

Taxation, Coercion, Trade and Development in a Frontier Economy: Early and Mid Colonial Paraguay*

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Abstract. This article explores the effects of changing exposure to world trade and relative factor abundance on the institutional and economic development of a paradigmatic Spanish-American frontier colony, Paraguay. The problem is conceptualized within a neoinstitutionalist staples model in which – during the long sixteenth-century trade expansion – the colonial state delegated the provision of defence onto individuals who financed it by restricting indigenous labour mobility and extracting the resulting monopsony rents. Despite the *encomienda's* stated intentions, its inefficient incentive system actually contributed to the decline in indigenous population and provincial security shortcomings. As trade contracted and defence needs rose during the seventeenth-century crisis the crown commuted the labour services of Jesuit mission Indians for contributions to defence and payments in kind and money. The *mestizo* peasantry remained free, but was increasingly burdened with military obligations as well.

This article is concerned with economic development in a paradigmatic Spanish American frontier colony during the world trade expansion of the long sixteenth century and the crisis of the seventeenth century. It argues that growth of staple production and the requirements of conquest and defence, together with the relative scarcity of labour as compared to land led the cooperative relations that had originally been established between Spaniards and indigenous people in Paraguay to be displaced by successive forms of coerced indigenous labour. In particular, enslavement of indigenous people by private Spaniards contributed to the decline of the indigenous population and the imposition by the colonial administration of the *encomiendas* and the *congregación* among other state-run systems of compulsory labour. The incentive system embodied in the *encomienda* and the *congregación*, however, kept them from succeeding in their intended aim of protecting the indigenous population, which continued to fall. As

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staple production declined, beginning in the early seventeenth century, and defence requirements increased, beginning in the late 1630s, the crown shifted away from the inefficient *encomienda* as a way of providing for colonial defence and commuted the compulsory labour requirements of the indigenous people of Jesuit mission towns for money tax payments and military service. The indigenous population of the Jesuit missions correspondingly increased and their welfare improved, whereas that of Franciscan towns still subject to the *encomiendas* continued to decline. At the same time there arose a *mestizo* small peasantry free from compulsory labour service requirements to seigneurs but saddled with onerous military service obligations to the state.

Forced labour may be seen as a form of tax payment, and may be used to finance the provision of military services. In turn, the nature of property rights and of their enforcement – on labour resources in particular – can affect the character of economic activity. It is argued here that this basic insight – when placed in the context of a staples growth model – can help explain the interaction between institutions and economic development on the Spanish American frontier. The interpretations thus derived are strikingly consistent with the record, and deserve careful attention for that reason.¹

The article is organized as follows: Section I describes the background, American and European, and the largely voluntary relations observed early on between Spaniards and American Indians. Section II discusses the transition to indigenous enslavement, the behaviour of the indigenous population, abolition and the alternative forms of labour coercion and confinement that were imposed on indigenous people over the course of the second half of the sixteenth century, in particular, the *encomiendas*, *mandamientos* and *congregación*. Section III considers the partial commutation of compulsory indigenous labour services, which was largely accomplished during the crisis of the seventeenth century, and the rise of a free *mestizo* peasantry. In each case consideration is also given to the relation of the organisation of taxation, defence and labour to trade and economic performance. Section IV presents the conclusions.

I. Pre-Columbian background and the first encounter

The vast area between South America's Atlantic coast and the foothills of the Andes was sparsely occupied by the Guarani-speaking Caribs. Early

¹ For the statement that forced labour may be seen as a form of tax payment see J. R. Hicks, *A Theory of Economic History* (Oxford: Oxford University Press, 1969), pp. 12–16. A good review of the literature on the staples growth model since it was first sketched by Adam Smith may be found in John J. McCusker and Russell R. Menard, *The Economy of British America, 1607–1789* (Chapel Hill and London, 1991), pp. 17–34.

conquest accounts report, and anthropologists confirm, an aboriginal tendency to concentrate more heavily along the periodically flooded, more fertile banks of large rivers, the so called *varzeas*, to a density of 33 persons for 100 kilometres along the Upper Parana river and 28 persons per hundred square kilometres in Central Paraguay.² This suggests a tendency for population to be denser where the greater fertility of land generated what may be called a higher land rent, rather than on the more rapidly exhausted forest lands.

In addition, forms of political organisation also seemed to be more complex where rent was higher. The forms of political organisation of the forest communities were relatively simple. They waged war to capture slaves and wives, but not for the possession of land, which was abundant. When population grew, these forest communities simply split, the new groups moving on to previously unoccupied areas in the forest. This suggests that population growth on any given forest location led to decreasing marginal product of labour and to increased competition, which if land was abundant could be resolved fairly peacefully by the spread of small population groups throughout the forest. Abundant resources earn no rent and so do not justify the assertion of property rights over them, the defence of these rights, or disputes over them (which will therefore tend not to arise). Land abundance and the associated lack of competition for land resources will reduce the need for a military and a legal apparatus aimed at protecting landed property rights and resolving disputes between competing land claimants.³ Waging wars to capture slaves and wives and the minor scale of slavery are consistent with the scarcity of labour relative to land and the relatively limited coercive capability of private agents and collective organisations to prevent flight.

More complex forms of political organisation tended to appear where there were *varzeas*, and aimed at excluding some of the groups that competed for them.⁴ More complex forms of political organisation also seemed to arise in forest areas where agglomeration obtained, and for

² On the settlement pattern see Elman R. Service, *Spanish-Guarani Relations in Early Colonial Paraguay* (Westport, Connecticut, 1954), p. 14; the density estimate is taken from Julian H. Stewart, *Handbook of South American Indians*, 6 Vols. (Bureau of American Ethnology, Bulletin 143, 1946–50), 5, pp. 659, 662, Map 16, cited in Service, *Spanish-Guarani Relations*, p. 14.

³ The virtual absence of the state is also consistent with the findings of game theory that wealth maximising players will usually find it worthwhile to cooperate with other players when the game involves few players, when they possess complete information about other players' past performance, and when the play is repeated. Douglass North, *Institutions, Institutional Change, and Economic Performance* (New York, 1991), p. 12.

⁴ See Robert Carneiro, 'A Theory of the Origin of the State', *Science*, vol. 169 (August 1970), pp. 733–8, which suggests that something similar seems to have occurred in the highlands of Mexico and Peru, where more complex forms of state and labour coercion also seem to have arisen first where the scarcity of land made itself felt earlier.

similar reasons. Both of these observations are consistent with the theoretical expectation that the absence of property rights will lead to the dissipation of differential and locational rent and, therefore, that incentives will exist for more complex forms of state political organisation and taxation to arise, to define and enforce property rights as well as to prevent resource over-exploitation and rent dissipation. It was on such a setting that the Spanish colonisation of Paraguay imposed itself.

In early modern western Europe innovations in the technology of war led to political centralisation and mercantilist expansion,⁵ Spain under Isabella and Ferdinand being one of the first instances. Neo-institutionalism views mercantilism as the fiscal system of predatory states which use their positions to maximise net revenue through the sale of rent-creating regulation at prices that reflect their price-discriminating ability. According to this theory a predatory state will have two objectives: the first, to provide a set of property rights that will maximise rents to the ruler, the second, to lower transactions costs in order to permit output and tax revenues to increase. Both may lead to regulations that restrict entry and supply, and to comparatively slower growth. However, less efficient rulers may be forced by competition to introduce innovations in the structure of property rights so as to lower transactions costs and allow growth to take place. Institutional innovation may also arise from changes in relative factor prices or from new technologies of coercion, of production, or of transaction. Rulers may be more likely than constituents to effect institutional innovation because the free rider problem will discourage private collective action.⁶ These are most appropriate terms in which to conceptualise the early modern Spanish monarchy.

The Catholic Kings' *de facto* appropriation of the natural and labour resources of America by right of conquest was sanctioned by Pope Alexander VI's bull of 1493. In exchange the crown assumed the church's responsibility of converting the aboriginal Americans to Catholicism and of collecting the ecclesiastical tithe, from the proceeds of which it could keep the so-called 'two-ninths'. The terms of this agreement were reflected in the contractual arrangement referred to as the *Patronato Real*.

As a private proprietor, the crown could be expected to try to maximise the discounted future stream of net income its New World assets could yield.⁷ For that purpose the crown might assume the risks of conquering,

⁵ See Ronald Batchelder and Herman Freudenberger, 'On the Rational Origins of the Modern Centralized State', *Explorations in Economic History* Vol 20 (1983), pp. 1–13.

⁶ See Douglass C. North, *Structure and Change in Economic History* (New York, Norton, 1981), ch. 3.

⁷ That New World assets were indeed privately owned by the kings of Castile and Aragon has been pointed out by numerous historians. See, for an example, Lewis Hanke, *The Spanish Struggle for Justice in the Conquest of America* (Philadelphia, c. 1949).

colonising, and exploiting the resources, 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 for a share of the profits that the resources would yield. Which option the crown selected would depend on its attitude towards risk, on the ease of access to information about conquest opportunities, and on its ability to monitor agents as compared to the monitoring capacities of individuals. Even if the crown was subject to greater risk than *conquistadors*, under information asymmetry and costly monitoring it would have been in its interest to share profits with them – which is what happened – as opposed to employing them under a salary contract or selling them conquest rights for a lump sum payment.⁸ The conquest and colonisation of America, therefore, was a joint venture between the Spanish state and private entrepreneurs. To raise the rate of return on investment in exploration, conquest and colonisation the crown established the so-called ‘system of monopolies’, which created economic rents that the crown and individual entrepreneurs could share. 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 extracted.

The American lowlands and the highlands differed in their factor endowments. In the lowlands land was relatively abundant but deposits of precious metals were not; the lowland indigenous population was sparse, population groups were much smaller, nomadic or semi-nomadic, and more thinly spread; labour productivity was comparatively much lower. Taxation could produce sufficient revenues to sustain only very simple forms of state and religious organisation. In the highlands, by contrast, the indigenous population was relatively more dense, had a more highly evolved division of labour, and higher agricultural and artisanal labour productivity. Highland systems of public finance and labour coercion had supported a fairly large pre-Columbian state and religious bureaucracies and were easily adapted to Spanish aims.⁹

In the lowlands, the relatively high land-to-labour ratio suggests that had property rights been well defined and enforced rent would have been very small or zero, most or all of the output would have accrued to

⁸ 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’. See Ronald Batchelder and Nicolás Sanchez, ‘The Encomienda and the Maximizing Imperialist: An Interpretation of Spanish Imperialism in the Americas’, Working Paper no. 501, Department of Economics, UCLA, 1988, p. 11.

⁹ See Elman R. Service, ‘Indian–European Relations in Colonial Latin America’, *American Anthropologist*, vol. 57 (1955), pp. 411–25.

labourers as wages, and the state would have derived comparatively fewer revenues from land rents relative to the cost of revenue collection. The nomads of the lowlands were also typically harder to conquer. Furthermore, lowland colonies were more open to encroachment by mercantilist rivals and more difficult to defend. On the other hand, mineral land may be viewed as more scarce land yielding a differential rent that the crown could tax. In addition, mineral-rich colonies tended to be populated by more settled peoples, which were more easily subdued. These colonies were also located inland and in the highlands, and were therefore more easily defended.

Highland and lowland colonies, therefore, typically displayed different combinations of expected profitability and risk. The crown, therefore, may be said to have faced a portfolio selection problem. Given that the expected rate of return on investment was higher and risk lower in the more densely populated highlands than in the lowlands, portfolio selection theory would have led one to expect the crown's portfolio to be concentrated in highland colonies, which is what in fact happened. However, supplying and defending the more profitable domains of Mexico and Peru from encroachment by competing rivals – indigenous and European – required frontier colonies to be settled. To induce private agents to do so the crown had to offer them sufficient incentives which, for revenue-maximising reasons, had to be furnished by New World resources. In frontier regions only labour could, in general, produce rents, since land had little or no value. Consequently, inducing Spanish colonists to remain in the frontiers implied some form of labour market regulation by coercion, since only thus could the mobility of indigenous labour be curtailed and the wage rate and the marginal product of labour be made to diverge so that the difference could be appropriated by Spanish non-labourers in both the private and the public sectors.¹⁰ Employers who forcefully curtail the mobility of labour effectively create a labour market monopsony. In the Spanish American system of monopolies the labour market took the form of coerced labour.

Curiously, however, the early Spanish military '*huestes*' in Paraguay first sought to attain their aims mostly by voluntary associations with friendly

¹⁰ This is not to say that one would not expect labour coercion to emerge in the highlands. Labour coercion may arise even if land has become scarce, as Domar's 'Causes' contents was the case in the Russian Ukraine. That the incentives of the lowlands paled by comparison to those offered by the highlands is suggested by the fact that, between 1535 and 1598, direct migration from Spain to the River Plate through the Atlantic (not Peru) was not much above the minimum of 3,087 calculated by Richard Konezke, 'La emigración española al Río de la Plata durante el siglo XVI', in Günter Kahle and Horst Pietschmann (eds.), *Lateinamerika. Entdeckung, Eroberung, Kolonisation. Gesammelte Aufsätze von Richard Konezke* (Köln: Böhlau Verlag, 1983), p. 428.

American Indians. While trying to reach Peru they generally traded with the Carios for the labour services and goods they needed. This was the so-called 'first service'.¹¹ The mutually beneficial alliances Spaniards and Carios formed were cemented in the customary indigenous manner, that is, by trade and the polygamous marital unions of Cario women to Spanish men.¹² From these arose a *mestizo* population and kinship ties between Spaniards, Carios, and their *mestizo* offspring. Particularly important among these kinship relations were those between in-laws, which had mediated the exchange of voluntary, reciprocal labour services among indigenous tribes and initially served the same purpose between Spaniards and Carios. For this reason the resulting system of reciprocal labour services came to be known as the *cuñadazgo*.¹³ Polygamy had an economic rationale for both Spaniards and Carios. The more indigenous wives, the more indigenous in-laws a Spaniard had, and the more permanent and occasional help he could obtain. Exogamy benefitted the Carios as well, since it turned a potentially devastating enemy into an ally, albeit at a price.¹⁴

This voluntary '*primer servicio*', however, came under pressure, and began to yield to enslavement. The western '*entradas*', so-called, required outfitting and porters, which made indigenous women particularly valuable because they were responsible for performing agricultural and other heavy chores in their own communities. Pressed to reach Peru before other Peninsulars did so from the Pacific, the Spaniards in Asuncion quickly turned the '*cuñadazgo*' into a vehicle for coercively exacting progressively greater amounts of labour from their Cario 'relatives'.¹⁵ In particular, they came to use their 'wives' as slaves, exchanging them freely among themselves for clothing, horses, etc. These increased Spanish demands were responsible for some indigenous uprisings against the Spaniards.¹⁶ In addition, the joint military

¹¹ On the '*buestes*', see Rafaél Eladio Velázquez, 'Organización militar de la Gobernación y Capitanía General del Paraguay', *Estudios Paraguayos*, vol. V, no. 1 (Junio 1977), pp. 28–31. The Carios valued iron tools highly, and quickly substituted them for their own stone instruments. On the 'first service', see Juan Francisco de Aguirre, 'Diario del capitán Juan Francisco de Aguirre (1793–8)' in *Revista de la Biblioteca Nacional de Buenos Aires*, vols. XVII (1947), XVIII (1948), XIX (1948), and XX (1949).

¹² Documents characterise the scenario as 'Mohammed's Paradise'. According to them, some Spaniards were said to have had up to seventy or eighty wives, while 'one who is poor' had only five or six. However, Service, *Spanish–Guarani Relations*, suggests an average of three indigenous women per Spaniard (p. 34).

¹³ From the Spanish, 'cuñado, a' = brother-in-law, sister-in-law.

¹⁴ On exogamy see Pierre Clastres, 'Indépendance et exogamie: structure et dynamique des sociétés indiennes de la forêt tropicale', in *La société contre L'état* (Paris, 1980), pp. 43–68.

¹⁵ See Garavaglia, *Mercado Interno*.

¹⁶ Among them that of 1545, which the Spaniards put down with the aid of two thousand loyal Indians. See Service, *Spanish–Guarani Relations*, p. 22.

expeditions to the west produced numerous captives that Spaniards and Carios divided up as slaves among themselves.

II. *The early colonial economy to the 1630s*

This section will first discuss indigenous slavery, which in Paraguay arose in earnest after being legally abolished from the Spanish American empire as a whole. However, slavery was replaced in the short term by other forms of coerced indigenous labour inspired by those imposed in the Iberian peninsula, but peculiarly adapted to the American frontier. These were the ‘*encomienda de la mita*’ and the ‘*encomienda yanacona*’, which differed from the classic forms taken by the *encomienda*, the *mita*, and the *yanaconazgo* in Peru, the ‘*congregación*’, whose frontier form also differed from that in Peru, and the ‘*mandamientos de repartimiento*’, all terms whose meaning will soon become clear.¹⁷ This section will also consider the question of the indigenous population decrease.

Indigenous enslavement, depopulation, and public finances

Once Potosí was discovered in 1545, enslavement of American Indians in Paraguay increased in scale and was linked to production. Disregarding the fact that the enslaving of indigenous people had been legally abolished within the Spanish empire in 1542, Spaniards began openly to raid what up to then had been friendly indigenous communities.¹⁸ Their raids sought women in particular, and formally operated until 1555.¹⁹ Indian

¹⁷ Historians have time and again described Mexican and Peruvian – as well as frontier – forms of coerced labour. Though fewer, studies of frontier colonies abound as well, even in the case of comparatively little researched Paraguay. Among the most prominent of these are, in addition to Service, *Spanish–Guarani Relations* and Garavaglia’s *Mercado Interno*; Branislava Susnik, *El indio colonial del Paraguay* (Asunción, 1965); Silvio Zavala, *Orígenes de la colonización en el río de la Plata* (México, 1977); James Schofield Saeger, ‘Survival and Abolition: The Eighteenth-Century Paraguayan Encomienda’, *The Americas*, vol. 28 (July 1981), pp. 59–85; Rafael Eladio Velázquez, ‘Caracteres de la encomienda paraguaya en los siglos XVII y XVIII’, *Historia Paraguaya*, vol. XIX, pp. 115–63.

¹⁸ On the abolition of indigenous slavery see Richard Konetzke, ‘La esclavitud de indios como elemento en la estructuración social de Hispanoamérica’. *Estudios de Historia Social de España*, vol. 1 (1949), pp. 441–79, reprinted in Günter Kahle and Horst Pietschmann (eds.), *Lateinamerika. Entdeckung, Eroberung, Kolonisation. Gesammelte Aufsätze von Richard Konetzke* (Köln: Böhlau Verlag, 1983), pp. 257–94.

¹⁹ On the slave raids (‘*malocas*’ or ‘*rancheadas*’) see Susnik, *Indio colonial* vol. 1, *El guaraní colonial*. Their former indigenous allies reacted against these raids with a generalised resistance by fleeing, as well as in other ways that Spaniards bloodily repressed. See Florencia Roulet, *La resistencia de los Guaraní del Paraguay a la conquista española, 1537–1556* (Posadas, Argentina, 1993), pp. 57–64 and 203–32. For a chronology of Indian uprisings see Louis Necker, ‘Le réaction des Indiens Guaraní à la Conquête espagnole du Paraguay, un des facteurs de la colonisation de l’Argentine à la fin de XVIe siècle’, in *Bulletin de la Société des Américanistes*, no. 38.

slaves built Asunción, raised the American roots and legumes and the European cereals, sugar cane, and grapes that made up the diet of the early Spanish colonisers, and also processed the derivative sweets, rum, and wines they consumed.²⁰ Indigenous slaves were also exported to São Vicente, on the Atlantic coast, where they were sold to Portuguese sugar cane producers.²¹ However, the trade in indigenous slaves that Asunción Spaniards engaged in must have been small, for Cario slave hunters located nearer the Atlantic coast had a comparative advantage.²²

The previous description suggests that the Spaniards in Paraguay expected mining in highland Peru to result in a derived demand for inputs that they could meet, given a sufficient supply of slave labour. We know, in addition, that they kept hoping eventually to find mines locally as well. Furthermore, one would also have expected enslavement to arise because of the poor delineation and enforcement of property rights: under the asymmetrically defined and enforced property rights structure that obtained, the demand for output would have generated a relatively greater derived demand for labour than under well delineated and enforced rights.²³ However, employers have to pay the implied higher wages only if property rights on labour are well defined and enforced. Should the distribution of violence potential between prospective employers and employees be uneven, and in the absence of private or state enforcement of property rights on labour and land, employers may be expected to use their greater coercive capability to reduce labourers' mobility, shift their labour supply curve to the right, and reduce the real 'wage rate'. Furthermore, competitive behaviour in the face of open-access scarce resources typically involves a rush by some demanders to appropriate the resource before others do. (For the same reasons that lead us not to expect apples in open access orchards to ripen).

Labour coercion will force workers off the labour supply curve that would represent their free labour-leisure choice, leading them to furnish

²⁰ Livestock was very scarce, horses being comparatively much more numerous than cattle. Municipal herds ('*manadas concejiles*') were kept in areas where they would not cause much damage to plantings, like the western plains across the Paraguay river from Asunción, as well as on the eastern bank.

²¹ See Juan Bautista Rivarola Paoli, *La economía colonial* (Asunción, 1986).

²² It is not a necessary condition because so long as the gap between the marginal product of labour and the subsistence needs of labour is relatively large, serfdom may obtain even though free land may have disappeared, as happened in the Russian Ukraine in the eighteenth century. It is not a sufficient condition because – as will be seen in detail below – land abundance may result in a small free peasantry.

²³ Assuming that private property rights are defined and enforced on capital and labour but not on land, capital and labour will be used until their rates of remuneration equal the average, not the marginal value product of labour and capital. Thus, the demand for labour will be greater under common than under private land ownership and, for an upward-sloping supply of labour, the equilibrium wage rate will be higher.

a larger labour input than they would have provided voluntarily at every wage rate or, alternatively, reducing the cost of any given amount of labour to ‘employers’. The shifted labour supply curve retains its positive slope, implying that material incentives could induce bonded labourers to move along their coerced labour supply curve and raise the amount of output produced. Systems of coerced labour, therefore, may be expected to include not only punishments, but also rewards, that is, incentive structures devised to induce labourers voluntarily to increase effort.²⁴ Conversely, in a monopsonistic labour market positive inducements will create additional labour rents that labourers and employers may appropriate and/or the government may tax.

This suggests that enslavement may have benefited not only private entrepreneurs but the crown as well. Tax revenues obtained from enslavement helped the crown support officials of the royal bureaucracy operating in the area. Furthermore, to the extent that indigenous labour rents could help support a local settlers’ militia, the crown would have to commit fewer resources of its own to colonial defence and could save revenues. Moreover, settlers had predictably expressed a clear preference for being rewarded with grants of labour and would remain in the area if incentives remained attractive. Thus, if only the crown would divert towards them part of the labour rents of indigenous people settlers could permanently provide for colonial defence at little or no public expense. Conversely, outlawing slavery would have been both costly for the crown to enforce and, if enforced, detrimental to royal interests. It is for these reasons, I submit, that indigenous slavery arose in Paraguay, and persisted in overt or disguised form, as in Chile, until long after the New Laws of 1542 abolished it elsewhere in the Spanish American empire.²⁵

Consider now the related question of depopulation. The indigenous population reduction began as a result of hostile military encounters between Spaniards and Indians, the military expeditions to the west, the polygamous marriages of Spaniards with indigenous women, and

²⁴ For these incentives to be effective, the labourers’ rights to enjoy them will have to be somehow recognised, and slaves will – in general – have to be capable of property usufruct or ownership, which is inconsistent with their legal status as chattels. This contradiction will reflect itself in the law and cultures of societies based on labour coercion. However, the ambiguity will have positive implications for the coerced labourer’s capacity to accumulate wealth, derive an income from that wealth, and spend it, whether on consumer goods or on repurchasing his/her freedom. On the question of ambiguity see David Brion Davis, *The Problem of Slavery in Western Culture* (Ithaca, N.Y., 1966). For the differences between Spanish American and US slave systems, see Herbert Klein, *Slavery in the Americas. A Comparative Study of Virginia and Cuba* (Chicago, 1967).

²⁵ See Rafael Eladio Velázquez, ‘Organización militar de la Gobernación y Capitanía General del Paraguay’, *Estudio Paraguayos*, vol. V, no. 1 (Junio 1977), p. 32, and Konetzke, ‘La esclavitud de los indios’.

European diseases. However, the rate at which the indigenous population decreased seems to have accelerated when the Spanish increased the labour services they exacted from the so-called ‘friendly Indians’ and enslaved them. Resistance, repression and flight compounded the problem. That is, indigenous depopulation may originally have been exogenously induced, but was endogenously compounded subsequently.

Enslavement of indigenous people implied in effect that the military superior private Spaniards – if not prevented by state intervention – could treat indigenous people as a common property resource, and could transform them into private property. While one would expect private proprietors to conserve their property, a very high rate of interest may cause slave-owners to use slaves more rapidly than they can be replenished.²⁶ Furthermore, the theory of common property resource use would lead one to expect the open access resource to be overused and depleted. Since the price of the resource is zero, there is no incentive to economise its use.²⁷ Moreover, enslavement may destroy some part of the common property resource and affect the ability of the resource to reproduce itself. In general, therefore, while the net effect of slavery may be ambiguous, we would expect slave hunting unambiguously to deplete the source population. Whether on balance conservation or depletion will prevail may not be established *a priori*.

Hunting for indigenous slaves in Paraguay may have led to indigenous depopulation because Spaniards preferentially enslaved women rather than men, thus affecting the ability of the stock to reproduce itself. Susnik reports that the drastic reduction in the proportion of women of child-bearing age among the Cario population reduced fertility while simultaneously increasing child mortality, and that the indigenous population experienced a ‘vertical descent’.²⁸ Since indigenous women were in charge of agriculture, their enslavement must have also diminished the output of agricultural products and reduced the indigenous community’s ability to produce its sustenance. Worsening nutrition in turn could have increased susceptibility to illness – already high because of low indigenous resistance to European infections – and morbidity.

Enslaving American Indians eventually had deleterious public finance

²⁶ See Colin Clark ‘The Economics of Overexploitation’, *Science*, vol. 181, no. 4100 (17 August 1973), p. 630.

²⁷ Thomas and Bean, studying the African slave trade, noticed a clear link between slave hunting and depopulation. They suggested that slave hunting could be seen as analogous to fishing in open access fisheries, that depopulation could be likened to the depletion of fish stocks that ensues from excessive entry, and that these and other aspects of the problem could be analysed in terms of the economic theory of common property resources. See Robert P. Thomas and Richard Bean, ‘The Fishers of Men: The Profits of the Slave Trade’, *Journal of Economic History*, vol. XXXIV (1974), pp. 885–914.

²⁸ Susnik, *Indio colonial*.

implications as well. Spaniards were required to pay a head tax per indigenous slave they captured, but free American Indians also had to pay a tax, for the protection they theoretically enjoyed from the crown, and would have had to pay it had they remained free. Thus, indigenous enslavement's short-term benefits to the crown could be more than offset in the long run by the enslavement-induced decline of the free indigenous population and consequent shrinking of the tax base. Therefore, we would have expected the crown to take measures to prevent this outcome, and we do in fact find evidence to that effect. As the conquest of Mexico and Peru was completed, the crown curtailed the political and economic powers it had granted to the conquerors, and ultimately replaced them by salaried officers of the royal bureaucracy. This conflictive political struggle was followed by the no less conflictive economic struggle for control of the indigenous labour force. That is, once a certain region was conquered, the crown sought to change the distribution of labour rents in its favour, in a manner that the next section will clarify.

What of the abolition of Indian slavery? Private Spaniards favoured the continuation of Indian slavery, but the church condemned it, for reasons that some have argued were partly economic in nature.²⁹ Indigenous slavery was abolished when the crown sided with the church and forced slavery to be replaced by the *encomiendas*. In Paraguay, therefore, the abolition of Indian slavery came about in the context of depopulation, as a result of state measures motivated both by economic and ideological reasons. This is consistent with the contention that abolition may come about as a result of political measures, but inconsistent with Domar's suggestion that slavery would disappear as a result of population growth, that is, for economic reasons affecting its relative profitability.

Indigenous Encomiendas (Entrustment) and Congregación (Confinement)

To indigenous enslavement and depopulation the crown responded in mid-sixteenth century by instituting the '*encomienda de la mita*' and the '*encomienda yanacona*', also known later as the '*encomienda originaria*', as well as the '*congregación*'. Both forms of the *encomienda* were adaptations to New World frontier conditions of the Castilian institution used during the Spanish Reconquest and of pre-Columbian forms of labour control in Peru.³⁰ The Paraguayan *encomienda de la mita* and the *encomienda yanacona*, however, differed from the *encomienda*, the *mita*, and the *yanaconazgo* in

²⁹ Batchelder and Sanchez, 'The Encomienda and the Maximizing Imperialist'.

³⁰ The Quechua term '*yanacona*' was brought to Paraguay by men escaping the repression that followed Pizarro's revolts in Peru. It was used early in the colonial period but later yielded to the term '*originario*', used to refer to an American Indian outside his town of origin. *Mita* comes from 'mit'a', Quechua for 'turn'. See Garavaglia, *Mercado interno*, p. 272.

Peru, and from the corresponding form those institutions took in Mexico. The Paraguayan *congregación* also differed in some respects from that in Peru and Mexico. In the sequel I will describe the *encomienda* and the *congregación* in detail and interpret them in terms of the proposed theoretical framework.

(i) *Encomienda de la mita*. From previous experience elsewhere in the New World royal officials in Asunción expected that enslavement would lower the indigenous population, that royal finances would suffer, and that so would their salaries, for they were paid from taxes collected locally. Consequently, from early on they pressed the ruling lieutenant governor to do away with enslavement and introduce the *encomienda*, which they claimed would at the same time protect free indigenous vassals from enslavement and depopulation as well as provide private Spaniards access to indigenous labour. He finally stopped supporting the kinship system of obtaining indigenous labour favoured by the settlers, once the king conditioned his appointment as Provincial governor to the introduction of the *encomienda* system, which the lieutenant governor finally imposed in 1556. That year alone, he assigned in *encomiendas mitarias* 27,000 able-bodied, adult males (the equivalent of a population of about 100,000) among a fraction (320) of the Spaniards in Asunción.³¹ Those left without *encomiendas* set out for other areas where untrusted indigenous settlements were known to exist, the Guayra area east of Asunción most notably, where the process was repeated.

The grant of an *encomienda* was a transaction between the crown and private Spaniards whose terms were embodied in a contract recognised as legally binding by the Courts. The *encomienda mitaria* required American Indians subject to it, in lieu of paying tribute to the crown, to take turns providing specified labour services to their masters, the so-called ‘*encomenderos*’ or ‘*vecinos feudatarios*’, for a period that initially extended to six months per year, but that by the early seventeenth century had been reduced to two.³² In exchange *encomenderos* were to protect, convert, and acculturate their Indian charges; to fix residence in a given Spanish American town; to pay certain taxes to the crown;³³ and to contribute at their own expense to the colony’s defence against internal and external enemies, i.e. take on police and military functions that the crown would otherwise have had to discharge and finance itself. An *encomendero* could hold an *encomienda mitaria* for his lifetime and bequeath it to one or two consecutive generations of his or her descendants, that is,

³¹ See Susnik, *Indio colonial*, vol. I, *Guaraní colonial*.

³² See Saeger, ‘Survival and Abolition’, p. 60.

³³ The taxes in question were the ‘*media anata*’ and the ‘*año de demora*’. See Saeger, ‘Survival and Abolition’, pp. 59–85.

always less than the perpetual grant to which *encomenderos* aspired.³⁴ *Encomenderos* were not supposed to trade on their *encomiendas* in any way and were specifically barred from selling and renting them. The *encomienda* became ‘vacant’ at the end of the number of generations (‘lives’) for which it was granted, if the beneficiary died without heirs, or if he or she abandoned the *encomienda*. A vacant *encomienda* reverted (‘escheated’) to the crown, which could reassign it to other worthy Spaniards of its choice. The crown could also assign *encomiendas* to royal officials in pursuit of public aims.

Encomenderos in Spanish America, unlike those in Spain, had no judicial powers, nor could they arm the indigenous people entrusted to them. That is, their powers were restricted relative to those of their Peninsular counterparts. Furthermore, the Paraguayan *encomienda de la mita*, as its name suggests, was actually a synthesis of the *encomienda* and the *mita* of Peru. Like early versions of the *encomienda* elsewhere, the Paraguayan *encomienda* required payment in labour services and goods. Like the *mita*, the Paraguayan *encomienda mitaria* remained a rotatory, draft labour service institution until the very end of the colonial period. Unlike the *mita*, however, it did not require payment of a money wage. In Peru, military services were required of recipients of *encomienda* grants but not of recipients of *mita* grants.³⁵

The *encomienda de la mita* may be seen to have been a tax-farming scheme by which the crown leased out the right to collect in labour services the indigenous tribute, which royal officials would otherwise have had to collect.³⁶ Farming out the collection of the tribute benefited both the crown and the *encomenderos*. American Indians of the Tropical lowlands, owing to their comparatively lesser degree of agricultural development and practically non-existent commerce, had a much lower ability to pay taxes than highland indigenous communities. In the tropical lowlands the

³⁴ An *encomienda mitaria* as a temporary grant of specified, restricted labour services; it was not a land grant, nor did it necessarily imply such a grant. In Paraguay, extraction from royally owned lands of *yerba mate* for export, the most profitable use to which *encomenderos* could devote their labour grants, did not require the ownership of any land at all, only the purchase of a license. However, output can generally not be produced with labour alone and, therefore, *encomenderos* also tended to seek, and receive, separate grants of land.

³⁵ For the wage payment required by the Peruvian *mita* see Enrique Tandeter, *Coacción y mercado: la minería de la plata en el Potosí colonial, 1692–1826* (Buenos Aires, 1992).

³⁶ See Carlos Pastore, *La lucha por la tierra en el Paraguay* (Montevideo, 1972), p. 12. By farming out the collection of taxes, rulers generally exchange a future stream of revenues for a present lump sum payment. Tax farming, therefore, is a substitute for government borrowing in a thin or non-existent capital market (that is, a capital market innovation) or for an inefficient or non-existent tax-collecting bureaucracy. For the suggestion that ‘capital is a prerequisite, not a cause, of tax farming’, see Margaret Levi, *Of Rule and Revenue* (Berkeley, 1988), p. 78.

costs of collecting taxes in kind frequently exceeded the value of tax collections, owing to high transaction costs: local auction markets for agricultural produce were relatively thin, revenues in kind were perishable, and the high cost of land and water transportation made it difficult to transport agricultural products to other regions of America or to Spain, where they might be more advantageously auctioned off. The Spanish colonists, on the other hand, could devote the output of indigenous agriculture to more profitable use than the crown. They could not only consume *in situ* the provisions furnished by the indigenous people, but could also raise indigenous labour productivity significantly, by introducing production processes previously unknown locally, setting indigenous labourers to work with iron tools (which the indigenous people themselves recognised to be superior to stone tools and sought eagerly) and subjecting the indigenous labour force to a more disciplined – if involuntary – work regime. The *encomiendas de la mita*, therefore, could increase Spanish output and taxable income. However, they significantly skewed income distribution relative to what it would have been had property rights on labour and land been enforced.

In addition, the *encomenderos*' contributions to defence saved the crown the costs of supporting a standing army devoted to that end, costs which could be quite high given the colony's location on both the Indian and Portuguese frontiers.³⁷ *Encomenderos* were also fewer and more stationary than indigenous tributaries would have been had they remained free. This also reduced the crown's monitoring and tax collection costs. Entrusting Indian vassals to *encomenderos* also saved the crown the costs of fulfilling its commitment to the Pope to protect, convert and acculturate its indigenous vassals.³⁸ Thus, the *encomiendas* were but a particular case of tax farming by which the crown increased revenues and reduced expenditures, that is, maximised fiscal revenues.³⁹

³⁷ However, provincial defence could not be satisfactorily organised with *encomenderos* alone and it became necessary to resort to the compulsory recruitment of all men capable of wielding arms. Velázquez, 'Organización militar', p. 33.

³⁸ The crown delegated onto *encomenderos* all the functions that it had committed itself to perform on behalf of the Church.

³⁹ The analysis of the preceding two paragraphs differs from that presented recently in Timothy Yeager's 'Encomienda or Slavery? The Spanish Crown's Choice of Labor Organization in Sixteenth-Century Spanish-America', *Journal of Economic History*, vol. 55, no. 4 (Dec. 1995), pp. 842–59. Yeager argues that the crown adopted the *encomienda* despite the inefficiencies that its inheritance, trading, and relocation restrictions implied 'to satisfy an ideological bias against slavery' and to 'secure its rule' (p. 842). Through the threat of confiscation, 'the crown improved its bargaining position with *encomenderos*' and gave them 'incentives to remain submissive to the Crown in order to secure permission to pass on *encomiendas* to their heirs' (pp. 846–7). For a critique of this argument, see my 'Encomienda of Slavery: A comment on Yeager'.

(ii) *Encomienda yanacona* or *originaria*. ‘Recalcitrant’ indigenous people who had resisted or attacked the Spaniards or who, after 1556, had refused to submit peacefully to entrustment, could be the object of ‘just wars’. The captives thus obtained were kept under close supervision in the homes and farms of the Spaniards and served them continuously in all sorts of tasks, that is, were enslaved. Following the first distribution of *encomiendas mitarias* in mid-sixteenth century, these slaves came to be regarded as belonging to another *encomienda*, the *encomienda ‘yanacona’* or ‘*originaria*’.⁴⁰ Given the nature of their tasks, *yanaconas* may be said to have supplied the demand for year-round labour, ‘*mita* Indians’ the demand for seasonal labour. *Encomiendas yanaconas* or *originarias*, like the *mitarias*, could not legally be rented out or traded; they had to revert to the crown before being reassigned in any form. The *encomienda yanacona* thus disguised and prolonged indigenous slavery, but in a restricted fashion. These ownership restrictions would suggest that holders of *encomienda yanaconas* may have had incentives not to conserve their labour grant similar to those facing holders of *encomiendas mitarias* and, in fact, the number of days that *yanacona* Indians owed their masters increased from four to five per week between the late sixteenth and the early seventeenth centuries.⁴¹ However, indications can be found that Spaniards treated *yanaconas* comparatively better than they did ‘*mita* Indians’, perhaps because, in practice, trades and rentals of *yanaconas* did take place. This may have been facilitated by the fact that *encomiendas yanaconas* were more mobile than *encomiendas de la mita*, since neither *encomenderos* nor the indigenous people subjected to them were constrained by residency requirements.

(iii) *Congregación*. Following the Toledo reforms in Upper Peru, that is, from the 1570s onwards, ‘*indios de la mita*’ were also subject to the ‘*congregación*’, a policy that involved their resettlement, concentration, and confinement in supervised, segregated towns to which only *encomenderos* and a few additional persons could have access.⁴² Contrary to the situation in highland, relatively land scarce areas of the Spanish empire, in land-abundant Paraguay the colonial administration assigned these towns fairly extensive amounts of land, though these were fewer than those indigenous communities had considered their own. Town-dwellers were to work

⁴⁰ See Zavala, *Orígenes de la colonización*. ⁴¹ Gravaglia, *Mercado interno*, p. 273.

⁴² Until their confinement to towns, many indigenous people whom the Spaniards had notified that they were subject to the *encomienda* but did not effectively control would simply not come to render the services expected of them. These were the ‘*encomendados por noticia*’. See José Luis More Mérida, *Historia Social del Paraguay, 1600–1650* (Sevilla, 1974). Clearly, entrusting indigenous labourers was insufficient; the labourers’ ability to flee had to be forcefully curtailed as well, which is precisely what confining them to towns accomplished.

these lands collectively to support themselves and their overseers, but could not alienate them either individually or as a community. In addition, Indian town-dwellers could only trade with those allowed access to the towns, in particular, royal officials and their *encomendero(s)*, who had a monopoly on the meagre market for consumer goods that Indian towns offered. That is, product and factor market restrictions applied.⁴³ Furthermore, they could not privately own land – either collectively or individually – though they could have the use of the land assigned to them. Under the system of monopolies, therefore, indigenous people subject to the *encomienda mitaria* could buy in a monopolised market and sell in a monopsonised market. Finally, the *congregación* allowed collective taxation to be imposed, that is, Indian town dwellers were collectively responsible for individual tributary obligations.⁴⁴ Clearly, this incentive system discouraged indigenous economic activity and encouraged flight, which is what is observed.

Viewing the enslavement-induced indigenous depopulation from the point of view of the economic theory of common property resources would have suggested that the crown needed to reaffirm its property rights on the indigenous labour force and reduce its rate of utilisation, which is precisely what the crown in fact did. Thus, the crown first declared it illegal for individual Spaniards to enslave its indigenous vassals except in cases of ‘just wars’, that is, it denied individuals the right to appropriate by force indigenous labour power without royal authority.⁴⁵ Secondly, the crown not only outlawed the damaging slave raids but for a fee licensed selected individuals to use indigenous labour services under specified conditions.⁴⁶ The process by which the crown granted *encomiendas*

⁴³ Entrustment of the indigenous population could – and did in fact – take place independently of its confinement to towns, especially in the beginning. Thus, while some temporary indigenous towns were founded by private Spaniards even before the first *encomiendas* were granted in the 1550s, the first permanent indigenous towns were not founded until the 1580s, by Franciscan missionaries. For the early founding of Indian towns by private Spaniards, see Félix de Azara, *Descripción e historia del Paraguay y del Río de la Plata* (1847) in *Biblioteca Indiana. Viajes por la América del Sur, tomo 2* (Madrid, 1962). Franciscan missionaries would typically found a town and, after a period of time, leave it to a member of the secular priesthood to go found another town elsewhere. See Margarita Durán Estragó, *Presencia Franciscana en el Paraguay: 1553–1824* (Asunción, 1987), p. 93–164.

⁴⁴ On the economics of collective taxation see Bent Hansen, ‘An Economic Model for Ottoman Egypt: The Economics of Collective Tax Responsibility’, in A. L. Udovitch (ed.), *The Islamic Middle East: Studies in Economic and Social History* (Princeton, New Jersey, 1981), pp. 473–519.

⁴⁵ The crown, however, did allow a loophole. It permitted Indian enslavement in cases of ‘just war’, which itself was supposed to require previous government approval.

⁴⁶ Allowing that worthy individuals alone could receive *encomiendas* was a way of discriminating in the sale of the grant.

that allowed it to price-discriminate among those who demanded them, improved the crown's bargaining position *vis-à-vis* private 'employers' and tilted the terms of the transaction in favour of the crown. Third, by comparison to what was required of indigenous slaves, the *encomiendas mitarias* reduced the length and the range of labour services that *mita* Indians were obliged to render their masters, and progressively curtailed the length of required labour obligations from around half a year to two months.⁴⁷ Concomitantly, the crown segregated Spaniards and 'mita' Indians into towns of their own.⁴⁸ That is, the crown protected indigenous people from Spaniards – thus reducing the depopulation caused by enslavement and pathogens – and restricted indigenous freedom of movement, a condition for extracting labour rent. Many of the features of the *encomienda* and the *congregación* can be more fully appreciated when viewed in this light.

In the theoretical framework presented, changes in relative factor prices should have given rise to changes in production techniques. Those previously considered efficient should have been displaced by others that more intensively utilised the relatively abundant, cheaper factor. These changes should have been reflected in the composition of output and the structure of exports. In the context under consideration, we would have expected a move away from labour intensive techniques and towards land intensive techniques; goods produced by such techniques should have begun to predominate among exports as well. This is exactly what we observe. Until the 1570s, the economy was based exclusively on indigenous agriculture. All production was for local consumption, there was no production for export. As the indigenous population decreased, however, and the regional economy built around Potosí silver mining expanded, interest in cattle raising increased, beginning in the late 1560s and the early 1570s.⁴⁹ In turn, the expansion of cattle raising led to the search for lands to the south more apt for cattle raising than those of Paraguay and closer to the Potosí market, as well as to the founding of new cities and the development of regional and foreign trade. Exports first consisted mostly of cereals, sugar and wines, which presupposed a relatively labour-intensive agriculture, but the structure of exports began to change early in the seventeenth century. By the 1630s, the early exports

⁴⁷ Thus, the *encomiendas* originally granted in mid sixteenth century were much more onerous than those of the early seventeenth century. See R. De la Fuente Machaín, *El gobernador Domingo Martínez de Irala* (Buenos Aires, 1939).

⁴⁸ Only the *encomenderos*, the town supervisor, and the priest that was supposed to christianize the residents could have access to Indian towns.

⁴⁹ Although a few head of cattle were introduced as early as 1555, it is not until the late 1560s that plans to introduce sizeable quantities of cattle are evident. See Efraím Martínez Cuevas, *La ganadería en el Paraguay* (Asunción, 1987).

began to be displaced by *yerba mate*, which did not need to be cultivated and could simply be harvested from forests northeast of Asunción. *Yerba mate* gathering, furthermore, also required inputs of cattle and cattle by-products, which could also be produced by labour-saving methods.

Mandamientos de repartimiento

As the crown progressively curtailed the *mita* obligations of town Indians, the time available to them for their own purposes increased. Documentary evidence dating back to the mid-seventeenth century indicates that the crown then imposed a new coerced labour requirement on town Indians, the so-called *mandamientos*, by which the state rented out indigenous labourers to private entrepreneurs. The crown established the wage that employers would have to pay indigenous labourers for the tasks they performed. Town Indians seem to have preferred the remunerated *mandamientos* to the unremunerated *mita*, even though they received a wage lower than the going market wage and, in addition, had to turn over half of it to the town's 'treasury'.⁵⁰

Mandamientos seem to have become more common once *yerba mate* exports began to increase. Spaniards resorted to them to build and man vessels to transport *yerba mate* down river to Asunción, as well as for other commercial activities. As exports increased the number of labourers sent out under the *mandamientos* rose, and so did those who did not return to their towns of origin, either because Spaniards kept them from returning or because the Indians themselves used the *mandamientos* as an excuse to escape from the towns to which they were confined and so to avoid the variety of obligations that weighed upon them there. The colonial administration then appointed a special supervisor, the '*alcalde de sacas*', to enforce mandated extraction ceilings and ensure that indigenous labourers on *mandamiento* assignments returned to their towns.

This phenomenon may be interpreted in the following terms: increased exports will shift the demand for labour outward, giving rise to excess demand and putting upward pressure on labourers' remuneration. The more inelastic the demand for labour, the greater would be the labour rents that a given rightward shift of the demand for labour would generate and *encomenderos* would capture, and the higher the opportunity cost to the state of *encomiendas* in private hands. The state therefore had reasons to regulate or 'tame' the *encomienda* and impose the *mandamientos*. Revenues

⁵⁰ In addition to their *mita* and *mandamiento* obligations, town Indians could be called upon by the state to perform corvée labour, that is, to build and repair roads, bridges, forts and public buildings. See Garavaglia, *Mercado interno*, p. 309 and Rafaél Eladio Velázquez, 'La rebelión de los indios de Arecaiyá, en 1660', *Revista Paraguaya de Sociología*, Año I, no. 2 (Enero–Abril 1965), pp. 20–56.

to the state would clearly have been greater under an ‘*encomienda cum mandamientos*’ system than under a system of *encomiendas* alone. Indigenous labourers may also have benefited from this system since they would have appropriated some of those rents.

Coercion, confinement and the continued indigenous population fall

The ‘new’ system of the *encomiendas*, *congregación* and *mandamientos* did not protect the indigenous population as well as had been expected. By the early seventeenth century the indigenous population had been reduced to a fraction of its original size, and both forms of the *encomiendas* had declined noticeably, despite the fact that confinement to towns had been largely accomplished, and that three successive sets of royal ordinances of the late sixteenth and early seventeenth centuries noted the abuses and legislated against them. Contemporary sources suggest that the indigenous population was reduced to one tenth of its original numbers by the early sixteenth century. A more conservative estimate is given by Garavaglia (1983) who suggests a fifty per cent reduction.⁵¹ Contemporaries attributed the problem to the system of incentives built-in to the *encomiendas*. They specifically mentioned that the grant was not perpetual, that it could only be held for the grantee’s lifetime, and one or two generations of their descendants; and that it could not be freely traded or rented out. *Encomenderos* shifted indigenous people subject to the *encomienda de la mita* to the *encomienda yanacona*, or exceeded the terms of the *mandamientos*, to which ends they bribed the Spanish *corregidores* of indigenous towns if necessary, a practice that became more common in the course of the seventeenth century, as the Hapsburgs’ sale of offices became commonplace. For these and other reasons the decline of the indigenous population continued.

III. *The seventeenth-century crisis: stagnation of the encomiendas, the rise of Jesuit missions and of the small peasantry*

An early seventeenth-century source puts the number of adult Indian males ‘who were serving or could potentially serve’ in Asunción and its environs at 28,200, and at 115,170 in Guayra and the eastern region, for a total of 143,370.⁵² On the other hand, a 1674 survey of eighteen Indian

⁵¹ The contemporary sources are quoted in Adalberto López, ‘Shipbuilding in Sixteenth Century Asunción del Paraguay’, *Mariner’s Mirror*, vol. 61, no. 1 (February 1975), pp. 59–85; for the ordinances see Julio César Chaves, ‘Las ordenanzas de Ramírez de Velasco, Hernandarias y Alfaro’, *Historia Paraguaya* vol. 113 (1969–70), pp. 107–120.

⁵² José Luis Mora Mérida, ‘La demografía colonial del Paraguay’, *Jahrbuch für Geschichte von Staat, Wirtschaft und Gesellschaft Lateinamerikas* Band 11 (1974), p. 54, asserts that the report dates back to 1610.

towns found that they contained only 3,783 ‘service Indians’.⁵³ That is, the indigenous population subject to the *mita* and reduced to towns continued to decline. In addition, the number of *encomiendas mitarias* decreased, although the number of indigenous people per *encomienda* increased. This reduction in the number of *encomiendas* also lowered the number of *encomenderos* who could be counted on to furnish military services to defend the colony. Furthermore, *encomenderos* evaded rendering the military service to which their grant obliged them by purchasing government offices which exempted them from that responsibility.⁵⁴

Partly in response to the continued indigenous population decline, the local authorities requested the Jesuits to found missions in Guayrá, east of Asunción, which they began doing in the 1610s, with indigenous people already entrusted to Spaniards.⁵⁵ However, São Paulo enslavers raided the Guayrá Spanish settlements and the Jesuit missions. They destroyed three Spanish cities and fourteen towns of Guaraní Indians, and forced them to move to areas farther west and south west, respectively.⁵⁶ The missions resettled in what became their ‘locus classicus’, the area astride the Paraná and Uruguay rivers. The pursuing Portuguese ‘bandeiras’ were decisively defeated in mid seventeenth century by Jesuit-led indigenous armies which the king authorised the missionaries to train and equip with firearms.⁵⁷ In recognition of their success, between 1660 and 1680 the crown exempted the Jesuit missions from the *encomienda*. In addition to rendering military service, exoneration from the *encomienda* required indigenous people to pay the tribute in cash, which the Jesuits raised by exporting *yerba mate* to the regional market and paid punctually. Attempts by Paraguayan *encomenderos* to extend the *encomienda* to Jesuit mission towns, observed at this time, generally failed.⁵⁸ Therefore, the indigenous population of Jesuit missions grew, despite periodic bouts of the plague.

The stock of indigenous labour evidently yielded much higher returns when congregated in missions under Jesuit oversight, segregated from Spaniards, and exempted from the *encomienda*, than when subjected to the

⁵³ See Mora Mérida, ‘La demografía colonial del Paraguay’, p. 59.

⁵⁴ See Saeger, ‘Survival and Abolition’, p. 74.

⁵⁵ For the founding of the first Jesuit mission towns in the Guayrá see Ramón I. Cardozo, *La antigua provincia del Guairá y Villa Rica del Espíritu Santo* (Buenos Aires, 1938). The fact that the Jesuits formed missions with Indians already entrusted to Spaniards would later serve as the excuse for disputes with Paraguayans.

⁵⁶ See Velázquez, ‘Organización Militar’, p. 27. The name and location of the Guayrá towns destroyed may be found in John Hemmings, *Red Gold: The Conquest of the Brazilian Indians* (Cambridge, Mass., 1978).

⁵⁷ See Velázquez, ‘Organización Militar’, p. 41–3.

⁵⁸ See Alberto Armani, *Ciudad de Dios y Ciudad del Sol. El ‘estado’ jesuita de los guaraníes (1609–1769)* (México, 1986).

encomienda and confined to the less isolated towns Franciscans had founded. The crown had no reason, then, to yield to *encomenderos* and reimpose the *encomienda* on the Indians of the Jesuit missions, and indeed it did not. The following report of 7 November 1715 from the Royal Treasurer to the crown regarding the wisdom of subordinating the Jesuit missions to the authority of the Spanish colonial administration is clear on the effects that could be anticipated from such a measure, on fiscal revenues as well as in general:

Such great injury may result from changing the governance of those Indians, putting Spanish governors and Justice to rule them, that there is not the slightest doubt of the risk to which those settlements, where such a (large number of Indians dwell, would be exposed, ... it being worthy of all attention that, if for any accident said Indians became restless, they would abandon the missions ... even if none of this were to happen and the Spaniards could quietly and peacefully begin to govern ... the poverty ... of those lands and the tribute ... which each Indian contributes to His Majesty, the Treasurer would not expect much of an increase in Royal revenues, given how general is the covetousness, especially in those parts, of those who come to govern, who only care for their own interests ... a bull will be issued to the Audiencia ordering it not to allow any change in the government which for such a long time have had said Indian settlements.⁵⁹

Much like the Jesuit mission Indians, the small *mestizo* peasantry became more important as the seventeenth-century depression generally set in. Farms owned by Guarani-speaking small peasants spread over the lands that indigenous people had vacated at a rate that, given the absence of immigration, must have been similar to the rate of population increase. Three issues need to be addressed here insofar as the small peasantry is concerned. First, how does one account for its appearance? Second, how does one explain the fact that *mestizo* peasants were – on the one hand – exempt from coerced labour obligations when the drastic indigenous population decrease would have led one to expect *encomenderos* to seek to extend the *encomienda* to *mestizos*? Third, why did the crown rely so heavily on them for colonial defence?

The rise of the free *mestizo* peasantry may be accounted for in terms of a simplified Ricardian model similar to that used by Domar to account for the rise of the free Russian peasantry before serfdom, that is, of a model that embodies the scarcity of labour relative to land that was common to both the Eastern European and Latin American scenarios. For simplicity we may assume Lockean conditions, e.g. that labour is homogenous and property rights on labour have emerged and are vested in the labourers themselves. Land, on the other hand, is infinitely abundant, equally fertile everywhere, and of open access. The model may or may not abstract from

⁵⁹ Hildegard Kruger de Thomas, 'Asunción y su área de influencia en la época colonial', *Estudios Paraguayos*, vol. VI, no. 2 (December 1978), p. 41 (author's translation).

capital. Labour and land are initially assumed to be the only two factors of production. Being scarce, labour will fetch a price; if it is abundant and if we abstract from locational advantages, land will not fetch a price or earn rent.

That a free, small peasantry will arise under these conditions so long as property rights are well defined and enforced follows from implicit assumptions about the nature of the technology of production and of property rights delineation and enforcement. For as long as land remains abundant land rent will be zero. Landowners, therefore, will not hire labourers, nor will labourers 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 labour. We would not expect to observe a wage labour force or share cropping, since both presuppose that land has become scarce. Property rights on commodities will be vested in the labourers, and the exchange of final goods, if it exists, will take place according to their labour content. The same goes for the means of production. By the same logic that we envision all final output belonging to the labourers, if labour and land are complementary in production we can envision the labourers holding private property rights on the land. Although techniques of production will tend to be land intensive, there will be little point in peasants accumulating more land than they can work alone or with the help of their families. Therefore, in addition to being owned by those who work them, farms will tend to be small and fairly equal in size, that is, the structure of property rights on labour determines the land tenure system, not the other way around. The number of peasant holdings will increase with the population, which will grow at a rate that may be expected to be a direct function of the difference between output and the peasantry's subsistence requirements, *ceteris paribus*.

The preceding results clearly depend on property rights being enforced at zero cost. Without costless enforcement the free peasantry that will arise is not likely to remain free. An uneven distribution of coercive capabilities among the peasants may lead some to attempt to enslave or enserf others, to appropriate some portion of the difference between the marginal product and the subsistence requirements of labour. Should the distribution of coercive capabilities among peasants be initially equal it will tend to become unequal, because incentives will exist to innovate the technology of coercion to appropriate some of the labour rents of those who do not innovate. Thus, even though a peasantry will arise in the absence of a state, it is not likely to remain free without state enforcement of rights.

In fact, the Paraguayan peasantry remained free of coerced labour obligations when economic forces would have led one to expect its enserfment because the state intervened.⁶⁰ The colonial administration enforced the Paraguayan peasants' rights to their own labour against *encomendero* pretensions, I argue, partly because it relied heavily on peasants to staff the militia necessary for colonial defence, the demand for which was acute in the seventeenth century.

Nomadic Indians from the plains west of the Paraguay river became a fearsome enemy once they adopted the horse, just as the plains Indians of the United States did later. In the absence of military fortifications their raids north and south of Asunción restricted the land effectively occupied by Spaniards to a narrow strip running east from Asunción along the central mountain range. In the decade of the 1660s efforts were made to set up fortifications north and south of Asunción to defend against these attacks, but they secured only 25 to 30 kilometres of coast. Portuguese slave raids that stretched from the 1630s to the 1670s forced Spanish settlements from the Guayrá to relocate to the jurisdiction of Asunción. For that privilege they paid a high price, the division of their *encomiendas* among Asunción 'vecinos'.⁶¹ Henceforth, these former Guayrá settlers were regarded as 'poor peasants', that is, peasants without *encomiendas*, and were obligated to contribute to colonial defence through membership in the militia.

The organisation of the provincial militias was apparently consolidated a little before or in the middle of the seventeenth century, and remained unchanged for 150 years.⁶² By the late seventeenth century, most of those recruited for military service against Portuguese invasions were 'soldiers without fief', and the proportion of these soldiers in the provincial militias increased as time went on.⁶³

⁶⁰ The acculturated *mestizos* who made up the majority of the peasantry were exempt from the *encomienda*, and the courts enforced the exemption when it was challenged. Attempts to entrust *mestizos* failed when their Spanish Fathers recognised them as their own children and the provincial governor concurred. For an instance see Velázquez, *Breve historia de la cultura en el Paraguay*, 5th ed. (Asunción, 1975), pp. 29–30. In fact, acculturated *mestizos* could themselves hold *encomiendas*. Moreover, due to the absence of immigration, 'criollos' and *mestizos* actually occupied public offices supposedly reserved for Spaniards, though *encomiendas* and public offices continued to be assigned preferentially to Spaniards.

⁶¹ See Cardozo, *La antigua provincia*. Some of the Guayrá settlers preferred to join the Paulista 'bandeirantes', thus the kinship between Paraguayan and Paulista families of today. See John Manuel Monteiro, 'São Paulo in the Seventeenth Century: Economy and Society', Ph.D. dissertation, Department of History, University of Chicago (Chicago, Illinois, 1985).

⁶² See Velázquez, 'Organización Militar', p. 34.

⁶³ See Velázquez, 'Organización Militar', p. 32. Militiamen were furnished the equipment necessary for the rotatory service they were required to render. For the expeditions they undertook against the Chaco Indians they were compensated by being allowed to

By the late seventeenth century, then, *yerba mate* had clearly emerged as the region's most important staple. The scarcity of labour relative to land influenced the choice of production technique and of product quality in different sectors of the *yerba mate* industry. Paraguayans, who continuously complained of the scarcity of indigenous labour, for the most part produced a coarser variety of the tea that required less processing. They never went beyond harvesting natural *yerba mate* forests to developing *yerba mate* plantations. The Jesuit missions, on the other hand, had relatively more numerous indigenous labourers. They were also known for producing a variety of *yerba mate* that required more labour intensive processing and developed plantations near the missions as well.

The late seventeenth-century pattern of territorial occupation is one of two Spanish and sixteen Indian towns, each with lands their inhabitants would own privately and collectively, respectively, and a small peasantry, all amidst vast royal lands containing the stocks from which *yerba mate* was produced.⁶⁴ The military structure had clearly changed as well. Indian armies from the Jesuit missions and an increasingly peasant-based militia furnished most of the necessary defence services.

IV. Conclusions

Anticipated demand for staples, relative labour scarcity *vis-à-vis* land, an unequal distribution of violence potential between Spaniards and indigenous people, and poor delineation and enforcement of rights by the state, led to the displacement of cooperation relations by large-scale indigenous enslavement. The distribution of labour rents initially favoured private Spanish slave-owners rather than the state. However, exploitation by private entrepreneurs of crown-owned indigenous labour along common property resource lines contributed to the depletion of the labour resource and the dissipation of rents that would otherwise have accrued to the labourers. As labour became more scarce and, therefore, more valuable, the crown imposed a tax-farming scheme, the *encomiendas*, to prevent further depletion and rent dissipation, to tilt the distribution of rents in its favour, and to provide for colonial defence. As demand for export staples increased, the crown tamed the *encomiendas* and also imposed

share among themselves as slaves the indigenous prisoners they made. Domínguez lists 35 Chaco 'entradas' between 1601 and 1700 according to Velázquez, who asserts that the list is not complete. See Manuel Domínguez, *Expediciones paraguayas al Chaco* (Asunción, 1934), cited in Velázquez, 'Organización Militar'.

⁶⁴ Among Indian towns there were nine non-Jesuit Indian towns, and seven Jesuit Indian towns. See Rafaél Eladio Velázquez, 'La población del Paraguay en 1682', *Revista Paraguaya de Sociología*, vol. 9, no. 24 (Mayo-Agosto 1972), Appendix.

the *congregación* and the *mandamientos de repartimientos*. However, the system did not work well, for reasons traceable to the incentive structure and monitoring costs. Once it became clear that indigenous people contributed more to colonial defence and crown coffers when gathered in Jesuit missions and exempted from the *encomiendas* than when entrusted to *encomenderos*, Jesuit missions became the preferred institutional arrangement to collect taxes and provide defence.

The small *mestizo* peasantry emerged and eventually predominated over the forms of coerced indigenous labour that preceded it, for two reasons. First, factor proportions were the required ones, i.e. land was initially abundant and became even more so as the indigenous population declined, *encomenderos* failed to extend the *encomienda* to acculturated *mestizos*. The state enforced regulations making *mestizos* legally ineligible for subjection to the *encomienda* partly because the free peasantry formed the basis of the militia that provided colonial defence. Thus, security reasons led the peasantry to remain free when economic forces would have led to its bonding. This was due to state intervention and was consistent with the maximising view of the state advocated here.