." Mita comes from "mit'a," quechua for "turn." "Mandamiento," (from mandar = to send, to order) was known as coatequitl, alquilaje, or repartimientos in other regions of the Spanish American Empire. See Garavaglia, Mercado Interno y Economía Colonial, pp. 272 and 303).

2. See Carneiro, "A Theory of the Origins of the State." References to the link between relative land scarcity, property rights on land and labor, and the financing of the state in México may be found in Caso, "Land Tenure Among the Ancient Mexicans" and Florescano, Estructura y Problemas Agrarios de Mexico, 1500-1821. For Perú see Ramírez, "Indian and Spanish Conceptions of Land Tenure in Perú, 1500-1800."

3. As far as the early polygamy of Spaniards is concerned, documents of the period speak of each Spaniard having an average of 10 to 14 indigenous wives and characterize the scenario as "Mohammed's Paradise." See Susnik, El indio colonial del Paraguay Vol. I and, for the significance of exogamy to indigenous peoples of the area, Clastres, "Indépendance et exogamie: structure et dynamique des sociétés indiennes de la forêt tropicale."

4. (from the Spanish, "cuñado,a" = brother, sister in-law.

5. For the resistance by the Guarani see Susnik, *ibid.*, C. Pastore, La lucha por la tierra en el Paraguay, and Necker, "La réaction des Indiens Guarani à la Conquête espagnole du Paraguay," and Indiens Guarani et Chamanes franciscains.

6. Susnik, El indio colonial, vol. I).

7. See Rivarola Paoli, La economía colonial, p.91

8. See Necker, "La réaction.." and Indiens Guarani.. for a chronology of Indian uprisings against Spanish attempts to impose slavery and the encomiendas.

9. Enslavement had particularly pronounced depopulating effects because slave hunters sought women in particular and drastically altered the sex ratio of the indigenous communities affected.

10. See Susnik, El indio colonial, vol. I.

11. An encomienda was a temporary grant of specified, restricted labor services; it was not a land grant, nor did it necessarily imply a separate (simultaneous or subsequent) such grant. In fact, the most profitable use of encomienda labor did not require the ownership of any land at all. Encomenderos could use the indigenous laborers they were assigned to extract yerba mate from royally owned land by paying a fee for the privilege of so doing. In general, however, output cannot be produced with labor alone and, therefore, encomenderos also tended to

receive grants of land, but as a result of a separate grant.

12. On the congregación see Ots Capdequí, Instituciones sociales de la América Española en el período colonial, pp.62-69).

13. The privileges of the indigenous hierarchy included exemption from the tribute.

14. See Pastore La lucha.. and Susnik El indio colonial...

15. For the early founding of Indian towns by private Spaniards, see Azara (1847). Typically, Franciscan missionaries would found a town and, after a period of time leave it in the hands of a member of the secular priesthood, to go found another town elsewhere. Margarita Durán Estragó, Presencia Franciscana en el Paraguay: 1538-1824, pp. 93-164.

16. Silvio Zavala, Orígenes de la colonización en el Río de la Plata

17. See Juan Carlos Garavaglia, Mercado interno y economía colonial, p. 309.

18. See Velázquez, "Caracteres de la encomienda paraguaya en los siglos XVII y XVIII," p.143).

19. James S. Saeger, "Survival and Abolition: The Eighteenth Century Paraguayan Encomienda" p. 74.

20. Adalberto Lopez, "Shipbuilding in Sixteenth Century Asunción del Paraguay," quotes sources suggesting that the indigenous population was reduced to one tenth of its original numbers by the early sixteenth century. The most conservative estimate is given by Juan Carlos Garavaglia, Mercado interno y economía colonial, who suggests a fifty percent reduction.

21. For the ordinances see Julio Cesar Chaves, "Las ordenanzas de Ramirez de Velasco, Hernandarias, y Alfaro," pp. 107-120.

22. For the founding of the first Spanish towns and Jesuit missions in the Guayra see Ramon I. Cardozo, La antigua Provincia del Guairá y Villa Rica del Espíritu Santo.

23. See Garavaglia, Economía, sociedad, y regiones, p.141)

24. Alberto Armani, Ciudad de Dios y Ciudad del Sol. El "estado" Jesuita de los guaraníes (1609-1769).

25. See Thomas de Kruger, "Asunción y su área de influencia en la época colonial," p.41).

26. See Juan Carlos Garavaglia, Mercado interno y economía colonial pp. 353-379, and Economía, sociedad y regiones pp. 193-260. Also, Jerry W. Cooney, "The Yerba-Mate and Cattle Frontier of Paraguay, 1776-1811: Social, Economic, and Political Impact," and "Bureaucrats, Growers, and Defense: The Royal Tobacco Monopoly of Paraguay." For the late eighteenth century boom see Jerry W. Cooney,

"An Ignored Aspect of the Viceroyalty of the Rio de la Plata."

27. Direct evidence of the appearance of land rents can first be found around the 1780's.

28. See René Ferrer de Arréllaga, Un siglo de expansión colonizadora: los orígenes de Concepción for internal migration; Jerry Cooney, "Foreigners in the Intendencia of Paraguay," for the -by local standards- relatively large immigration that was observed.

29. For some of the state enterprises see Jerry W. Cooney, "A Colonial Naval Industry: The Fabrica de Cables of Paraguay," and "Paraguayan Astilleros and the Platine Merchant Marine, 1796-1806," and for the escheating of the encomienda to the crown see Saeger, "Survival and Abolition...", pp. 77.

30. For the 1848 dissolution of Indian towns by the state see Carlos Pastore, La lucha por la tierra en el Paraguay, pp. 127-132.

31. See Coase, Ronald, "The Problem of Social Cost."

32. For the argument that resources will be overexploited see H. Scott Gordon, "The Economic Theory of a Common Property Resource: The Fishery." For the argument that dissipation will occur along many margins see Cheung, Steven N.S. "The Structure of a Contract and the Theory of a Non-Exclusive Resource."

33. See Harold Demsetz, "Towards a Theory of Property Rights," and A. Alchian and H. Demsetz, "The Property Rights Paradigm."

34. For the original statement regarding the importance of measurement in delineating and enforcing property rights see Yoram Barzel, "Measurement Costs and the Organization of Markets."

35. See Douglass C. North and Robert P. Thomas, The Rise of the Western World, Ch. 3.

36. Conspicuous consumption may be said to be an alternative motive for demanding slaves, but it has been found to be an unimportant factor in the antebellum U.S. South. See A. Conrad and J.R. Meyer, The Economics of Slavery and Other Studies in Econometric History and Robert Fogel and Stanley Engerman, The Reinterpretation of American Economic History, pp. 311-341.

37. Laborers tied to the land are less mobile than slaves. Therefore, slavery can be more efficient than systems of labor coercion that tie the laborer to the land. See Robert Evans, Jr., "Some Notes on Coerced Labor." Other possible ways of curtailing labor mobility include, for example, the military draft, impediments to the free flow of individuals through national borders, and restriction on settlement outside of specified areas, such as the homelands of South Africa.