THE EMERGENCE OF THE METROPOLES*

Imagine, to start, that we are at liberty to transport ourselves back into the past, flitting whimsically from century to century, at will from place to place.

* We offer this essay as a highly simplified and, therefore, necessarily controversial interpretation of the rise of the maritime nations of Europe. So as not to mislead the reader into thinking that we have come to terms with the corpus of scholarship in this area, we attempt no documentation. Our aim is merely to give an insight into the historical view which informs the work presented below. We have drawn on the following secondary sources:

W. H. McNeill, The Rise of the West, University of Chicago Press, 1963; Henri Pirenne, Economic and Social History of Medieval Europe, Harcourt, Brace & World, New York, 1937; Marc Bloch, Feudal Society, University of Chicago Press, 1961; Shepard B. Clough, The Rise and Fall of Civilization, Columbia University Press, 1957; Edward Gaylord Bourne, Spain in America, 1450-1580; J. H. Parry, The Establishment of the European Hegemony, 1415-1715, Harper, New York, 1961; Noel Deere, The History of Sugar, Chapman & Hall, London, 1949; and Bertrand Russell, History of Western Philosophy, Allen & Unwin, London, 1946.

Over the Wide Sargasso Sea; 1500 A.D.

First, clear the wide Sargasso Sea and alight somewhere along the North Atlantic Seaborad. It is the end of the fifteenth century. Around us, there are bustling metropoles arising everywhere out of the torpor of the Middle Ages. Sceptical scholars are reviving and probing ancient knowledge. Great strides are being made in geography, astronomy and engineering. The Church, by far the strongest link between the localities and long the unchallenged seat of conventional wisdom, is being forced to relinquish its hold both on the principalities and on the inquiring mind. Nations and science are in the making.

The commercial classes seem quite free from feudal interference. Most everywhere, the manor forms the basis of jurisdictional and religious unity. It is a social and economic institution tending to impose itself upon the whole life of its inhabitants. Yet, there are towns,and of two types. On the edges of the manorial centres of administration and able to procure shelter from the burgs in times of trouble are the faubourgs, mercantile agglomerations teeming with artisans in the service of trade. Farther afield lie agrarian towns. These are peopled by many free men having incentive enough to divide the labour, to specialize and to vent the surplus in the nearby market.

Lubricating the entire process are the merchants, strictly speaking, the "faubourgeoisie." It is they who have been eroding the foundations of the manor and the Church. Ranging long distances, traversing numerous toll bridges and tramping wicked roads, they have been calling public utilities and the state into play. They pay for the new services with profits. The goods they have been introducing from afar have been forming new tastes and putting pressure on the manors to mobilize their supplies for exchange. The money and the credit they provide have been facilitating the transformation. Equipped with their father's trade, younger sons can move more and more freely into the market and into the new life of the towns.

Now, with the impetus given to technology by improvements in the methods of science, the merchants are even better placed to search for profitable trade. At their disposal are better charts, bigger and sturdier ships and more efficient fire-arms. With these new found resources, they strive to outdo old trading rivals and outwit the religious enemy. As traders, they are able now to disturb the competitor's lines of supply and raise his prices. If they cannot take the infidel in a frontal attack, they will outflank him and take him in the rear. As crusaders, they can now more surely and swiftly carry the gospel beyond the pale of Christendom.

It is exploration, war and trade. To the West and to the East by the West, explorers scramble for advantage. Commercial, technical and religious considerations blend sweetly as caravels sweep outward among the seas. Centuries of frustrated hope are turning now into golden expectation.

It was not always like this, men say. What you witness now is a comparatively recent revival of commerce, an altogether fresh religious counter-offensive and only an incipient, though lasting, we hope, technological and economic advance. If we succeed, no doubt future generations will wonder at our passion for advance in space and our boundless quest for knowledge strangely admixed with a religious blindness to the virtues of the men beyond the pale. Perhaps they will find their clues in the fact that it was only yesteryear that we managed to effect any real breach in the lines of Islam. For centuries Christendom has been a veritable citadel under seige.

Christendom on the Defensive

At first, when Rome collapsed, Christianity was indeed obliged to recoil before Mohammed. Elegant Saladins, fierce Arab chieftains and Berber warriors stormed the entire Mediterranean forcing us to withdraw from the very cradle of our creed, converting the peoples with their own fresh message and where not, compromising with them for a tribute. Only Constantinople, the Levant way out on the wings, and sundry pockets in the Caucasus succeeded in withstanding the first terrible assault. The faith was thrown wholly back onto the Frankish kings and their German warriors descending from the North.

Fortunately, they proved to be a breed amenable to the word and by the time the first storm finally subsided, they had come to embrace the Church.

This consolidation made effective resistance possible as fresh attacks were mounted. But it was no more than resistance. There continued a perpetual skirmishing and rivalry on the frontiers until the counter-attack could be launched. Ultimately, there came a crusade for the Holy Places but it failed to find any principle of organisation strong enough to unite the local Christian cultures. Within the Church itself

indeed, faction was the norm - the division between Byzantine to the East and Rome to the West being only an extreme expression.

We are a people sprung from the high barbarism of the Western steppe, and exceedingly proud of personal achievement. Contradiction as it may seem in a feudal context, we do not saddle central authority too easily. If we submitted to the harsh imperatives of chieftainship and church, it was to bring some order into a world torn asunder by the invasion from the North and by the retreat of the culture before the attack from the South.

The manor that you see as still the typical institution is an adaptation of the Roman villa to the varied needs of Church, warrior chieftains and the folk. Where it entrenched itself, the needs that it fulfilled were clear and the preoccupations that it engendered distinct. The Scandinavians, for example, have been a people largely apart from the feudal order. Perhaps they will also be able to see more clearly than Europe what an illusion it is to conceive of individual liberty and central authority in terms of different options.

Certainly it has already been the case that while most of Europe was driven into a "closed estate economy" operating without money or markets, the Northmen and the Byzantines emerged in the ninth century with economies geared to trade. To be sure, their ways were different. Pounded on the East and North by waves of Asian warrior-traders and to the South-West by myriad Moslem pirates and venturers, Byzantium proceeded by diplomacy, defensive advance and exchange. In contrast, the Vikings, the tundra securely at their backs, swept irresistibly forward from their fjords, spitting fire and brimstone south onto the German plains and East into the Russian heartland.

The result of this Viking thrust was first, to dot the shores of the North and Baltic seas with enceintes or gorods, permanent fortresses from which to mount operations of piracy and pillage. But the aim of the Scandinavians seemed not to be residentiary conquest. Tribute they did take as a matter of course, and where they could, they did not hesitate to subjugate and exploit peoples as it suited them. But their preoccupations were essentially commercial and maritime not

territorial and religious. There were no sharp antagonisms of faith that forced them into holding territory. Thus, they soon passed from piracy to regular trade, pushing their enterprise right through the Dnieper Valley onto the shores of the Black and even the Caspian Sea. There they came face to face with the Byzantines and the Asiatics. The effect was to ring Europe to the East with a cordon commerciale, a heavily trodden route of long distance trade.

To the West and South of this line lay the great expanse of feudal terrain where land stood at the centre of social and economic organisation. Self-sufficiency was the norm. Exchange seldom extended beyond the reaches of the local market. The question of wage-labour did not even arise. Profit was hardly a consideration since surpluses stood little chance of being realized. The usury of interest could not be permitted since loans were in fact provisionings of subsistence in times of distress. Entrepreneurship was military and land was seen less as a factor of production than as a basis for securing the service of manpower. The economy was instituted primarily to suit the needs of military security.

In this context, there could be no concept of macro-economics. The region was no more than a locus of estates held together by the political and ecclesiastical authority which bound Christendom into a single and distinct, if fragmented, system.

Introverted, the manor was self-sufficient. The land was divided into the preserve of the seigneur (the demesne), the tenants holdings, and the commons. Typically, all of the residents were serfs or quasi-serfs. Clear-cut roles could be differentiated between the Steward and a senior Staff of Ministeriales, the domestic serfs who tended the household, the praedial serfs who tilled and shepherded and the workshop serfs who milled, spun, wove and brewed in the "gynecea". Routines and relations among these groups and between them and the lord were governed by well-defined customary rules identifying both obligation and reward.

The Revival of Trade

This economic order seemed to be enjoying an enduring stability. But the ceaseless flow of long distance trade on some of its borders had initiated a slow erosion of its defences. Even within its frontiers, the Trojan Horse of trade in salt, pepper, incense for churches and grain in

times of famine, had never been totally eclipsed. It was merely a matter of time and opportunity before the system would be breached.

Venice was particularly instrumental in this connection. Naturally biased by her land endowments towards trade, she was from early forced to exchange fish and salt with the neighbouring hinterland, for corn, wine and meat.

The penetration of the Po valley was only the thin end of the wedge. Soon there emerged numerous trading enclaves all the way along the coast and merchant entrepreneurs willing to venture on the sea and on the land. Trade on the sea had in any case, never ceased completely. Barely holding out, Constantinople had had to turn to the west for its provisions and the Italian venturers had grasped the opportunity to make the Aegean and Adriatic a busy line of supply.

It was a line which the Arabs tried to cut but without success. Their failure to do so in the event served only to open even more profitable avenues of exchange - this time between the merchants and the Islamic world itself.

This was when the towns - agrarian and commercial - arose. They arose mostly on the important trade routes. Though there was conflict with the Church over loan policy, conflict, for a time, with the landowners over the establishment of markets which upset the equilibrium of manorial organisation, and conflict with both over the tenure of the traditional system of authority, the transformation was remarkably smooth. Here population growth must have helped; as did the opportunities for profit created for the larger estates owned by the more powerful among the lords and within the Church. The complementarity of the agrarian towns with the mercantile conurbations must also have eased the path of change.

The widening of the market permitted specialization. At the great Fairs international transactors bargained over an increasingly wider range of goods. The underdeveloped North exported primary products: furs, tar, timber, honey, dried fish and salted herrings from Prussia and Russia; wines and wheat from France; wool from England. For these the developing industrial centres of the Low Countries exchanged metallurgical ware and partly finished cloth. But the prize trade was in the control of the bankers and book-keepers of the developed South, long in contact with the higher Islamic culture and in command of the

access to the East. With the Levant, the Italians exchanged arms and timber, the slaves secured in Spain and North Africa, and the woolen cloths purchased from the North. In return, they bartered or bought dyes, natural fibres, fine silks and muslins, medicaments and perfumes, fruits and spices, and sugar of the cane.

This Eastern Mediterranean trade meant many things. It meant procural for the West of the highly valued commodities of the East. It produced, of course, profits to fertilise one culture of grace, learning and leisure from another - for the Arabs maintained handsome courts and all the appurtenances of civilisation. And it demanded means of exchange, thereby creating the function of money lending and banking. Adaptable, the Italians involved themselves to the hilt; they were only too well prepared to employ their skills in Northern trade whenever, as increasingly happened, the opportunity presented itself or more likely, was created.

Openings were indeed, created from both ends. In the North too, by the end of the tenth century the Vikings' penetration had created firm linkages of trade between the North and Baltic Seas and even with England. Flanders was on its way from being simply a locality specialising

in cloth manufacture among the Low Countries to becoming a major industrial exporter of final goods and importer of raw materials from the world market. But until after a more general revival of European trade it was still largely a matter of potential.

The revival was brought by the freeing of the Mediterranean from Islam. At the beginning of the eleventh century the Pisans for the first time turned the tide against the Saracens and quickly took to attack. Soon they had mastery enough of the islands to be able at least to question the Moslem ascendancy in those waters.

Then, at the end of the century came the Crusaders. Denied their major target at first, they turned their attention to minor ones. In the process, they charted the way for the merchants. Within four decades the Gulf of Lyons had been incorporated into the commercial network. The line of supply now stretched from East to West and profits responded handsomely not least because, fulfilling the merchants fondest dreams, it was partly a military, partly a luxury trade.

Now the trade route ceased to be a mere backdoor half-circle on the Eastern frontier. Hauled along the seaway to the south, commerce passed swiftly up the hinterland ultimately to join the other half of the pincer descending from the North. Yet it was not all that swift. For in between were the manors, still too passive to activate their potential surpluses on any scale. But once the Fairs and the roving "dusty-foot" merchants began to prompt them regularly, the result was a veritable "industrial revolution".

Economic Development

This transformation of Western Europe into a commercial economy continued apace up to the end of the thirteenth century. Primary producers and manufacturers became tied in an indissoluable bond, a continental market in trade goods was founded and the supporting institutions came into being. Fairs served as money markets, clearing houses and futures markets; guilds constituted part industrial development corporations, part standards bureaux, part manufacturers' associations; the Hanses acted both as chambers of commerce and as free trade authorities; the commendas organized sleeping capital and so were in effect an early form of joint-stock companies. The metropoles we witness now had been born.

Their growth was retarded periodically during the fourteenth century. Famine, for example, afflicted the whole continent from 1315 to 1317 and the Black Death brought catastrophe from 1347 to 1350. All along, political conflict exploded into violence as peasants and landowners sought to adapt or were forced to adjust to the changing agrarian regime and as a plurality of municipal interests strove to establish more congenial forms of local government, of business regulations and of labour conditions. The unceasing contention of the Hundred Years War added its own quota; it bankrupted France and choked off normal development on both sides of the Channel.

Gains from Trade

At any rate, given the links previously created, the gains from interdependence became a real consideration whenever the pattern was distorted by war or natural disaster. The Italians, bankers par excellence, lost heavily in some depressions. England on the other hand, was compensated for the Hundred Years war by gains of temporary isolation: she was forced and took the opportunity to process her own primary produce and to become an exporter of the famous woollen cloth.

The gains from interdependence also became a consideration in more specific ways. The craft guilds on which the merchants depended to process their materials sought to guarantee their share of the product by rules which would tie trade to particular sources of supply. In this they were joined by the service trades which sought priority rights of carriage in the ports. But whatever was the effect of this rise of urban particularism on the internal political and economic structure of the municipalities, it failed ultimately to hamper the development of long-distance trade. Wealthy, the merchants were too flexible for that.

The old ruling classes had their assets tied up in land and, to the extent that they did not themselves become merchants, were obliged in the altered state of the economy to live as rentiers. In contrast, the successful venturing bourgeoisie could patronise the princes and win a new influence at court. They would rationalise the infra-structure from the top. By so doing, they give to the nation state its economic raison d'etre and to the royal power the decisive weapon against the Papacy in the struggle for territorial jurisdiction. The Pope would now be hardly more than an international arbiter having power to act, almost like the United Nations after him, only when the top nations

in the localities withheld their veto and conceded him the chance.

Mercantilism

As the royal power emerged as a supervising force over the cities, the main result was the displacement of urban protectionism by national mercantilism. Allied now to a mercantile interest the princes took steps to consolidate and strengthen their own positions. They employed the methods of protecting the industry and commerce within their own frontiers and of adopting activities conventionally undertaken abroad, or, if possible, of transferring them altogether.

England, more powerful and more united a nation state than any other, took an early lead. Thus, in the first decade of the fourteenth century, Edward II tried to prohibit the importation of cloth. Edward III next invited Flemish weavers to settle. Still later, carriage was reserved to English ships, silken imports discontinued, foreigners were forbidden to export wool and imports of Continental cloth barred completely. Thus, by the time Henry the VII ascended the throne mercantilist policies already held full sway.

Naturally, the Low Countries retaliated. Philip the Good prohibited the entry of English cloth and modernised the Dutch merchant marine, and readied Antwerp to become the hub of international commerce. For her part, France could not stir until after the Hundred Years War but when she did, Louis XI proved to be more vigorous an economic planner than any of his royal cousins. Over the Rhine, Germany remained divided and retarded. Italy was divided too, but held her position as the locus of the dominant metropoles. Indeed, the wealth and influence commanded by Venice and Genoa ranked them as the two great powers of the time. But the time for the city-state was ebbing fast.

The Maritime Nations

By the middle of the fifteenth century, the balance of power had shifted. The Levant and Mediterranean trade in luxuries still reigned supreme, it is true. However, once Islam had been driven from Europe, the revival of trade in the Mediterranean was bound to spill over into the Atlantic and switch the focus westward. Moreover, the Turk took Constantinople in 1453 and weakened one of the main supports of the Eastern trade.

The tide was running for Spain and Portugal. At the juncture of ocean and sea, looking North to Western Europe and West across the Mediterranean to the Ottoman, these maritime nations were poised to take the lead in commerce. To the South, the Moor was in retreat. In 1415, King John of Portugal took Ceuta in a crusade and established the first European beachhead in African and muslim territory. From then on, sailors have been steadily forcing the horizon back, aiming to go around the infidel to India, seizing, on their way, the opportunity to draw West Africa into the complex web of international commerce. In 1441, slaves and gold dust were brought back from Cape Bojador, and by 1448, negroes had become a staple requiring special warehousing facilities on the docks.

Then, for a time, the fever of exploration subsided, due to the death of the King and the war between the two Iberian countries. But about thirty years ago, it recovered. Soon the Canaries had been incorporated, an imposing new fortress had been established on the Bight of Benin, and ivory and pepper had joined negroes and gold in the bulging cargo holds of the trade.

If India seemed far indeed, the trip was nevertheless paying its way so exploration continued. In 1483, sailors attained the estuary of the Congo and next, in 1486, Diaz went all the way around the Cape. The door to the spices of the East had been forced open for any who dared to enter.

Similarly the way West. Heading South, time and again, Captains began to speculate on what might lay beyond the fearful green ocean. According to the sailors' yarns, there stood, beyond the horizon, a multitude of islands. Some, like the Azores, Madeira, Cape Verde and the Canaries soon ceased to be a fiction and began to assume the role of bases and advance stations. Before long, Madeira and the Canaries, in fact, had become a hinterland. They were growing and crushing the favoured cane which had been relayed by the Asian warrior traders and by Islam from India through Egypt to Sicily, thereby shifting the sugar trade towards European sources of primary supply.

The sugar trade meant profits, profits meant exploration for trade, and exploration prompted sailors' dreams. Now the fables report fleeting glimpses of countless islands in the sunset, a temptation for

imaginative cartographers to paint their maps with many more. One chain, it is said, has a particular allure. It is Antilla, lost isle of the seven cities. Who will venture to advantage? Diaz has gone to the East. Who to the West?

Many are the projects and the would-be venturers, but among them, one with a special appeal: Columbus, the man with the plan, seven years in the hatching: the enterprise of the Indies. To reach India, or if not, to discover islands and mainland in the ocean sea.

Island and Mainland to Westward

In 1492, Columbus sailed with three ships. Six months later he returned bearing gold and Indians and recounting the story of a new world that he had found on the far reaches of the Khan's empire. Now indeed, West might be East. If it were, then whose is which? What price King John's title to Guinea long secured by Papal Bull? Let the Pope again be arbiter.

Alexander, himself a Spaniard, effected the settlement in two steps. By the second, having confirmed Spain's claim, he issued the famous judgment, Inter-Caetera. The line he drew was readily accepted,

both sides sure of the better bargain. To Spain had gone the whole of the Western frontier, to Portugal anything within two hundred and seventy five leagues of the Azores. Spheres of influence had been defined.

Since then Columbus has twice gone again and other besides. Bobadilla, for example, has only just cleared for Española. To the North, it is said that crossings are being made by Cabot and the English too. From all reports, Aristotle it seems, was wrong: between the end of Spain and the beginning of India the sea is neither small nor navigable in a few days. Instead, there lies in the way an enormous territory, a great and altogether fascinating hinterland.

THE INCORPORATION OF THE WESTERN HINTERLAND : A MODEL IN HISTOIRE RAISONNÉE

The manner in which the hinterlands came to be incorporated into metropolitan systems is to be understood in terms of the kind of cultural contact first effected, the form of association instituted and the subsequent process of mutation and adaptation to developments from within and without. Clearly, the territories beyond the fearful green ocean and round the stormy Cape presented the newcomers from Europe with different systems and levels of political, economic and social organisation. Each situation set its own limits on the form of penetration, on the types of institutions which could be established and, therefore, on the subsequent pattern of evolution.

The East was one thing, the West another and the Guinea Coast something else again. The Florida Coast offered possibilities quite different from those of the Andes. Islands distinguished themselves quite sharply from mainlands and while in the Antilles, the Greater Isles permitted instant intercourse with the amiable Arawak,

the Lessor ones admitted few conquistadors who had not previously confronted a warring Carib.

Moreover, as we have seen, the maritime powers of Western Europe entered upon the enterprise of the Indies with quite specific ideological pre-occupations and practical aims. Certainly the religious confrontations with Islam and the iron curtains of feudalism had left their mark on the Christian mind while the recent emergence of a powerful economic and pllitical coalition of mercantile interest and sovereign power provided a considerable canalizing force for the newly emancipated energies. A telling effect was exercised, besides, by the growing technological and economic command which the culture was only just acquiring, partly from the heritage of the ancient world which the Mohammedan had helped to transmit and which could now be revived, partly from independent experimentation and speculation.

Yet here too among the metropoles, variety in internal situation and in timing of the external probe counted, as it did among the hinterlands. It does matter to our story which was the nation-state involved, who the explorers, when and where their

entry in the other world.

Accordingly, the systematic study of hinterland society calls for a typology of the different circumstances under which metropolitan penetration was effected. Hartz[1] has suggested differentiation on the basis of "the peculiar stamp of the European homeland, the nature of the colonial relationship, and the sort of contact the fragment has with African and aboriginal peoples." Morse[1] has stressed the importance of identifying the particular "embedding context" of the relationship between the metropole and the off-shoot society in the hinterland.

A Partial Typology

Plantation Economy falls within a class of economies which are externally-propelled in the sense that the adjustment process centers on external trade and payments. Within this class, however, a further distinction is to be made between those externally-propelled economies which are actively incorporated into external trade and those which are passively incorporated. In the former, the locus of discretion and choice is at home; in the latter, abroad. We denote the two by the terms Metropolitan and Hinterland Economy respectively, the latter being at the discretion of the former.

Together, a system comprised of a Metropole and one or more Hinterlands consitututes an Overseas Economy. The relationship between them may be described, summarily at this point, as mercantilist. This designation is meant to imply the existence of a general institutional framework which legitimates metropolitan spheres of influence and defines the limits of Hinterland intercourse with the rest of the world. In the real world there are many examples of this: the Inter-American System, the British Commonwealth, the centrally-planned economies and so on.[2]

For later convenience, let us assign the phenomenon a generic term : Inter-Caetera. This general provision subsumes four "rules of the game", as it were.

First, there is the provision in respect of the division of labour between Metropole and Hinterland. This is the Muscovado Bias which restricts the hinterland to terminal activity: either to primary production and crude processing or at the other extreme, to assembly. In either case, elaboration is left to the Metropole and with that, the lion's share of value added.

Secondly, there is the specification relating to the monetary system. This we denote by Metropolitan Exchange Standard. It entails the use in the Hinterland of metropolitan financial intermediaries, the maintenance of free convertibility with metropolitan currency at a fixed rate of exchange, and with that, the assurance that the liabilities of financial operators in the Hinterland are fully matched by metropolitan assets. The effect is to ensure that Hinterland assets are readily realizable in terms of metropolitan supplies of goods and services.

Thirdly, the rule governing the origin, destination and carriage of trade. Let us call this the Navigation Provision which guarantees metropolitan intermediation in all Hinterland trade just as the Metropolitan Exchange Standard ensures intermediation in payments.

Finally, the arrangements under which Hinterland producers are able to dispose of their output in the Metropolitan market. Let us call this Imperial Preference.

When we move from the general rules of the game to more specific definition of the relationships between Metropoles and Hinterlands, we must further acknowledge the existence of at least three sub-types of the latter. Here we differentiate by the economic insitututions which achieve dominance in the hinterland. The typical institution is necessarily an expression of the motives which initiated the mercantilist connection, an incorporation of the resources which are transferred from the metropolis and a recognition of the conditions encountered in the Hinterland. In short, it is a reflection of the way in which these factors determine the form of penetration and the organisation of resources for the purpose of production and trade.

The motives for initial contact may include plunder, exchange or production, the last for different purposes. That is to say the "view" may be short or long with profit "horizons" anywhere in-between. Related to this, the entrepreneur may be pirate, merchant, producer for trade, or producer for settlement. The resources transferred may be any or all of the following: capital, proprietorship, entrepreneurship, management and labour. The initial resource situation in respect to land, labour, and organisation may be "open" or "closed"; open if the basic resource, land, is a "free good", closed if it is scarce.[3]

In this context, we can identify numerous types of hinterlands: enclaves, settlements, garrisons, trading posts, encientes, gorods, to name a few.[4] It is from among them that we have chosen our three families of Hinterlands: Hinterlands of <u>settlement</u>, of <u>conquest</u>, and of <u>exploitation.</u>[5]

<u>Hinterlands of Conquest</u>[6]

The Hinterland of Conquest is at one extreme. Here, metropolitan interest is not so much in land as a productive asset, as in the organisation of people to facilitate the redistribution and transfer of

wealth. Accordingly, State (Crown) entrepreneurship is paramount and intervention takes the form of military and administrative occupation. The privilege of participating in the venture of conquest is closely circumscribed by royal favour to exclusive ports, exclusive trading houses and favoured conquistadores. The requirements of naval and military defense of the lines of communication to the hinterland dictate an exclusivist form of external economic organisation.

Resources flow from the metropolis to the hinterland to create the infra-structure necessary for the transfer of booty and the collection of tribute. This, in effect, entails the harnessing of native labour to produce communal goods, consumption supplies and precious metals. To this end, the encomienda is devised as an appropriate institution. The resource situation is closed, the population being already highly organised on the land. Breaches in the indigenous system of organisation are effected by any redefinition of resources and by the use of superior techniques of co-ercion. The resulting syncretic institution is thus "open" in some ways, "closed" in others.

The surplus mobilized in a Hinterland of conquest is divided into four shares, assuming that the encomendados have already found for them-

selves. There is the royal tribute, the quinto, a fixed proportion of the treasure gleaned. The remainder is then divided among three groups of claimants. First there is the element of rent accruing to the major officials resident in the hinterland and enjoying royal favour in the form of proprietory rights to land and titles to office. Second, there is the element of paniagua accruing to the minor bureaucratic officialdom (the "Senior Staff") who supervise the day-to-day activities of the population. Finally, there remains a residual which accrues as venture profits to the merchants.

Hinterlands of Settlement[7]

At the other end of the spectrum there is the Hinterland of Settlement. Here, mercantilism expresses itself less in the direct organisation of production and more in detailed regulations concerning what may be produced and the terms and manner in which trade may proceed. Imports to the Hinterland must come from metropolitan sources; staples must be sold exclusively in metropolitan markets; the carrying trade is typically reserved to metropolitan carriers; there are prohibitions on what may be produced in the Hinterland.

Hinterlands of Settlement have evolved from early ventures of exploration and trade. They are inhabited by descendants of indentured labourers, soldiers, clerks, and women brought by initiative on the part of the State (Crown), the company, or the private group. For all practical purposes the Hinterland is a New Metropole. Institutions have little chance of success if they restrict rights which were regarded as customary or even to which settlers simply aspired in the metropolis. The "open resource" situation therefore creates "open" institutions.[8] Production is organised around the family unit.

Inititally the settlers engage in production both of export staples and of foodstuffs for home consumption. They must pay back advances as well as subsist. If their competitive position as exporters of staples is weak and their cash earnings on that account are correspondingly small, their best possibility for earning foreign exchange is by selling their surpluses of food and supplies to Hinterlands specialized in staples.

The family claim constitutes a highly flexible and self-sufficient unit of enterprise. Land is free in exchange for the work of clearing it and defending it against previous and original inhabitants. The difficulty of obtaining metropolitan purchasing power and the high price of imported goods induces an

inventiveness in the making of implements and other necessities of life.

A high proportion of the output of the settlers' farmstead is used for own-account consumption and investment. Efforts requiring more resources than can be mobilized by a single family are assisted by neighbours. As land is free, there are no landed classes. Taxation is organised by local communities for local purposes. The ethos is democratic and egalitarian, the way of life austere and uniform. Patterns of demand here being formed have a high local content and form the basis of markets for domestic manufacturing industry.

Hinterlands of Exploitation [9]

Between the Hinterland of conquest and the Hinterlands of Settlement lie Hinterlands of Exploitation. Here, the metropolitan interest shifts from plunder and exchange towards production for trade though it never reaches production for hinterland consumption. Whereas in the Hinterlands of conquest the metropolis provides only military and administrative infra-structure, now it provides economic enterprise, organisation and initial capital, as well. Metropolitan labour, however, flows only to Hinterlands of settlement. Here, labour is brought in from other countries. These are

selected with regard to military and cultural considerations which permit institutions compatible with both the resource situation and the particular entrepreneurial ethos involved.

The combination of a merchant-pirate ethos with a short view and the introduction of labour into an open resource situation govern the form of social and economic organisation in the hinterland in much the same way as the mercantilist intent to transfer a surplus dictates exclusivist trading arrangements with the metropolis. Where land is free to be used for subsistence production, the recruitment of labour exclusively for export production imposes a need for "total economic institutions" so as to encompass the entire existence of the work force.[10] The plantation which admits virtually no distinction between organisation and society, and chattel slavery which deprives workers of all civil rights including the right to property, together furnish an ideal framework.[11] Hence, the term Plantation Economy for the particular sub-type of Hinterland Economy of Exploitation with which we are here concerned.

Plantation Economy

With the shift to mercantile production, the Crown is now largely passive except in framing the regulations regarding trade, production and property. It participates by dispensing titles of land ownership to favoured intermediaries. These are the lords proprietors. For a consideration tantamount to rent, they, in turn, farm out their rights to joint-stock trading companies under the auspices of which ventures are undertaken. Only this unit of enterprise can mobilise the merchant skills and the enormous concentrations of capital needed. The trading company initially tends to encourage pooling of capital and sharing of entrepreneurship. Partnership is common. Stock is ventured by lord, merchant, and planter, alike.[12]

But even if it is planters who transport their persons to the hinterland, it is by and large a merchant's game, and it is he who takes the title of venturer.

Since the economy produces almost exclusively for trade with the metropolis, the merchant occupies a strategic position. He operates at the metropolitan center where finance and shipping are organised, supplies

mobilized, and output disposed of. He is particularly well placed to secure his share of the product, whatever the state of trade.

In the Hinterland of exploitation then, the typical unit of enterprise is the joint-stock trading company. This mobilizes the venture capital, and converts it into fixed capital - slaves and equipment, as well as into working capital - the "magazines" of provisions, tools and supplies. The plantation is the typical unit of production. Save for supplies produced and consumed on own-account, it provides a single crop. Accordingly, the hinterland economy is comprised of a single sector, fractured into plantations, each a self-contained, self-sufficient, "total" institution, encompassing even its own civil government. Military government is provided by the metropolis. The pure plantation economy is modified only by the existence of a few nomadic native survivors, runaway slaves, and small settlers from the metropolis who resist the hegemony of the plantations.

The unit of enterprise and the unit of production are linked by the processes of supply and disposal. Within the framework of mercantile regulations laid down by the metropolitan government, trade and payments are effected as "intra-company" transfers and book transactions. The only

breach in the closed nature of the business occurs when the metropolis is unable to furnish provisions. This opens the way to the interloper. Best place to exploit the opportunity are Hinterlands of settlement attached to the same metropolis.[13] By dint of their disadvantage in staple production, they are most eager to earn exchange and they alone have the required surplus of food and stores. Besides being within the same mercantile walls, they are better able to finance a triangular trade through the metropolitan merchants than potential competitors. They fall within the provisions of the Navigation Provision, and the Metropolitan Exchange Standard.

The Golden Age

In the nature of the case, the foundation period of the plantation economy constitutes a veritable golden age. The system responds exclusively to external demand. Indeed, its establishment has been prompted by excess metropolitan demand and high prices. More slave labour is introduced and more virgin land is brought under cultivation. Output per slave is well above input per slave. There is a considerable surplus product available for distribution between lords proprietors, planters and merchants. If we abstract from income produced by indigenous

people, runaway slaves, or small settlers, between them they receive the whole of the domestic product. The product accruing to slaves is, strictly speaking, an item of maintenance costs. During this period, the economy acquires characteristic patterns of behaviour.

The first characteristic relates to the pattern of expansion. Since all supplies and capital goods used by the plantation are imported, the secondary effect of expansion of the output of these goods is experienced in the metropolis and in hinterlands of settlement which are able to operate within the mercantile regulations.

The secondary effect of expenditure out of factor incomes depends partly on where the landlords, planters and merchants live, and more importantly, on their pattern of demand. As a restricted high income group, their expenditures already tend to create a diversified demand for a whole range of luxury goods rather than large demands for a few basic items.[14]

If in addition, they live abroad and have a taste for metropolitan wares, their expenditures give the plantation economy no chance to diversify itself. Any dynamic in the economy must then be infused by the surviving small settlers and by manumitted slaves. But the former are pushed out as

the plantations engross themselves; the latter, brought up on plantation fare, have a high propensity to import and seek opportunities to produce goods or services for export.

The second characteristic[15] of pure plantation economy which becomes established in the foundation period, is the form of adjustment to fluctuating earnings. Market conditions though favourable in general, vary from time to time in response to temporary over-expansion, changes of weather, outbreak of war, and the like. Favourable conditions encourage expansion. But unfavourable conditions cannot be met by contraction, since labour-power is a fixed cost. When therefore, they are forced to reduce the output of the staple, the planters typically deploy slave labour power towards domestic and other services, towards augmentation of the infra-structure for export production, and towards the production of substitutes for imported supplies. But the extent to which these alternatives can be pursued without disrupting the routines, altering the methods of organisation, and modifying the structure of skills appropriate to the main task is severely limited by the high degree of specialization involved in the production of the staple. Adjustment, therefore, tends to take the form of government intervention. For example, land policy is employed to regulate entry into the business and political measures are divised to support prices

or reduce costs. Such intervention is facilitated by metropolitan residence (or frequent visits) on the part of proprietors, merchants, and planters.

The third characteristic of the plantation economy relates to the size and distribution of the product. For reasons deriving from the "total" and closed character of the business, rewards and profits, in Hall's terminology, are marked by a certain "incalculability".[16] First of all, slave-labour, the main capital asset, is subject to an indeterminable depreciation. Secondly, the production of capital goods in the form of cleared land and construction, and the performance of consumer services by slaves generate income for planters but problems of pricing render the real net product difficult to measure.[17]

Thirdly, proprietor, planter and merchant tend not to be distinguishable one from the other. It is, therefore, difficult to identify what is rent, what is reward for planting, or what is venture profit on merchandising. Fourthly, the practice of provisioning the plantation in kind and of settling claims in produce and in both the Hinterland and the Metropolis complicates accounting enormously. Finally, the communal consumption patterns associated with Great House living and the absence of any real distinction between economic organization and plantation society, clouds the

distinction between intermediate supplies in the form of feeding to slaves and factor incomes in the form of paniagua to "senior staff".

Over time, however, the situation simplifies itself to some extent. As the system expands, the merchants are called upon to mobilize new and larger stocks of capital. As new land is engrossed and fresh territory opened up, supply out-paces demand and prices weaken. Profits, however, remain good and expansion continues since, in any event, new land yields higher profits than old. The merchants now have a double incentive to protect the earning power of their capital by switching to mortgage lending on old enterprise and by shunting funds to new. Gradually, the longer established planters are accorded the entire entrepreneurial function; the newer ones, a diminishing minority, still tend to share it with the merchants.[18]

Gall and Wormwood

A second phase is initiated in pure plantation economy as planters assume the entrepreneurial role and receive the corresponding venture profits or losses. This is the phase of decline and collapse[19] of Gall and Wormwood, as one planter described it.

For a time, while profits are still high, they are able to encumber their estates with legacies. They are also in a position to employ senior managerial staff in the hinterland while they themselves retire to the metropolis, having acquired title from the proprietors. But as the system expands, costs rise and prices come steadily down. Soil exhaustion forces the employment of more labour-power per acre and per unit of output. At the same time, the rising demand for labour forces up the price of slaves. Meanwhile, chronic oversupply depresses the market. Rising costs and falling prices squeeze profits thinner and thinner.

What is more, there is now an extra burden of costs. Encumbrances made in better times are a fixed charge on product. The manager - attorney in the hinterland has to receive his paniagua and his share of product. Besides, he probably exploits the opportunity to increase his real draught on plantation income in other ways. Typically, he is a factor who draws commission from the metropolitan merchant. He stands, therefore, to gain by inflating the plantation's import needs. As manager and attorney he benefits from augmenting current output as the expense of a swifter consumption of the planter's capital.[20]

As bad times persist, mortgage debt is contracted or extended, so increasing the burden of fixed charges on product. Deteriorating conditions of trade increase risk to creditors and push interest rates up.

Yet the planter has few possibilities of successful adjustment. Even if he can find the capital for it, the rules do not permit him to undertake the elaboration of his product in the hinterland. He is restrained by the so-called "Muscovado Bias." Nor does the high degree of specialization of all the hinterland institutions including the near-uniqueness of the form of labour organisation, permit him any real flexibility in the choice of production techniques or in the composition of output. To move to new territory is an expensive and troublesome business requiring him to uproot a whole society and to move an entire agro-industrial complex.[21] Caught in a "Goveia Syndrome", his only genuine option is to seek support for prices through the use of political influence in the metropolis.

But by now the metropolitan economy is undergoing far-reaching changes. Merchant enterprise has been organising industry, activating agriculture, and transforming the economy. Increased commodity production

both in the hinterland and in the metropolis, reduces the scarcity value of the imported luxuries. In the course of time, the expansion of production and the extension of the market erodes mercantile profit and with that, mercantile influence. This is the "Williams' Effect."[22]

Captial shifts from trade to production. Large numbers of workers have now to be fed in the towns. Expansion in the metropolis, too, has brought the system up against the limited supply of land. The exclusivist structure erected to protect the profitability of mercantile economy is seen by rising industrial interests as a brake on further expansion.

The signals of the change reach the Hinterland in the form of inadequate profits even for reasonably efficient producers. Ultimately, the cause of the secular downward run in prices is the shift of investment into new terrain as metropolitan "merchants" use their discretionary power to switch capital to more profitable enterprise. The result of this is to bring into play cheaper supplies which, in turn, make the system of Imperial Preference unprofitable to the metropole and the case for dismantling the exclusivist arrangements irresistible.

Part of the switch of the capital made by the merchant class in the Hinterland trade is into industry. To the extent that the resulting industrialisation becomes a cumulative process, it makes the Hinterland more and more a taker of technology and of taste from the metropole. And in so far as the bargaining power of workers in the metropole is strengthened in the process, a floor is set on the prices of manufactures and, therefore, on the extent to which the long-run terms of trade can ever favour the Hinterland.

These results can be avoided only if the Plantation Economy faces the fact of over-maturity and lack of competitiveness, replaces its basic structures and institutions, and introduces more flexibility into the adjustment process. This implies a "political" solution. The economic solution is largely ruled out by the fact that it requires large capitals to de-specialise, to transform technology and to finance the culturally entrenched taste for imports built up in the Golden Age.

In the age of decline these are not available. The economy must, therefore, borrow. With taste and technology fixed, this implies the consumption of capital, which expresses itself in growing indebtedness, and

in lagging productivity and output. The growing indebtedness has two effects. First, it increases the discretionary power of the creditors and, secondly, it reduces the share of total product which is unencumbered and, therefore, disposable. The further effect of this is to discriminate against those in the Hinterland with the least power to intervene. These are the slaves. By enhancing the degree of political instability, this only hastens the need for a political solution.

The possibility and the character of such a solution are both powerfully influenced by the economics of the situation. The growth of the discretion of metropolitan creditors is paralleled by a willingness of the metropolis to maintain stability by military intervention. Economic decline, however, implies mounting costs to this operation. Ultimately, when the costs become intolerable, the Metropolis has little choice but to attempt a solution by itself initiating institutional reform. At this point, the Plantation Economy is presented with a new situation though it carries forward, among other things, a legacy of taste for imports and a capital stock in mortgage to metropolitan merchants.

Adjustment of Hinterlands

The change in economic conditions in the metropolis which induce these developments in Plantation Economy also affect other Hinterland economies and they are all called upon to adjust. Those which have been exporting within the framework of mercantile protection are forced to become competitive either by reducing costs or by switching to new exports. Or they must substitute home production for imports. Those which have not previously been exporting, now have the chance to do so. The industrial expansion of the metropolis does not merely increase the demand for wage goods. Also wanted are fertilizers for the new lands, raw materials and mineral resources for industry, better quality and more exotic foods for consumers as the standard of living of the metropolitan population rises.

The pattern of adjustment is profoundly influenced by whether it is a hinterland of conquest, a hinterland of exploitation or a hinterland of settlement; by the degree of maturity which each has achieved in its status as a member of one of the three groups; and by the strength of the stimulus to export which reaches it either from its own metropolis or from some other.

Hinterlands of Settlement

Adjustment in pure Hinterlands of settlement is comparatively easy. Foodstuffs previously produced by settlers for domestic consumption become major staples in high demand in the growing metropolitan markets. Hinterlands of settlement established within the framework of the old mercantile system experience population expansion as successive waves of migrants are displaced from the land by the process of industrialisation in the metropolis. Entirely new hinterlands of settlement are also founded.

The demand for cheap food and cheap agricultural raw materials induces a flow of capital from the metropolis to the hinterland. The objective is to extend the area of economic cultivation by lowering the costs of transportation. From profits accumulated in the metropolis there is a real transfer in the form of capital investment in railways, ports, harbours, steamships and other forms of infra-structure directed to supplying metropolitan markets with cheap foodstuffs. The metropolitan shortage of land is eliminated by extending the frontiers of cultivation across the oceans. While geographic and economic factors

favour some hinterlands of settlement in comparison to others, the less favoured eventually get their turn as metropolitan demand and infra-structure investment extend the frontiers of cultivation.

Hinterlands of Conquest

Hinterlands of conquest find adjustment a far more complicated matter. They have the formidable problem of replacing the military and administrative apparatus which served metropolitan plunder and transfer by one which facilitates metropolitan participation in production for the international economy. While metropolitan governments may help in "calling this new world into existence", the pressure to transform the institutional order is exerted principally by private enterprise in quest of specific resources. Crown entrepreneurship is succeeded by private entrepreneurship which is, however, financial rather than mercantile or industrial. Its influence on the hinterland is exercised by raising capital and making funds available to the government to create infra-structure suitable for export production. Resources for purely domestic uses receive assistance only incidentally.

Transformation proceeds through the establishment of units of production which tend to be self-contained and self-sufficient. They possess a flexibility which the institutional order denies to producers in general. They are established either by enclosure of land and local labour or by the introduction of alien labour after the fashion of the plantation with the important difference that there exists an enormous domestic sector. The phenomenon of enclaves thus appears. Alternatively, entirely new hinterlands of settlement are founded along-side the hinterlands of conquest and begin to draw recruits from them. The more these hinterlands of conquest are impelled by their own maturity to adopt new forms of economic organisation, the more there is a merging of migrants from the traditional order with new settlers. This creates the phenomenon of dual economy.

The enclaves, and the settlements on the flanks of the old hinterlands of conquest are, in the nature of the case, small and wealthy in relation to the setting. They are highly specialized in exportation and earn foreign exchange out of which to supply their diverse consumption needs. Expenditures place no great pressure on supply in the hinterland itself. Supply conditions in any case are akin to those of a pure hinterland of conquest. The system expands in response to the growth of

external demand. For all practical purposes, the unit of enterpise is the metropolitan bank or firm which initiates export projects as a means of selling metropolitan investment goods, of investing metropolitan capital and of provisioning the metropolitan economy with needed supplies. Local entrepreneurs are involved in furnishing capital and in the management of production. They do not, however, constitute the dynamic class in the economy.

Hinterlands of Exploitation

The greatest difficulty in adjusting to the breakdown of the mercantile order is experienced by the hinterlands of exploitation because here the mercantile system has left behind its most elaborate productive apparatus. The legacy of institutions, structures and behaviour patterns of the plantation system are so deeply entrenched that adjustment tends to take place as an adaptation within the bounds of the established framework. By and large, the economies do not experience any considerable or sustained relief from their dependence on the traditional export staple.

At the same time, there exists such a variety of situations that generalisations concerning the responses of the various economies

to the ending of the mercantilist era is difficult. It is, therefore, necessary to distinguish at least three intital situations. On the criterion of established patterns of land use, we distinguish the mature plantation economy, the new plantation economy and the mixed plantation economy.

Mature Hinterlands of Exploitation[23]

In the mature hinterlands, staple production has long encompassed the entire territory. Plantations exhaust the area of cultivable land. The system has expanded to its limit and beyond. Soil exhaustion and increasing difficulties in obtaining slaves have raised costs of production while over-supply of metropolitan markets has been depressing prices. The plantations are no longer viable. Some go out of business, others cut back production and land and slaves are thrown into idleness. Plantations turn to the metropolitan government for aid in the form of subsidies grants, bounties, development loans and assistance for the purpose of the maintaining of law and order as enforced idleness of work-units brings political instability. However, the political climate in the metropolis is hostile to any bolstering of mercantilist privilege. The new industrialist class is actively engaged in dismantling the

traditional exclusivist structures. The Metropolitan government responds to the pressures by abolishing the old labour regime in the hinterlands and by removing the market monopoly.

The effect of these changes is to aggravate the problems of the plantations and to force them to undertake internal adjustments. To begin with, more plantations fold up and more land is released. The liberated slaves are able to acquire land by purchase or by squatting. To the extent that peasants and small farmers establish themselves outside the plantation sector, the planters are faced by a smaller and less reliable labour supply and by rising wage rates. The competition for labour directly attributable to the establishment of a domestic agricultural sector is aggravated by the growth of an urban sector. A market for crafts and services springs up in response to the greater money demand resulting from higher levels of real income and from the break-up of the old system of bulk importation and provisioning in kind.

The terms on which the ex-slaves will offer labour to the plantation are determined by the amount of land which they can acquire

and by the productivity of that land. The greater the amount of land available to the cultivators and the higher their productivity, the more restricted the supply of labour available to the plantation, and the greater the upward pressure on wage rates. The labour market is also affected in a very special way by the high value placed on independence which fixes a minimum requirement of own-account production and by taste patterns which dictate a minimum requirement of imported consumption goods. These are parameters fixed by the legacy of slavery. However high are wage rates on the estates, labour will work its own land in the interest of independence. However low they be, cultivators will offer a few tasks of work in order to procure cash to buy imports.

The necessity to work for low wages in the latter case is imposed by the limited plantation demand for domestically-produced output. This in turn reflects the leakages out of plantation income, either because many planters live in the metropolis or because, when they are resident, considerations of taste dictate consumption patterns with a high import content. Thus, it is the legacy of obligations to absentee owners and the inherited taste for metropolitan goods which inhibit the diversification of the economy by setting close limits on the

demand for domestically-produced output. Both the planters and the cultivators need the foreign exchange provided by the export staple.

Faced by falling prices and rising costs, the planters must find ways to maintain profitability. Specifically, they must either introduce improved methods and increase output per man, or they must secure more and cheaper labour through a greater participation by the cultivators in estate work.

However, the extent to which productivity can be raised is limited by the difficulty which a moribund business faces in raising funds. The planters, therefore, attempt to raise output per man on the estate by measures which do not require capital. They offer labour the incentive of metayage as an incentive to raising productivity.[24] Cultivators accept this as a way of securing their foreign exchange on a permanent basis. But the planters cannot afford to make the scheme permanent because in good years they have to relinquish too big a cut of their profits.

They, therefore, use their political influence to create more favourable conditions in the labour market.[25] They enforce restrictive

land and credit policies on the government with the intention of limiting the amount of land which cultivators can acquire.

Similarly, in education policy, they oppose efforts by the government and the church to equip the population with skills that would enhance the productivity of the domestic sector. They attempt to restrict entry into urban trades. Finally, they impose taxation on imports in order to reduce the purchasing power of wages and so to draw more labour onto the market. In the face of this sort of pressure, the only escape of the population lies in migration. The irony of this is that it makes it possible for more efficient plantations to establish themselves in other hinterlands.

Efforts to solve the problems of high cost production by rationalization are thus frustrated. The mature hinterlands survive only to the extent that the prices of manufactured imports fall faster than the staple prices; or, to the extent that as producers with a backward technology, they have a secure market in supplying inputs to metropolitan processors whose technology is correspondingly out of date. Under threat of late-comers with newer techniques, producers in both the metropolis and the hinterland have a common interest in erecting shelters for their less efficient operations.

New Hinterlands of Exploitation [26]

While in the mature Hinterlands of exploitation the passing of the mercantilist era introduces severe pressure on profits, in the new lands opportunities for staple cultivation are opened up.

The old mercantile system to which these lands were attached, has lacked the dynamic to organize production. Entrepreneurship had concentrated either on plunder or on exchange. With the internationalization of trade and capital flows across old mercantile boundaries, hitherto unexploited lands are in a prime position to cultivate the export staple.

New techniques of production can be adopted from the start. To take advantage of these, large capital investments are required and are easily attracted to unencumbered property. On all counts the competitive potential of these new plantations is strong. Because industrialization in the metropolitan countries is now well underway, capital comes in the form of machinery and equipment with built in modern technology. Insofar as the capital comes from newer industrial countries with less developed lending institutions where firms are large and dynamic, investments

tend to be effected through subsidiaries.

The constraint on expansion is the availability of labour. The hinterland economy has been slowly developing from a military garrison into a colony of peasant farms and indifferent plantations. Labour must, therefore, be introduced from outside.

The mature hinterlands are a natural source. What they cannot provide must be procured elsewhere. In either case, institutional forms must be devised to ensure efficient control of work-units in a situation of abundant land. This calls for indunture, contract labour, or a ratooning of slavery in some form.

Industrialization in metropolitan countries and in the hinterlands of settlement creates a rising demand for the staple but is remunerative only to a reasonably efficient producer. The new lands expand at the expense of the mature plantation economies, wnich then release a constant stream of labour.

As expansion proceeds, the plantations encroach on the preserves of the established peasant sector. They engross land and displace labour.

The ready availability of foreign exchange invites the importation of a highly diversified set of consumer goods, restricting the expansionary effect of rising incomes on domestic suppliers. The plantation sector becomes the major influence on public policy and determines the allocation of infra-structure investment. A highly specialized economy develops, well equipped to take advantage of favourable markets. Fortified by their competitive advantages over more mature producers, plantations expand without limit.

The Mixed Plantation Hinterland [27]

The mixed plantation hinterland arrives at the end of the mercantile era with an economy in which the declining fortunes of the staple has set in before plantations occupy all cultivable land. Although plantations predominate, there exists a peasant sector of small settlers who have always been outside the orbit of the staple, or who have fled from it.

In the peasant sector leakages out of income are lower than in the plantation sector. Peasants and small farmers are relatively free from the legacy of the plantation and their consumption patterns have a correspondingly smaller import content. While they produce minor

exports, they are not compelled to specialize in them because they have fewer requirements for foreign exchange. A large part of their output is consumed within the sector. These settlers have a keen interest in raising productivity. They exercise a restraining influence on the planters so that public policy is not exclusively dominated by plantation interests. Infra-structure is correspondingly less specific to the staple than in mature plantation colonies.

The break-up of the mercantilist labour regime and the ready availability of land exert strong upward pressure on wage rates. Adjustment takes the form of widespread bankruptcy and the peasant sector is expanded by the exodus of land and labour from staple cultivation.

In this economy there are no landless workers. Three forms of land occupancy can be discerned. [28] First, there are small farmers who engage in the cultivation of a number of minor cash crops for the metropolitan markets. Secondly, there are occasional labourers who cultivate leaseholds and freeholds on which they grow provisions for their own use, and for domestic sale. Thirdly, there are full-time labourers who, however, rent provision grounds from the plantations.

The expansion of the independent rural sector generates a corresponding growth of urban activity. Craftsmen, artisans, and petty traders join the merchants in servicing the requirements of the enlarged domestic sector. A town class emerges.

Squeezed by rising wage costs, the plantations seek ways to stabilize their labour supply by the same methods employed by their counterparts in mature plantation colonies. These methods, however, prove much less effective. Labour has far more alternative employment on its own land. Government is far less amenable to plantation pressure because of the countervailing political influence on the town classes and the small farmers.

Nowhere is this better illustrated than in the frustration of attempts to introduce external labour of a kind similar to that brought into the new plantation colonies. With the exception of the farmers who themselves require cheap wage labour, the population effectively resists the imposition of taxation for purposes which are designed to bring benefits mainly to the planters. The merchants, in particular, are adamant in their opposition to import duties which would restrict domestic

purchasing power and so affect their earnings.

The planters' only option is to improve techniques and raise productivity. This, however, demands more capital than they can mobilize on the basis of their indifferent profits.

Unlike new hinterlands of exploitation, the staple cannot attract external capital to modernize and rationalize. The conditions on which land and labour are available are very much less favourable. Unlike the mature hinterlands of exploitation, the mixed economies adjust to the break-up of mercantilism by increasing the diversification of output.

The availability of land and the existence of political structures independent of the plantation provide an escape from the staple. For these reasons this type of hinterland is unique in regard to its economic diversity.

In the post-mercantilist era, the dynamic of expansion in these territories passes to the independent sector. However, the legacy

of the plantation is carried into the new domestic sectors in the form of local and regional consumption patterns. The internal migration of labour from the plantations hardly lowers the propensity to import and restricts the potential of a growing domestic market. At the same time, the migration of the staple to the new lands established highly import-intensive patterns of consumption in neighbouring territories. The effect is to stunt the organic development of a regional market where population and income growth may create large scale demand for a range of local produce. The economic future of the hinterland, therefore, hangs on its ability to supply new export staples with brighter prospects than the old.

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FOOTNOTES

1. See Louis Hartz, The Founding of New Societies, Harcourt, Brace and World, New York, 1964.

2. See Gunnar Myrdal, " ---------- " Co-existence, Vol. , No. , 1968.

3. Herman Nieboer, Slavery as an Industrial System, Martinus Nijhoff, Second Revised Edition, The Hague, 1910. For these concepts, see p. 386.

4. See p. 22, Henri Pirenne, Economic and Social History of Midieval Europe, for multiple forms of penetration particularly by the Norsemen. Also, T.S. Willan, Studies in Elizabethan Foreign Trade, Manchester University Press, 1959.

5. The categories are borrowed from Richard Pares. 'Economic Factors in Empire History," in Carus-Wilson, Essays in Economic History, ----------, 19-- .

6. This is meant to correspond to the case of Spain in Andean America and New Spain. For background see particularly, J.H. Parry, The Spanish Seaborne Empire, Hutchinson, London, 1966.

FOOTNOTES - cont'd

7. This is meant to correspond to the case of the North and Middle Colonies of North America. The classic work is Charles M. Andrews' The Colonial Period of American History, Yale University Press, New Haven, 1937.

8. The conditions under which initial institutions broke down in some North American colonies are discussed in Sigmund Diamond, The Creation of Society in the New World, Rand McNally, Chicago, 1963.

9. For a definition of the boundaries of this experience, see Charles Wagley, "Plantation-America: A Culture Sphere", in Vera Rubin (ed.) Caribbean Studies : A Symposium, University of Washington, Seattle, 1960.

10. The concept of "total institutions" comes from Erving Goffman, Asylums, Doubleday, New York, 1961. For an adaptation to the sociology of the plantation, see Raymond Smith, "Social Stratification, Cultural Pluralism and Integration in West Indian Societies, in Caribbean Integration, Sybil Lewis & Tom Mathews, (eds.), Institute of Caribbean Studies, University of Puerto Rico, Rio Piedras, 1967.

11. Edgar T. Thompson, "The Plantation Cycle and Problems of Typology", in Vera Rubin, Op. cit.

12. Richard Pares, p.1-13 passim., Merchants and Planters, Economic History Scoiety, Cambridge, 1960.

FOOTNOTES - cont'd

13. Richard Pares, Yankees and Creoles, Longmans, London, 1956.

14. Celso Furtado, Development and Underdevelopment, p.64, University of California, Berkeley, and Los Angeles, 1964.

15. Lloyd Best, "Current Development Strategy and Economic Integration in the Caribbean," Lewis and Mathews, op.cit., p.61, "The Mechanism of Adjustment."

16. "Incalculability as a Feature of Sugar Production During the Eighteenth Centure", Social and Economic Studies, Sept. 1961.

17. Celso Furtado, Cap. IX, "Flujo de ingreso y crecimiento", Formacion Economica del Brasil, Fondo de Cultura Economica, México, 1962.

18. Pares, Merchants and Planters, pp.29 - 37.

19. Lowell Ragat , The Fall of the Planter Class in the British Caribbean, 1763 - 1833, Octagon Books, New York, 1963. (New Edition)

20. Douglas Hall, p.21, "Absentee Proprietorship in the British West Indies", in The Jamaica Historical Review, Vol. IV, 1964.

FOOTNOTES - cont'd

21. Elsa Goveia, Slave Society in the British Leeward Islands at the End of the Eighteenth Century, Yale, New Haven, 1965.

22. Eric Williams, Capitalism and Slavery, Deutsch, London, 1964.

23. The best cases in point are Barbados and Leewards.

24. See Woodville Marshall, "Metayage in the Sugar Industry of the British Windward Islands, 1838 - 1865," in Jamaica Historical Review, Volume V, May 1965.

25. See Venetta Ross, "Emancipation: Revolution or Reformation in the Leewards?" unpublished mimeo. Also, W.A. Lewis, "Foreword," in Gisela Eisner, Jamaica, 1830-1930, (A Study in Economic Growth), Manchester University Press, Manchester, 1961, p.xix. Still further, Eric Williams, History of the People of Trinidad and Tobago, PNM Publishing Company, Port of Spain, 1962, pp.213-15.

26. This model is best instanced by Trinidad in the 19th Century and particularly by Cuba in the 19th and 20th centuries.

27. Jamaica is the outstanding real-life example of this abstraction.

28. Douglas Hall, Free Jamaica, Yale University Press, New Haven, 1959, p.158 & p.182.

AN IDEAL - TYPE ACCOUNTING FRAMEWORK FOR PURE PLANTATION ECONOMY[1]

We now present an Accounting Framework for Pure Plantation Economy. Though the accompanying Chart represents an Ideal-Type, we do not attempt simply to reproduce the features of the pure case which emerge from our other essays. Instead, we seek here to show those attributes of Pure Plantation Economy which are best expressed by a quantitative medium. In terms of both economic concepts and accounting categories, the Framework is designed to reveal its kinship connections with the accounting systems devised for Plantation Economy Modified and Plantation Economy Further Modified.[2]

Transactions connected with the intermediate provisioning of the units of production are recorded in the Matrix $A_1 \times B_1$ (domestic inputs) and B_2 (Imported inputs). The Matrix $A_1 \times B_3$ registers the purchases of factor services. The Gross Domestic Product by "Industrial" Origin is therefore shown in Column B30.

The Matrix $A_1 \times B_4$ shows the composition of total final supply. Domestic Supply is recorded in Column B40, Final Imports in Column B42 with associated

duties and margins in Columns B43 and B44. Final Imports are treated as competitive with the outputs of the distribution and service sectors.

The Matrix A_1 x B_5 records the transactions associated with demand. The composition of Final Demand is shown by the entries under column heads B511 - 514. Intermediate Demand is registered in Column B52.

Data relating to employment and the capital stock are conveniently recorded along rows A_3 and A_4 under Column Heads B_1. Ten Income Disposal Accounts appear on Rows A_7. These accounts have been selected because of their value in explai ning the way in which a Pure Plantation Economy is incorporated into the international economy and the process by which it adjusts to changing conditions of production and marketing.

The Matrix A_7 x B_2, B_3 and B_4 records the receipts which accure to these income disposal accounts in the process of producing and providing supply. The Matrix A_7 x B_5 shows the expenditures out of these accounts for the satisfaction of Final Demand.

In the Matrix A7 x B7 , we cross over three Transfer Columns (B7) with the ten rows (A7). This reveals the manner in which imbalances in household earning and expenditure on account of settlers and urban trades are adjusted by hoarding or dishoarding of specie (A71 - B711). It also reveals how planters' accounts are brought into balance by transactions with merchants (A7422 - B742).

The Framework highlights three important and related characteristics of the economy. The Accounts show first that Pure Plantation Economy forms part of an Overseas Economy; secondly, that it is dominated by total economic institutions; and thirdly, that a high proportion of its transactions is marked by "incalculability".

THE BALANCE OF PAYMENTS

PAYMENTS ON CURRENT ACCOUNT

Imports of Goods

"Magazines" (M_{xg1}*)

A7423 - B211** from Other A/C's in Metropole (Merchants)

A7424 - B211 from Hinterlands of Settlement

Slaves (M_{xg3})

A7432 - B42 from Other Countries (Merchants)

A741 - B42 from Other Hinterlands of Exploitation

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* Notation

** Cell No. in Chart

THE BALANCE OF PAYMENTS

PAYMENTS ON CURRENT ACCOUNT

(continued)

	Machinery and Equipment (M_{xg4})
A7423 - B42	from Other A/C's in Metropole

Factor Incomes

A7421 - B351	Distributed Venture Profit on Production (V_{pxx})
A7423 - B331	"Settlement" Encumbrances (T_{pll})
A7422 - B331	Servicing of Mortgages with Merchants (T_{p2})
A7422 - B352	Venture Profit on Trade to Merchant Bankers (V_t)
A7424 - B352	Venture Profit on Trade to Merchants in Settlement Hinterlands (V_t)

THE BALANCE OF PAYMENTS

PAYMENTS ON CURRENT ACCOUNT

(continued)

A7423 - B32	Lords and Company Proprietors' Rents (T_{Qx2})

Government Transactions

A744 - B32	Royalties ot Metropolitan Government (T_{Qx1})
A744 - B221-22 & B43	Duties on Imports into and Exports from Hinterland (M_{xs1})

Minus:

A744 - B32	Expenditures by Metropolitan Government on Law and Order in the Hinterland
A744 - B32	Grants to Planters
A744 - B221-22 & B43	Drawbacks by Planters on re-exports of staple to Rival Metropoles

THE BALANCE OF PAYMENTS

PAYMENTS ON CURRENT ACCOUNT

(continued)

Retained Earnings

A7421 - B351	Re-invested Venture Profit on Production (V_{pxr})
Total Current Payments	

Imports of Services (M_{xs2})

A7423 - B231 - 32 & B42	from Other A/C's in Metropole
A7424 - B231 - 32 $ B42	from Hinterlands of Settlement

Imports of Managerial Services (T_{Axx})

A7423 - B31	Attorney Income

THE BALANCE OF PAYMENTS

PAYMENTS ON CURRENT ACCOUNT

(continued)

Specie Imports (M_{xg2})

A741 - B212 from Other Hinterlands of Exploitation

A7423 - B212 from Other A/C's in Metropole

A7431 - B212 from Rival Metropoles

Overseas Economy

The working of Pure Plantation Economy is comprehensible only in terms of the specialized roles played by the different parts of Overseas Economy. Accordingly, it is the balance of payments rather than the national accounts which requires disaggregation and detailed study.[3]

The Balance of Payments

On goods account, save for certain illicit transactions[4] with Hinterlands of Settlement (A7424), supplies of "intermediates" (B211) and of building materials and equipment (part B42) originate exclusively from the Metropole (A7423). Supplies of slaves (part B42) come from Other Countries (A7432) only, again barring transactions (A741) which take place under an official cloud. (e.g. A741)

THE BALANCE OF PAYMENTS

PAYMENTS ON CURRENT ACCOUNT

Exports of the Staple (X_1)

A7423 - B5131	to Other A/C's in the Metropole
A7424 - B5131	to Hinterlands of Settlement
A7431 - B5131	to Rival Metropoles

Re-Exports of Slaves and Equipment (X_2)

A741 - B5132	to Other Hinterlands of Exploitation

Receipts on Current Account _____

Deficit on Current Account _____

Plantation A _____

Plantation N _____

Total _____

On services account, payments are disaggregated to show the character of metropolitan intermediation. The value-added by merchants on account of Hinterland trade is treated as venture profit on trade (B352). Net receipts by Metropolitan Government in the form of duties and drawbacks are also isolated under column head B221 - 22. Services not procured from merchants or from Government are recorded under "cost-margins" in Column B231 - 32. This treatment admits evaluation of the direct gains from trade within the Overseas Economy which accrue to different accounts as a result of the rules of Inter-Caetera.

On income account, all factor payments abroad accrue to the Metropole: to planters' accounts (A7421), to the accounts of Merchant Bankers (A7422), and to Other Metropolitan Accounts (A7423) if we abstract once more from transactions with the interloper (A7424 - B352).

THE BALANCE OF PAYMENTS

OUTFLOWS ON CAPITAL ACCOUNT

Liquidation of Debt

A7422 - B742	to Merchant Bankers by Plantation A
	to Merchant Bankers by Plantation N
Total	
Increase in Liabilities	
Total	

INFLOWS ON CAPITAL ACCOUNT

New Borrowing

A7422 - B742	from Merchant Bankers by Plantation A
	from Merchant Bankers by Plantation N

THE BALANCE OF PAYMENTS

INFLOWS ON CAPITAL ACCOUNT

(continued)

Retained Earnings		
A7421 - B351		by Plantation A
		by Plantation N
Total Capital Inflow		

Apart from planters' reinvestment of earnings, transactions on capital account involve only loans by merchant-bankers and associated liquidations of debt. For this economy, there exists no pool of capital over which a banking system exercises discretion in regard to allocation between competing claims. Loans are specific to particular plantations as they are to the purpose of provisioning the productive unit with supplies. They take the form of merchant advances to planters on current account. Where merchants share the entrepreneurial risk with planters the servicing of the debt results in income flows of Venture Profit from Trade; where not, it results in mortgage servicing and amortisations on capital account.

"Total" Economic Institutions

Pure Plantation Economy is a locus of economic institutions which are held together by little more than the system of law and order. The Intermediate Matrix $A_1 \times B_1$ is tailored to reveal this. There is a clustering of transactions along the principal diagonal. This reflects the fact that the plantations are the typical units of production and that

they provision themselves either from inside or through their merchant connections in the metropole. For all practical purposes, each is self-sufficient in regard to its operations in the hinterland. Even if it may procure some services from the Urban Trades (A111.2 - B122) and some primary staple output from Settlers (A111.2 - B121.11), it is almost completely independent of the rest of the economy.

Each plantation is, in fact, a "total" economic institution. It commands its own distribution, construction, service and subsistence facilities within a single complex. Its supply of output from these facilities does not respond to aggregate domestic demand but only to changes in external demand for its own staple output. Correspondingly, exports of the staple are the largest single component of final demand for plantation output.

In as much as plantations are "total" in character and are the typical institutions, Pure Plantation Economy is a segmental economy. The firm is the meaningful unit of economic analysis. Moreover, the economy can be complexified and diversified only to the extent that Maroons and Settlers obtain control of land and other resources and are

able to create intermediate and final demand linkages among themselves and with the Urban Trades. To lubricate this process, the embryonic banking system (A71 - B711) must gain the power to create money and credit.[5]

FINAL INCOME DISPOSAL ACCOUNTS : RESIDENTS

Receipts		Expenditures	
HOUSEHOLDS (A71)			
T_{Arx}	Attorney Income in kind : "magazines" (B31)	C_x	Attorney Consumption of Goods and Services (B5121)
T_{Arr}	Attorney Income in kind : local produce and services (B31)	C_r	Settlers' and Artisans' Consumption (B5123)
A_r	Combined income of Settlers and mixed artisan income (B32)	$\mathcal{C}_r$	Subsistence Consumption of Maroons (B5124)
$\mathcal{A}_r$	Combined Subsistence Incomes of Maroons (B32)	I_r	Gross non-plantation Capital Formation (B5123)
		B_r	Inventory Change (B514)
			Transfer to Sou-Sou Box. (B711)
HINTERLAND GOVERNMENT (A72)			
M_{xsl}	Import and Export Duties (B221-22)	G	Government Expenditure on Law and Order (B511)
T_g	Fines, Property and Poll Taxes (B332)		

FINAL INCOME DISPOSAL ACCOUNTS : NON-RESIDENTS

Receipts		Expenditures	

OTHER HINTERLANDS OF EXPLOITATION (A741)

M_{xg2}	Hinterland Import of Specie (B212)	X_1	Hinterland Export of Staple (B5131)
M_{xg3}	Hinterland Import of Slaves (B42)	X_2	Hinterland Re-export of Slaves and Equipment (B5132)

PLANTERS' BANK ACCOUNT (A7421)

D_x	Depreciation (B34)	I_x	Gross Capital Formation of Plantation (B5122)
V_p	Venture Profit from Production (B351)	B_x	Inventory Change (B514)
	Loans from Merchant Bankers (B742)		Repayment of Loans to Merchant Bankers (B742)
			Transfers to Rest of World (B749)

(continued)

FINAL INCOME DISPOSAL ACCOUNTS : NON-RESIDENTS

(continued)

Receipts		Expenditures	

ACCOUNT OF MERCHANT BANKERS
(A7422)

T_{p2}	Mortgage Servicing (B331)	B_x	Inventory Change (514)
V_t	Venture Profit from Trade (B352)		Loans to Planters (B742)
	Repayment of Loans by Planters (B742)		Transfers to Rest of World (B749)

(continued)

FINAL INCOME DISPOSAL ACCOUNTS : NON-RESIDENTS

(continued)

Receipts		Expenditures	
	OTHER ACCOUNTS IN METROPOLIS (A7423)		
M_{xg1}	For Imports of "Magazines" (B211)	X_1	On the Staple (B5131)
M_{xg2}	For Imports of Specie (B212)		
M_{xs2}	"Cost" Margin on Exports and Imports (B231-32)		
T_{Qx}	Lords' and Company Proprietors' Rents (B32)		
T_{Ax}	Attorney Income (B31)		
Tpl	"Settlement" Encumbrances (B331)		
M_{xg4}	For Imports of Machinery and Equipment (B42)		
M_{xs2}	"Cost" Margins on Machinery and Slaves (B44)		Transfer to Rest of World (B749)

FINAL INCOME DISPOSAL ACCOUNTS : NON - RESIDENTS

(continued)

SETTLEMENT HINTERLANDS (NEW METROPOLES)

(A7424)

Receipts		Expenditures	
M_{xg1}	For Imports of "magazines" (B211)		
M_{xs2}	"Cost" Margins on Exports and Imports excl. slaves and equipment (B231-32)	X_1	On the Staple (B5131)
M_{xs2}	"Cost" Margin on Slaves (B44)		
V_{t2}	Venture Profit from Trade (B352)		Transfer to Rest of World (B749)

RIVAL METROPOLES

(A744)

M_{xg2}	Hinterland Import of Specie (B212)	X_1	On the Staple (B5131)

FINAL INCOME DISPOSAL ACCOUNTS : NON - RESIDENTS
(continued)

Receipts		Expenditures	
OTHER COUNTRIES (A7432)			
M_{xg3}	For Slaves (B42)		Transfer to Rest of World (B749)
METROPOLITAN GOVERNMENT (A744)			
M_{xsl}	Duties on Imports into and Exports from Metropolis minus bounties, drawbacks and grants to planters. (B221-22 & B43)		
T_{Cl}	Royalties minus grants for law and order (B32)		Transfer to Rest of World (B749)

Incalculability

The process of provisioning and disposal which is associated with Overseas Economy and total economic institutions introduces a large element of incalculability into business accounting. Almost the whole supply of intermediate and final goods is either produced within the plantation or advanced by the merchant house to which it is tied. Since the merchants also receive the bulk of the staple output for sale in the metropole or for re-export to rival metropolitan markets, the flow of commodities from stage to stage involves few money transactions. Accounting takes the form of imputing values and there is thus a large measure of price indeterminacy.[6]

A base price is set for imports in the market of origin and a ceiling price for exports in the final product market. But the value added on the producer value of imports along the way to the user and the cuts taken from the wholesale price of the staple are a matter of custom, bargaining and "political" negotiation.[7] We have, therefore, valued our imports ex factory or farm in the country of origin and our exports at metropolitan wholesale prices.

Accounts of Producing Sectors

The Accounts of the Producing Sectors are fully articulated below. It will be noted that Accounts are included for Maroons, Settlers, and Urban Trades. For this reason, the Accounting Framework is a highly realistic description of Pure Plantation Economy. But even this realistic description remains so simple that an Accounting Model of Pure Plantation Economy can clearly be seen to constitute a useful introduction to the family of Plantation Economies.

ACCOUNTS OF PRODUCING SECTORS

PROCURALS		DISPOSALS	
PLANTATION SECTOR :			
W_x "Ackee" Inputs:			
W_{x1}	Slave Subsistence	G	Government requisitions for law and order (T_g)
R	Small Settler Staple Output (R_1) Procurals from Urban Trades (R_2)	C_x	Attorney and Senior Staff consumption of local provisions of domestic and other consumer services, and of imported supplies.
M "Salt-fish" Inputs:			
M_{xg}	Imported Goods: Magazines (M_{xg1}) Specie (M_{xg2})	C_{rx}	Food, tools and species supplied to small settler and artisan households.
M_{xs}	Imported Services: Duties (M_{xs1}), and Merchants' "Cost" Margins (M_{xs2})		

.../continued

ACCOUNTS OF PRODUCING SECTORS - (cont'd)

PROCURALS		DISPOSALS	
F_x	"Value Added" - Factor Payments	I_x	Gross Capital formation including gross additions to slave stock and plant and the imputed value of construction, installation and land clearing by slaves. The import content of this is I_{xm} ; the domestic content, I_{xr} .
D_x	Depreciation		
T_A	Attorney Income and Income of Senior Staff.		
T_{Ax}	Cash deposited in metropolitan banks (Produce shipped on own a/c).	X	Exports of staple (X_1), re-exports of slaves (X_2), and re-exports of specie (X_3).
T_{Arx}	Payment in kind including: Consumption of "magazines"	B_x	Inventory Change
T_{Arr}	Consumption of local produce	M_{rx}	Materials supplied to Small Settlers, Freedmen (M_{rxl}) and Urban Tradesmen (M_{rx2}) including duty and merchants' "Cost" Margin and booty accruing to Maroons.
T_{Qx}	Royalties and Rents		
T_g	Fines, Poll Taxes and Other Property Taxes		

.../continued

ACCOUNTS OF PRODUCING SECTORS - (cont'd)

PROCURALS		DISPOSALS	
T_p	Encumbrances : Private Settlements (T_{p1}) and Mortgage Servicing (T_{p2})		
V_p	Venture Profit on Production including imputed value of slave services on capital formation (I_{xr} or V_{pr}), and of domestic services (W_2)		
V_t	Venture Profit on Trade		
E_x	Domestic Supply		
I_m	Final Imports of: Slaves (M_{xc3}) and Machinery and Equipment (M_{xc4})		
M_{xs}	Duties and Margins on I_m		
$E_x + I_m + M_{xs}$	Total Plantation Supply	O_x	Total Plantation Demand

.../continued

ACCOUNTS OF PRODUCING SECTORS - (cont'd)

PROCURALS		DISPOSALS	
SMALL SETTLERS AND FREEDMEN:			
W_{rl}	Own Account Raw Materials	C_{rr}	Subsistence consumption of food and other self-produced supplies and services.
M_{rxl}	Tools, supplies and specie from plantations (including duty and merchants' "Cost" Margin.	I_{rl}	Capital formation including construction and clearing.
D_{rl}	Depreciation	B_{rl}	Inventory Change
T_{Qr}	Lords', Proprietors' and Company Rents	R_l	Staple sold to Plantations.
A_{rl}	Mixed Income of Leaseholder/ Cultivator: Wages, Rent, Profit.		
E_{rl}	Total Expenses of Settler Cultivation (Supply)	O_{rl}	Total Accruals from Settler Operations (Uses)

.../continued

ACCOUNTS OF PRODUCING SECTORS - (cont'd)

PROCURALS		DISPOSALS	
MAROONS :			
A_r	Combined Subsistence Income	C_r	Subsistence Consumption
M_{rx}	Booty from Plantation Stores		
E_r	Total Maroon Supply	O_r	Total Maroon Demand
URBAN TRADES :			
W_{r2}	Own Account Materials	C_{rr2}	Subsistence Consumption
M_{rx2}	Tools, supplies and specie from plantations (including duty and margin)	I_{r2}	Own-Account Capital Formation.
D_{r2}	Depreciation	B_{r2}	Inventory Change
A_{r2}	Mixed Artisan Income	R_2	Goods and services sold to plantation.
E_{r2}	Total Expenses of Urban Trades	O_{r2}	Total Accruals from Urban Trades.

APPENDIX

LIST OF ROWS & COLUMNS

A. ROWS

[1.] Producing Sectors

[11.] Export Sectors

[111.] Plantation A

.1 Sugar Cane Growing

.2 Sugar Grinding

.4 Rum

.5 Food Gardening

.9 Own Account Services

.91 Construction

.92 Distribution

.99 Services

.../continued

APPENDIX
(cont'd)

A. ROWS - cont'd

[111.] Plantation N

.1 Sugar Cane Growing

.2 Sugar Grinding

.4 Rum

.5 Food Gardening

.9 Own Account Services

.91 Construction

.92 Distribution

.99 Services

[12.] Residentiary Sectors

121.1 Small Settlers and Freedmen

.11 Domestic Agriculture

.12 Staple Agriculture

.19 Own Account Services including Construction

121.2 Maroons

122. Urban Tradesmen

.../continued

APPENDIX
(cont'd)

[3.] Persons Engaged

[4.] Capital Stock

41. Slaves (work-units)
($)
(work-hours)

42. Other Stock

43. Land Improvements and Crops

44. Buildings and Equipment

[7.] Final Income Disposal Accounts

71. Households

72. Hinterland Government

741. Other Hinterlands Of Exploitation

7421. Planters' Bank Accounts in Metropole

7422. Merchant Bankers' Account in Metropole

7423. Other Accounts in the Metropole

7424. Hinterlands of Settlement (New Metropoles)

7431. Rival Metropoles

7432. Other Countries

744. Metropolitan Government

.../continued

APPENDIX
(cont'd)

B. COLUMNS

[1.] "Ackee" Component of Expenditure

[11.] On Plantation Outputs

111.1 Sugar Cane

111.2 Muscovado and Molasses

111.4 Rum

111.5 Ground Provisions

111.91 Construction

111.92 Distribution

111.99 Services

111.1 Sugar Cane

111.2 Muscovado and Molasses

111.4 Rum

111.5 Ground Provisions

111.91 Construction

111.92 Distribution

111.99 Services

.../continued

APPENDIX
(cont'd)

B. COLUMNS - Cont'd.

[12.] On Residentiary Output

121.11-12 Settlers' Goods

121.19 Settlers' Services

121.2 Maroon Goods and Services

122. Urban Trades

2. "Salt-fish" Component of Expenditure (net of merchants' venture profit.)

[21.] Commodity Imports (ex-farm or workshop in Metropolis)

211. "Magazines" (Food, Clothing, Stores, Supplies)

[22.] Duties (-) and Drawbacks, Bounties, etc. (+)

221. On Imports

222. On Exports

[23.] Other Service Imports ("Cost" Margins)

231. On Imports

232. On Exports

.../continued

APPENDIX
(cont'd)

B. COLUMNS - Cont'd

[30.]	Value Added
31.	Attorney & Senior Staff Income
32.	Mixed Property Income (Royalties, Rents, Mixed Income)
331	Encumbrances
332	Other Taxes
34.	Depreciation
351	Venture Profit on Production
352	Venture Profit on Trade
[40.]	Domestic Supply (Cost of Cultivation)
42.	Final Imports (ex factory)
43.	Duties
44.	Margins
[49.]	Total Supply

.../continued

APPENDIX
(cont'd)

B. COLUMNS - Cont'd.

[50.] Total Demand (Total Accruals on Hinterland Operations)

511 Law and Order (Government)

5121 Plantation Consumption

5122 Plantation Investment

5123 Settlers and Urban Trades

5124 Maroons

5131 Exports of Staple (at metropolitan wholesale prices)

5132 Re-exports of Slaves & Equipment

514 Inventory Change

[51.] Final Demand

[52.] Intermediate Demand

7. Transfer Columns

711 Sou-Sou

742 Planters' Bank A/C

749 Rest of the World

FOOTNOTES

1. An earlier version of this essay has been published in Social and Economic Studies, September, 1968. See "Outlines of a Model of Pure Plantation Economy", pp 301-316.

2. See below, "An Ideal-Type Accounting Framework for Plantation Economy Further Modified."

3. For a monumental attempt to trace out significant linkages between the West Indian slave economy and the British Overseas Economy without the aid of a systematic quantitative framework, see Eric Williams, Captialism and Slavery, Chapters 3 and 5.

4. In the Chart, illicit transactions or transactions frowned on by the rules of the game are shaded over. However, Cell B122 x A111.2 has been shaded over in error. It should contain a minus (-) sign in both places where it occurs (Plantation A & Plantation N).

5. For a discussion of Pure Plantation Economy with a limited but real capacity for diversification, see Celso Furtado, Economic Growth of Brazil, University of California Press, 1963, Chapters 10 and 11, and especially pp. 68 - 70. The availability of land to the "residentiary" sector of the sugar-plantation economy of the North-East and the character of the main product (cattle) both permitted transformation. However, the restrictive nature of the monetary system (metropolitan exchange standard) inhibited it.

.../continued

FOOTNOTES
(cont'd)

6. The problem of pricing and intra-company transfers in the contemporary world is discussed in Dudley Seers, "Big Companies and Small Countries", Kyklos, Vol.XVI, 1963, p.599.

7. For factors influencing market conditions for imports and exports, see Seers, "Comparative Rates of Growth in the World Economy", Economic Journal, LXXII, March 1962.

A MODEL OF PURE PLANTATION ECONOMY

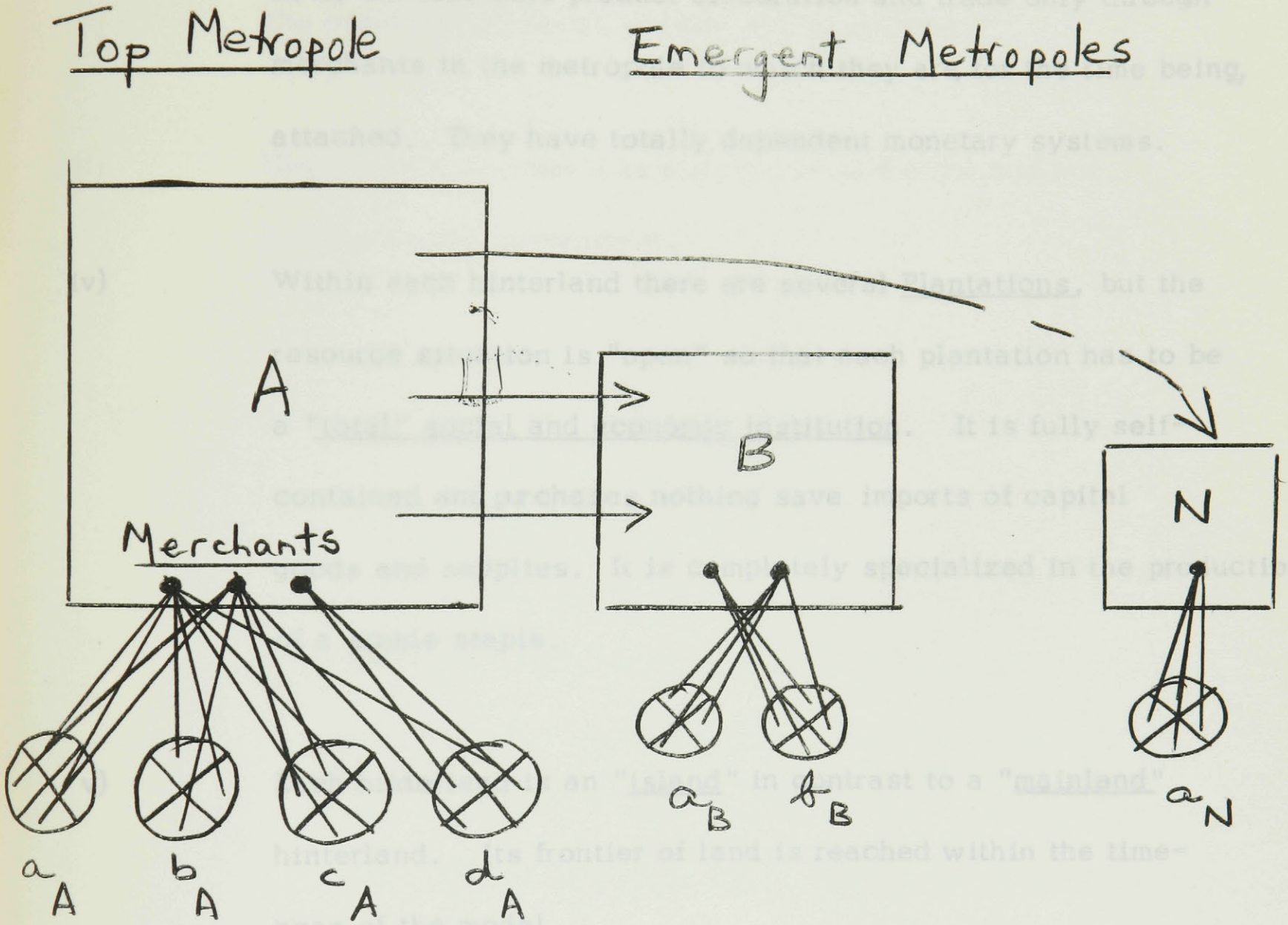
1. BASIC ASSUMPTIONS

i) There are several metropoles rivalling one another in war and trade. Each controls an Overseas Economy. The Top Metropole (A) is tied by rules of Inter-Caetera to a number of Hinterlands (a_A, b_B, ... n_A) (Figure 1). Several Emergent Metropoles (B, ... N) are each similarly tied to other Hinterlands (a_B, b_B, ... n_B) and (a_N, b_N, ... n_N). Hinterlands switch their affinity from time to time. As new Overseas Economies emerge, world supply grows faster than world demand.

ii) There is a re-export trade between Metropoles but initially, only the Top Metropole has the supply to be able to take advantage of this opportunity. Effectively Hinterlands A enjoy a monopoly of its own metropolitan market. While there is perfect competition in the rest of the world market, here too, the exporters from the Top Metropole have a supply advantage. There is, of course, perfect competition between producers within the Top Overseas Economy.

iii) The rules of the game are defined by the Muscovado Bias, the Navigation Provision, and the Metropolitan Exchange Standard.

FIGURE 1


Top Metropole
Emergent Metropoles
A
B
N
Merchants
a_A
b_A
c_A
d_A
a_B
b_B
a_N

These are obligatory. In other words, the hinterlands engage in no considerable product elaboration and trade only through merchants in the metropole to which they are, for the time being, attached. They have totally dependent monetary systems.

iv) Within each hinterland there are several Plantations, but the resource situation is "open" so that each plantation has to be a "total" social and economic institution. It is fully self-contained and purchases nothing save imports of capital goods and supplies. It is completely specialized in the production of a single staple.

v) Each hinterland is an "island" in contrast to a "mainland" hinterland. Its frontier of land is reached within the time-span of the model.

vi) There are six key economic roles. Lords Proprietors enjoy patronage over land; Merchant-Bankers provide financial capital; and Planters organise production. All these live in the metropole. Attorneys (and their "Senior Staff") manage the plantations from day to day. Slaves are the asset in which is stored slave-power, the capital good which is specific to

the staple. Maroons are runaway slaves who constitute the residentiary sector outside the plantation.

vii) Hinterland Government is simply law and order and not developmental government.

2. NOTATION

Variables (Physical)

Stocks

N* The stock of slaves on a plantation measured in Indian Pieces.

N' The stock of embodied or stored-up slave power on a plantation measured in work units. This is to be carefully distinguished from the flow of expended slave-time in an accounting period. For example, when expended slave-time is raised by x hours, the reduction in slave power has to be calculated in terms of some rate (θ) at which the latter diminishes as the former increases.

L* The amount of unimproved land on a plantation measured in lots.

K^* The stock of improvements on plantation property measured in physical units. It includes all plant, buildings, installations and other infra-structure such as drains, roads and land preparations.

Flows

W^* Residentiary output produced on plantations (for use on plantations) measured in physical units. It includes "ackee" (W^*1), and domestic services (W^*2).

T^*_g Administrative and military services for government.

ΔK^* Residentiary output of improvements.

R^* Total residentiary output (domestic plantation input)

X^* Output of the staple in hogsheads.

O^* Total output measured in physical units ($R^* + X^*$)

T^* Hogsheads of the staple surrendered by the planters as metropolitan pre-emptive claims on profit.

M^* Imports of "salt-fish" measured in magazines.

N* Imports of slaves measured in Indian Pieces. We ignore imports of other capital goods.

D* Depreciation of slave-power in an accounting period. We ignore depreciation on plant, buildings and infra-structure.

Variables (Value Flows)

W — The value of residentiary consumer goods and service (W*) output at its opportunity cost in terms of staple output foregone.

T_g — The value of government services (T^*_g) in terms of staple output foregone.

M — The value of "salt-fish" imports in terms of staple surrendered.

D — The value of depreciation at replacement cost in terms of staple surrendered.

T — Value, in terms of the staple, of metropolitan claims on profit (T*).

V — Venture Profit net of Depreciation and after Tax. This is a money surplus of staple earnings in metropolitan exchange. The share going to Merchants is V_t (Venture Profit on Trade). The share going to Planters is V_p (Venture Profit on Production) of which the "distributed" share is $V_x + W_2$, the "reinvested" share V_{pr} (income) or ΔK (output).

O — Total Accruals on plantation account, i.e. "Gross Revenue".

X Exports of the staple at metropolitan wholesale prices.

M' Imports of slaves measured in terms of staple surrendered.

3. METHODOLOGY

The discussion of the expansion and decline of Pure Plantation Economy will be conducted with the aid of the Marshallian distinctions between the long and the short run and between the industry and the firm. Moreover, we shall distinguish between stages of maturity for both the firm and the industry.

The Long-Run

In the long-run, the focus of attention is on the conditions of industry equilibrium. The industry is defined to embrace a successively greater number of units of production (plantations). By elaboration of assumption (i), staple production expands in a single hinterland, extends into other hinterlands attached to the same metropole and then crosses beyond the mercantile frontiers of that Overseas Economy into hinterlands attached to other metropoles. Thus, the industry may be identified at the level of a single hinterland, at the level of an Overseas Economy or at the level of the world as a whole.

Maturity

At any point in time, this process of expansion is reflected in the existence of units of production at different levels of maturity. The phenomenon of maturity derives from Assumptions (i), (iii), and (v). In general, the new hinterlands and new Overseas Economies (though not within established hinterlands) emerge on virgin land and with superior techniques. However, in established hinterlands, the Muscovado Bias prevents product innovation and the "total institution" inhibits technical progress.[1] Moreover, because the hinterlands are "islands" and not "mainlands", there exists a land frontier which bars continuing engrossment of virgin land. Hence, there comes a point where differences in the physical productivity of slaves place pioneer hinterlands at a disadvantage vis-a-vis new ones.

Accordingly, a single hinterland is mature when on account of decreasing returns, unit costs of its most efficient producers are rising faster than in other hinterlands in the same Overseas

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1. We here adopt the Kaldor position that the capital in a new operation embodies new technology. But for us, this is a once-for-all effect at the time of establishment of each new hinterland.

Economy.[2] In the case of an entire Overseas Economy, maturity arrives when unit costs in its least mature hinterland are higher than in rival Overseas Economies. In contrast, it can be seen that for the world industry as a whole, maturity has to be defined in terms of a comparison with the real unit costs of producers of substitutes for the staple. If, in this connection, we assume a given pattern of taste, the substitute will be a commodity of the same kind as the staple. If, on the other hand, we postulate changing patterns of tastes, we have the phenomenon of low income-elasticity of demand for the staple and for its substitutes.

Four Phases

For convenience of exposition, we have postulated four phases in the maturation of the industry in Overseas Economy A, comprising the Top Metropole and Hinterlands A. In the Foundation Period there

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2. We have postulated that hinterlands on-the-make generally have better land and superior technology. Since physical returns everywhere decrease, when they do, at a rising rate, mature hinterlands will, in general, have unit costs which are both higher and rising faster. If we, here, differentiate by the rate and not the level of unit costs, it is to allow for differences in management and for the exceptional Hinterland which emerges on inferior land.

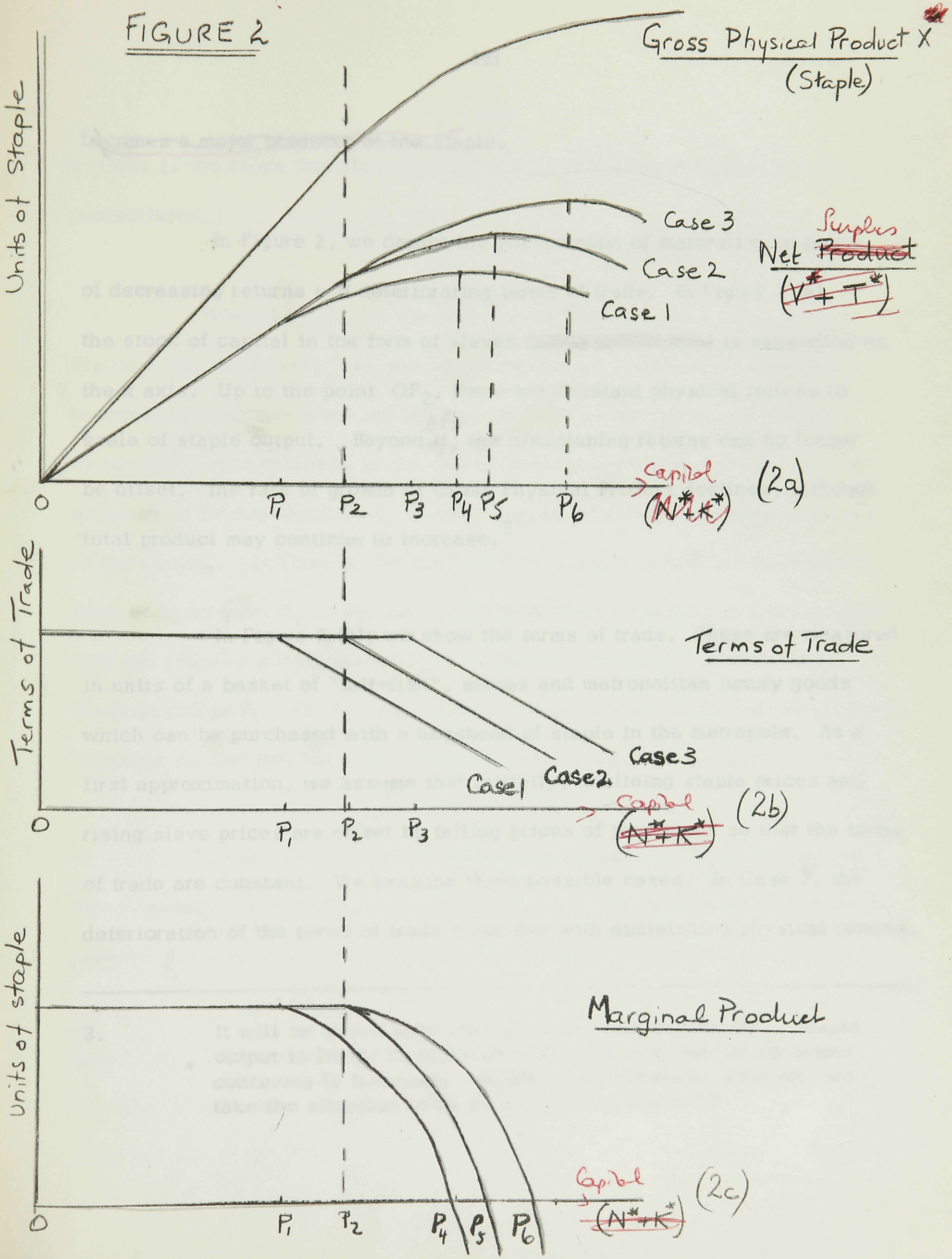
are increasing physical returns to scale. Planters experiment and improve modes of gang organisation and methods of culitvation. They discover optimal cropping cycles and task norms. Then routines become established and this initiates (though it does not sustain) an age of constant returns. The stock of slaves is expanded and planters offset decreasing returns by engrossment and improvement of plantations. They enjoy a Golden Age. When the external frontier of land has been reached and decreasing returns cannot be offset, Pure Plantation Economy in Overseas Economy A reaches its phase of Gall and Wormwood. In spite of a rising rate of improvement, ultimately unit costs on account of physical productivity rise so high that the best option for planters is to mine their assets and quit the business. This is the Liquidation Period.

We have differentiated between the four phases in terms of diminishing physical productivity of slaves. The new conditions to which the industry in Overseas Economy A must adjust on this account, are further altered by deteriorating terms of trade. As the industry expands and new suppliers enter with superior technology and better land, total supply rises at a faster rate than total demand in accordance with Assumption (i). In the competitive market, product prices fall.

Moreover, supply prices rise for the capital good for which the industry is a price-maker. Prices also rise "autonomously" for intermediate supplies for which the industry is a price-taker. The cause is the disturbance of supply lines due to war and rivalry between metropoles over the more profitable new hinterlands. Thus, the price rise is autonomous only in terms of the traditional parameters of economics.

Falling profit rates in established hinterlands make investment in new and more fertile ~~hinterlands more and~~ ones ever more attractive. ~~Gradually~~ Merchant capital moves in to exploit these opportunities, prices fall steadily ~~further~~ and the terms of trade deteriorate progressively. ~~As such~~, the boundary between the Golden Age and Gall and Wormwood is not a single point in the expansion process but a range. However, this range ~~covers only a~~ is traversed short time-span. This is because ~~there exists~~ precisely a relationship between diminished productivity in "saturated" hinterlands, investment and expansion in hinterlands "on the make", and adverse movements in product and supply prices. ~~Thus, to assume, as we shall,~~ The assumption that diminished physical productivity and a sudden deterioration of the terms of trade occur at approximately the same time and together mark the end of the Golden Age ~~in Overseas Economy A, is no more than~~ is both a convenient and a justifiable dramatisation of the change ~~in conditions to be faced by plantations~~ from one phase in this stable cycle to another. The ~~assumption implies that at least one emergent metropolitan system suddenly~~

FIGURE 2


Gross Physical Product X
(Staple)
Units of Staple
Case 3
Case 2
Case 1
Surplus
Net Product
(V* + T*)
0
P1
P2
P3
P4
P5
P6
Capital
(N* + K*)
(2a)
Terms of Trade
Terms of Trade
Case 3
Case 2
Case 1
0
P1
P2
P3
Capital
(N* + K*)
(2b)
Units of staple
Marginal Product
0
P1
P2
P4
P5
P6
Capital
(N* + K*)
(2c)

becomes a major producer of the staple.

In Figure 2, we depict the phenomenon of maturation in terms of decreasing returns and deteriorating terms of trade. In Figure 2 (a), the stock of capital in the form of slaves and improved land is expanding on the x axis. Up to the point OP_2, there are constant physical returns to scale of staple output. Beyond it, the diminishing returns can no longer be offset. The rate of growth of Gross Physical Product declines, although total product may continue to increase.[3]

In Figure 2 (b), we show the terms of trade. These are measured in units of a basket of "salt-fish", slaves and metropolitan luxury goods which can be purchased with a hogshead of staple in the metropole. As a first approximation, we assume that initially, declining staple prices and rising slave prices are offset by falling prices of provisions so that the terms of trade are constant. We examine three possible cases. In Case 2, the deterioration of the terms of trade coincides with diminishing physical returns.

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3. It will be shown later that at some scale beyond OP_2, staple output is likely to diminish, although total plantation output continues to increase. At first approximation, however, we take the situation to be as depicted in Figure 7.

In Case 1, the break precedes and in Case 3, it follows the point of reduced productivity.

When we combine the two effects and transpose the data from Figure 2 (b) to Figure 2 (a), we derive curves for Net Product, assuming temporarily that real costs are constant in their composition and invariant to scale.[4] The increase in the gap between gross and net product is here assumed to be due exclusively to the rising cost of imported inputs in terms of the staple. In Case 2, the combination yields a scalar increase in Net Product up to point P_2. Beyond that, Net Product increases at a diminishing rate and reaches a maximum at P_5. In Cases 1 and 3, the terms of trade break at points P_1 and P_3 respectively and maximum Net Product is attained at points earlier (P_4) and later (P_6) in the process of expansion.

In Figure 2 (c) is shown marginal product corresponding to the three cases. The marginal product referred to is the increase in Net Product per unit increase in input of capital. It can be seen that there is a steep

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4. The tendency for real unit costs to rise will only magnify the difference between Gross Physical Product and and Net Product.

decline as adverse terms of trade reinforce decreasing physical returns. Where Net Product reaches an absolute maximum, marginal product is zero.

The Short-Run

In the short-run the focus of attention is exclusively on the single firm.

To each plantation under competitive conditions in the metropolitan markets, changes in price are exogenously given. The area of improved land and the stock of capital in the form of slaves are fixed. Fixed costs, in the sense of costs which must be met to preserve the capital invested in the plantation (even if no output were to be produced) are very high. In the short-run, the only variable is the rate of utilization of this capacity. As in all situations where factor supply is fixed, resource allocation decisions come to the fore.

We consider the behaviour of units of production operating within the constraints set by different degrees of maturity. Adjustment to a change in price is effected by variation in the rate of utilization of slave-time and by re-allocation of resources between production of the staple for

export and production of residentiary output for domestic intermediate and final use.

The link between the short and long-run is provided by the investment policy of the plantations. The degree to which they utilize slave-time and the manner in which they allocate their resources depend on their profit expectations. So, of course, do their decisions regarding expansion or contraction of the capital stock.

These expectations in turn reflect the state of the trade. General expectations are a function of the degree of maturity of the industry. Particular expectations are related to temporary fluctuations and the special circumstances of individual planters. Expectations are transmitted to the single plantation in terms of realised and expected profits. Expected profits govern planters' willingness to expand or contract operations. Realised profits determine liquidity and credit-worthiness and with that, both the ability to invest and the feasibility of disinvestment. Actual investment or disinvestment determines the expansion path of the industry and sets fresh expectations in terms of expected physical productivity, and probable prices in markets for the staple, for provisions, for capital goods and for finance.

4. THE PRODUCTION FUNCTION

We postulate a general and simple production function which defines output in physical units as a function of slave-time currently utilized. The plantation actually also uses a number of complementary inputs which must collaborate with slaves to make production possible. It engrosses land (L*) to which the slaves add improvements and further improvements (ΔK^*) in the form of clearing, preparations, mills, buildings, and installations, and general infra-structure. It also employs management (Attorneys and Senior Staff) to drive and direct the gangs and to impose the required routines of work and regimes of feeding. As a first approximation, all of these factor inputs (except land) can be taken as varying systematically with the size of the slave stock. This input mix of co-operating factors of production is "classical" or "Ricardian" in the sense that there is no meaningful substitution of slaves for improvements of all forms. There is an allocation problem relating to slave-time used for improvements and slave-time used in direct production. But because all work is performed by slaves and the gestation period is short, there is only one factor input. When the supply of land becomes fixed at the beginning of Gall and Wormwood, the application of improvements is restricted to old land yielding progressively

diminishing returns to capital.

In general, we may write a production function :

$$O^* = F(N^*, \mu)$$

Such that

$$\frac{dO}{dN^*} > O \qquad \text{and} \qquad \frac{d^2O}{dN^{*2}} \leq O$$

and

$$\frac{dO}{d\mu} \quad O \qquad \text{and} \qquad \frac{d^2O}{d\mu^2} = d \text{ for } O < \mu < \bar{\mu}$$

and $\quad < \quad d \text{ for } \bar{\mu} < \mu < 1$

Because the stock of improvements is assumed to vary with the stock of slaves, we may make output a function of the stock of slaves and the rate of utilization.

Long-Run Production Function

In the long-run, we may assume μ to be constant and we can write : $O^* = A.N^{*\alpha}$.

where α is the elasticity of output with respect to the input of slaves and

A is a term embodying residual and random factors such as weather, climate, intrinsic fertility of unimprived land and the quality of management.

Where α is unity, there are constant returns to scale as in the Golden Age. Where α is more than 1, there are increasing returns as in the Foundation Period; where less than 1, there are diminishing returns as in Gall and Wormwood. In Figure 3, we depict the long-run production function in these three phases.

Case I represents a plantation in which physical returns are at all times higher than those of the plantation depicted by Case II. In the former case, either land is more fertile, climate more favourable or management superior. The figure may also be taken as showing the different position of the industry in two hinterlands or two Overseas Economies. In this instance, Case I describes an economy which is either better endowed with land or employs more efficient techniques. It illustrates the case of the latecomer who, because of the fragmentation of the world and the constant switching of hinterlands from one metropolitan affiliation to another, is able to enter the industry on the external margin with initial conditions which are superior to those on the internal margin.

Short-Run Production Function

In the short-run, the stock of capital is fixed and the production function becomes :

$$O^* = N^* . A' . \mu^{\beta}$$

The function is subject to the conditions cited above. This means that there is diminishing marginal productivity as the rate of utilization of slave-time (μ) is raised in the short-run with the stock of improvements fixed, where μ measures the rate at which slave-time is extracted from slaves and applied to plantation work.

At this point, we may define μ more exactly.

$$\mu = \frac{h}{h_{max}}$$

h being the actual number of units of work-time applied to the plantation by a slave in an accounting period and,

h_{max} being the maximum possible units of work-time which can be performed by a slave in the same accounting period.

5. THE COST ITEMS

The expenses of cultivation on plantation account fall into three categories: residentiary inptus, imported inputs and capital consumption.

Residentiary Inputs

First, we distinguish charges (per Indian Piece) on account of goods and services which are produced and consumed on the plantation itself. These comprise the "ackee" rations (w_1), domestic services (w_2), the residentiary "expense-account" item on behalf of "senior staff (t_{Arr}), government requisitions of civil and military services (t_g), and the cost of improving land (Δk). To the planter these are conceptually similar. In fact, w_1 and t_{Arr} are inseparable and incalculable as distinct items and in future will be lumped together under the former. They all involve a diversion of resources away from the direct production of the staple. However, the services (w_2 and t_g) require slave-power but no land. Since the industry is marked by a high degree of seasonality in regard to the use of slave-time (though not to the use of land), these forms of output can be expanded in off-seasons at no cost at all. The same holds for the

output of improvements which are initially applied to unimproved land only.

In pricing these outputs and inputs[5] we take into account the fact that in less mature phases seasonality reduces the opportunity cost of some of them to zero in off-seasons. We derive a value flow of total residentiary outputs by expressing them in terms of staple output foregone[6] and multiplying by the number of Indian Pieces. Thus we have:

Residentiary Output, $O_r = w_1 + w_2 + t_g + K$

Imported Inputs

Next we identify goods and services which are required for use in current production but which have to be procured from merchants and, therefore, involve the planters in expenditures in metropolitan exchange (or in the surrender of staple output). These are the "salt-fish" rations (m) and the imported "expense-account" item of "Senior Staff" (t_{Arr}).

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5. Outputs from residentiary agriculture and services which are similtaneously inputs to the staple.

6. See Furtado's suggestion that residentiary inputs be netted out per slave to leave a residual of "net slave power" for production of the staple. Economic Growth of Brazil, p.53 ff.

The two are again, incalculable as separate items and may be lumped together under the former. The "basket" clearly has an exchange value in terms of physical units of the export staple surrendered at ruling prices. Pricing accordingly and aggregating, we derive a value flow of "magazines" imported, M.

Further, the plantations incur encumbrances of various kinds which assume the character of pre-emptive charges or costs. These are the annuities which planters "settle" on relatives and friends in the metropole (t_{pl}), including such expenditures on their own consumption in the metropole which they are not prepared to give up under any circumstances, the servicing of mortgages which they contract (t_{p2}), Rents and Royalties which they must pay to lords proprietors who have patronage over unimproved land (t_Q) and Repatriated Attorney Income which Senior Staff are able to secure for themselves (t_{Ax}).

Like current imports (m), all these items have an exchange value in terms of the amount of the staple required to purchase a basket of metropolitan currency and luxury goods, of hinterland trade goods and merchant investment goods. The weights in the basket are given by what shares accrue to Other Metropolitan Accounts as against Merchant-Banker

(and interloper) Accounts. Thus, we again derive a value flow (T) in terms of staple surrendered.

Capital Consumption

Finally, there are the charges on account of capital consumption. Unlike the previous cost items, these are book charges which can be deferred. Nevertheless, since slaves have to be purchased from Other Countries through metropolitan merchants, they constitute expenditures on external account.

To measure physical capital consumption, we postulate that at any point in time, the stock of slaves consists of a spectrum. At one extreme there are old slaves just reaching the end of their working life. At the other, there are new slaves embodying $\bar{n}$ units of slave-power to be expended on plantation tasks, $\bar{n}$ being the number of units of slave-power stored-up in the average slave at the moment of purchase.

Let us assume further that the slave will be fed at least a customary (or statutory) ration $\overline{w + m}$ and will be worked at an intensity $\bar{i}$ which, at the stipulated ration, will not subject him to any faster wearing-out than

is experienced by a freeman. On this as sumption, the average number of units of slave-power stored-up in the slave will be $\frac{n}{2}$. [7]

Capital consumption per slave is thus the reduction in the stock of embodied slave-power $\Delta\left(\frac{\bar{n}}{2}\right)$. It is made up of two components. The first is the real depreciation in the stock of embodied slave-power which is attributable to normal demographic factors affecting a free man. By this is meant depreciation due to mortality and sickness net of births. Since the slaves are not free, we must also add depreciation due to spontaneous runaway which is not related to the regime of overwork or underfeeding and is tantamount to migration among free men. For these types of depreciation we write $\Delta\left(\frac{\bar{n}}{2}\right)_1$.

For the second component of real depreciation we write $\Delta\left(\frac{\bar{n}}{2}\right)_2$.

---

7. Strictly speaking, this is true only if (i) there has never been any net investment or disinvestment in the stock of slaves so that initial capital has always been maintained intact in the past, and (ii) if there have been no fluctuations in the intensity of work from crop period to crop period so that slave-power on both counts has been used up at a constant rate.

This is due to increases in the intensity of work beyond ordinary, $\Delta\left(\frac{\bar{n}}{2}\right)_{21}$ to the reduction of the ration below the stipulated level, $\Delta\left(\frac{\bar{n}}{2}\right)_{22}$ and to the runaway[8] induced by overwork and underfeeding. We, thus, have for depreciation :

$$d = \Delta\left(\frac{\bar{n}}{2}\right) = \Delta\left(\frac{\bar{n}}{2}\right)_1 + \Delta\left(\frac{\bar{n}}{2}\right)_{21} + \Delta\left(\frac{\bar{n}}{2}\right)_{22}$$

These decremental changes in the stock of embodied slave-power are also susceptible of conversion into a cost in terms of staple surrendered. For this purpose, capital is here valued at its replacement cost per unit. What the planters actually buy is stored-up slave-power in bulk. He purchases "niggers". The price he pays for any particular one varies with his estimate of the slave-power embodied in the work-unit concerned. His estimate is arrived at in relation to the standard number of units believed to be embodied in an Indian Piece (of a given age, measurements and general physical condition.)

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8. This can be pro-rated and added to each of the first two. Those need to be kept apart since each is subject to separate policy decision by planters.

The supply price is given to him by the market according to the conditions of the trade. To whatever span of the slave's life his view extends and insofar as returns are calculable, his demand price reflects his expectations concerning the net return to be made from the utilization of the power embodied in the work-unit. In other words, the demand price is the sum of the expected contributions to Venture Profit discounted at the high rates prevailing in a business characterised by a short profit horizon. At any rate, Indian Pieces are convertible into slave-power and are capable of being priced in terms of staple surrendered. Pricing and aggregating, we have :

$$\text{Depreciation} \quad D = D_1 + D_{21} + D_{22}$$

All costs are now additive and susceptible of expression in terms of staple output surrendered. For total costs (E), we write :

$$E = (W_1 + W_2 + T_g + \Delta K) + (M + T) + (D_1 + D_{21} + D_{22})$$

Each of these costs behaves in its own way, as we shall see from our analysis of the mechanisms of adjustment.

FIGURE 3

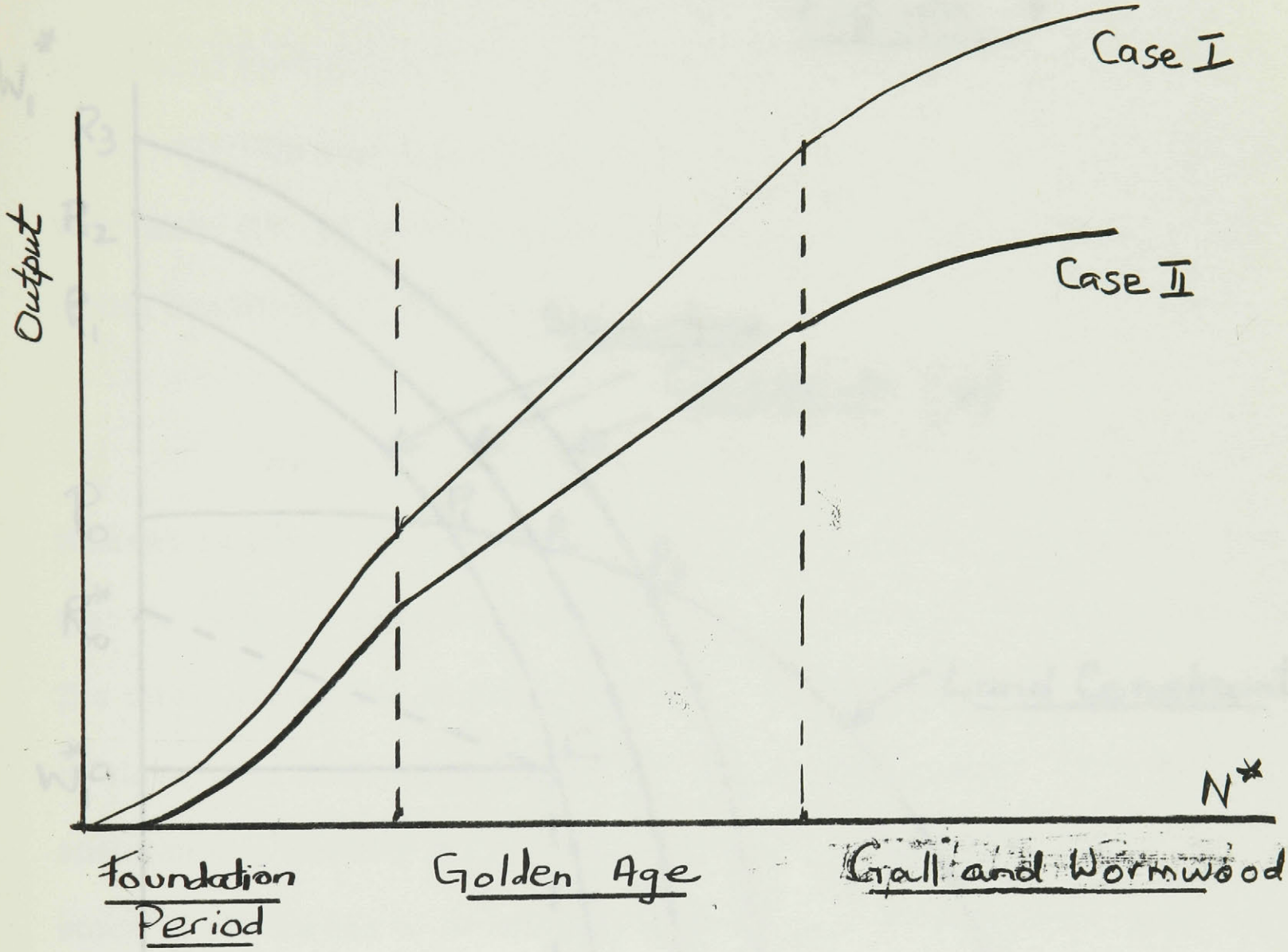
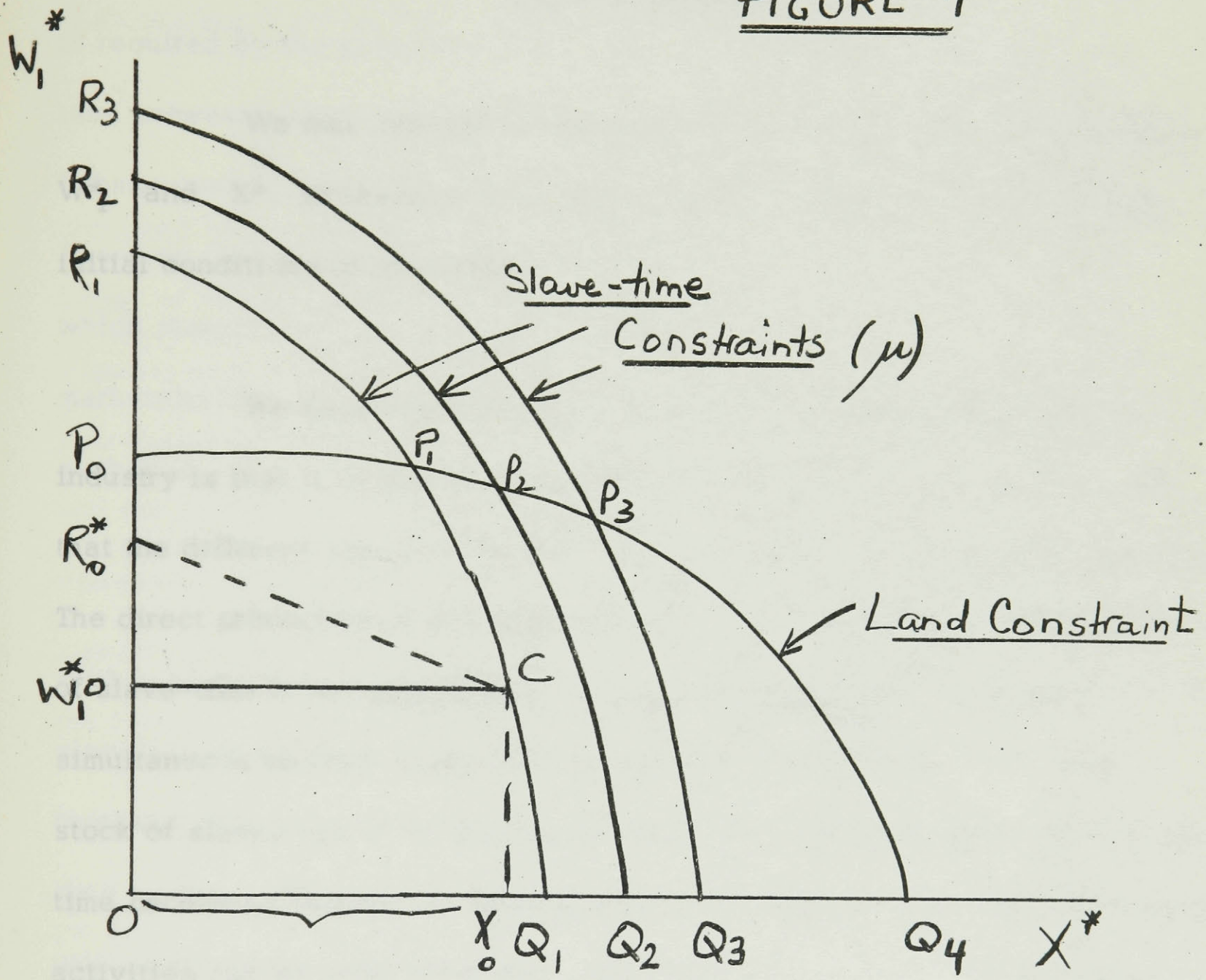

Case I
Case II
Output
N*
Foundation Period
Golden Age
Grail and Wormwood

FIGURE 4



$$R_0^* = W_1^{*0} + [T_g^* + W_2^* + \Delta K^*]$$

6. SHORT-RUN ADJUSTMENT

Resource Allocation

We now explore the mechanisms of resource allocation between W^*_1 and X^* in response to changing terms of trade and given different initial conditions of production.

We have noted that one of the distinguishing features of the industry is that it is marked by an exceptional degree of seasonality; and that the different seasons entail different allocations of productive resources. The direct production of the staple requires a far higher level of uitlization of slave-time in the High Season than in the Dead Season. There is simultaneous activity in harvesting, milling and replanting. Since the stock of slaves has to be adjusted to this time of peak demand, spare slave-time becomes available in other seasons. This means that in the off-seasons, activities can be undertaken at no additional cost so long as they require only unimproved land or no land at all. In Fugure 4, we, therefore, include in residentiary output items ΔK^*, T^*_g, and W^*_2 representing improvements to land, as well as administrative, military, and domestic services.

Figure 4 relates to a crop period. The stock of slaves is fixed. The area of improved land is fixed. Combinations of outputs of W^*, and X^*

are limited by the land constraint P_0Q_4. The shape of the curve takes into account the existence of a maximum amount of "ackee" (W^*_1) which is required by the planters. Thus, there is only limited substitutability of land between use in cultivation of provisions and use for staple production. Substitution is operative with respect to only a portion of total improved lands. However low the price of the staple, there is a limited amount of land which planters will devote to the production of output with no external marketability. The reason for being of the enterprise is to earn metropolitan exchange.

The land constraint permits production within the area $OP_O Q_4$. With a given stock of slaves, the constraints on output set by the available slave-power are depicted by the curves RQ. R_1Q_1, R_2Q_2, and R_3Q_3 represent the constraints corresponding to levels of utilization of slave-time $\bar{\mu}$, μ_0 and 1, where $\bar{\mu} < \mu_0 < 1$, and where these are utilization rates during the High Season.

The existence of the upper limit to W^*_1 implies that the segments RP of the slave-power boundary are never operational. Production possibilities are restricted to combinations PQ. Along this range, it appears that there is surplus improved land. However, this fallow can only

be used for purposes which do not establish claims on slave-power in the High Season or otherwise jeopardise the production of the staple.

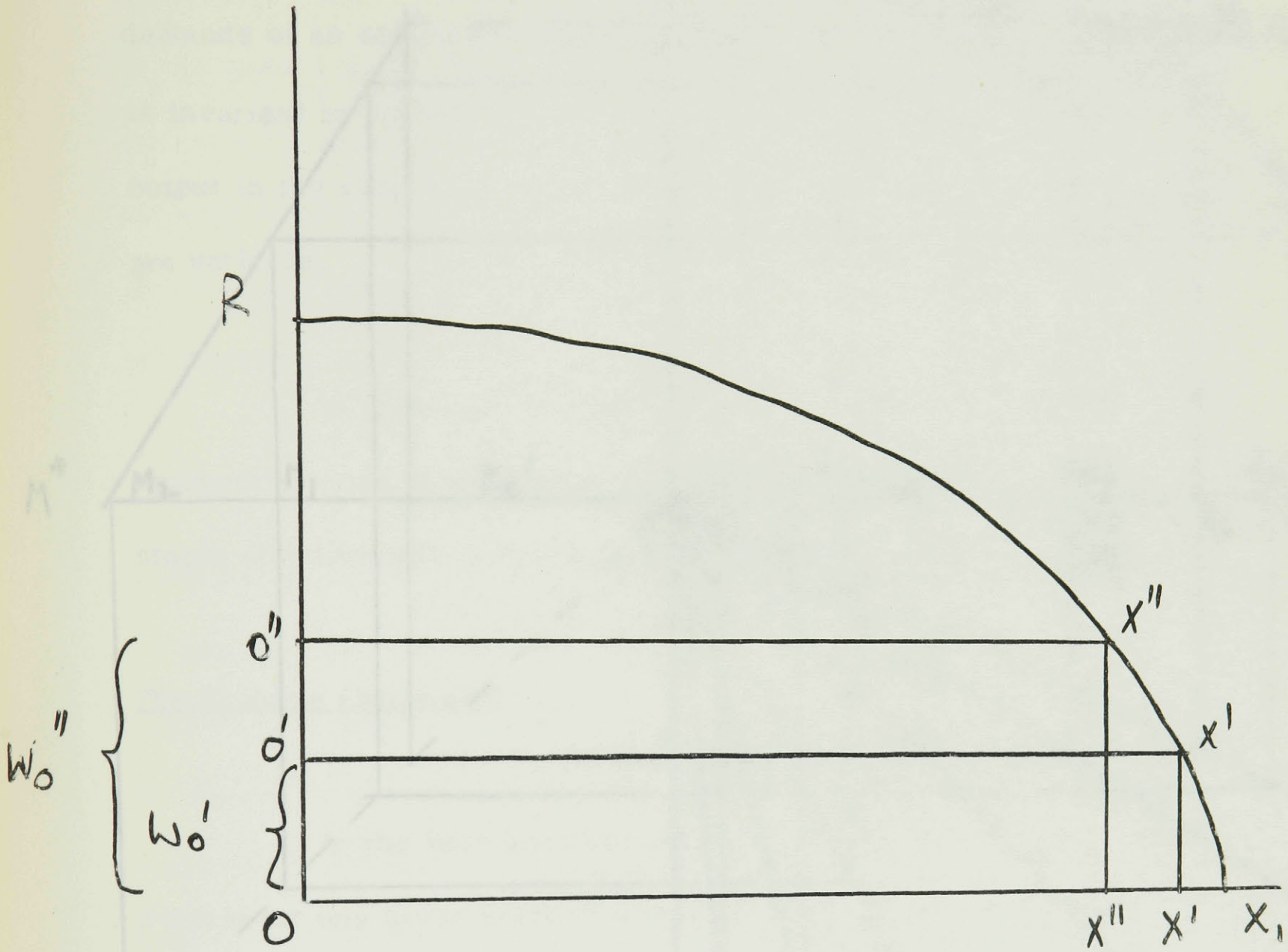
The exact combination of ackee and staple which will be produced in any one crop period depends, as we shall see later, on the terms of trade and on initial conditions relating to fixed charges. At any combination, however, the spare slave-power in the off-season is used for improvements (ΔK^*) and to provide services to the Government (T^*_g) and the Great House (W^*_2). Residentiary output (R^*) will always, therefore, exceed W^*_1. The output of ΔK^*, T^*_g, and W^*_2 depends to some extent on productivity and on the degree of seasonality in terms of the range of utilization of slave-time over the crop period.

In Figure 4, for instance, if C represents a combination of X^* and W^*_1 which can be produced in a crop period, then $\Delta K^* + W^*_2 + T^*_g$ is the addition to residentiary output which will be produced by the unemployed slaves.

The Mix of Ackee and Salt-fish

We have postulated that there exists a statutory or customary basket of subsistence. This serves the purpose of defining the level of

FIGURE 4b



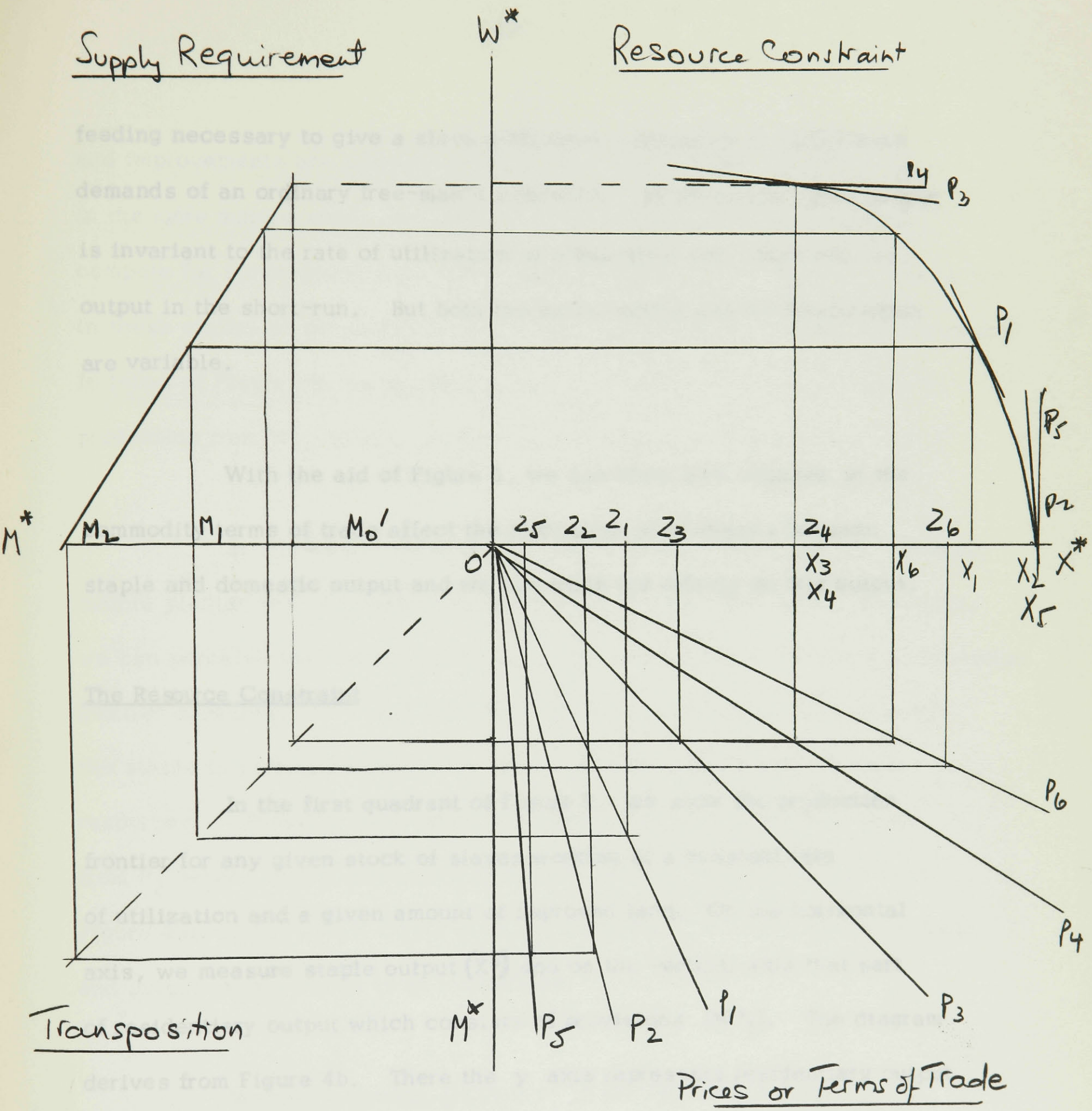

Supply Requirement
W*
Resource Constraint
I4
P3
P1
P5
P2
M*
M2
M1
M0'
Z5
Z2
Z1
Z3
Z4
Z6
O
X3
X4
X6
X1
X2
X5
X*
P6
P4
Transposition
M*
P5
P2
P1
P3
Prices or Terms of Trade

FIGURE 5a

feeding necessary to give a slave sufficient sustenance to fulfill work demands of an ordinary free-man's intensity. By definition, this basket is invariant to the rate of utilization of slave-time and, therefore, to output in the short-run. But both the actual ration and its composition are variable.

With the aid of Figure 5, we can show how changes in the commodity terms of trade affect the allocation of resources between staple and domestic output and we can trace the effects on Net output.

The Resource Constraint

In the first quadrant of Figure 5, we show the production frontier for any given stock of slaves working at a constant rate of utilization and a given amount of improved land. On the horizontal axis, we measure staple output (X^*) and on the vertical axis that part of residentiary output which consists of provisions (W^*_1). The diagram derives from Figure 4b. There the y axis represents residentiary output including such services $(W^*_2 + T^*_g)$ and improvements (ΔK^*) which exercise claims on slave-time which could otherwise be used in the direct production of the staple. In the early stages of the plantation, services

and improvements are assumed to be undertaken by slaves in off-season. In the more mature stage, however, provision of services and improvements compete for slave-power with direct staple production. The resulting increase in these claims on resources is a reduction in the maximum output of the staple. In terms of Figure 4b, an increase in the irreducible minumum of domestic production from W'_o to W''_o reduced maximum staple output from X' to X".

In Figure 5, we show only the upper part of Figure 4b. In more mature plantations, for instance, the production frontier is RX". From this, we can perceive that expansion of slave and land resources shifts the production frontier outwards. The resulting increase in the capacity to produce the staple is partially offset, however, by increasing claims on these resources. Possible combinations of provisions and staple thus range from P_2 where no provisions are produced (except the minimum shown in Figure 4b), to P_3 where staple production reaches its lowest possible level and output of provisions is at a maximum.

Because domestic production is an intermediate input to the plantation which is not traded in any internal or external market, its price can be measured only in terms of opportunity cost of staple output foregone.

The slope of the production frontier represents the opportunity cost of domestic output in terms of the staple. This is at a minimum at P_2 and a maximum at P_3.

Supply Requirements and Pre-Emptive Claims

The supply requirements of the plantation may be divided into three parts: There is a minimum requirement of local produce which has already been netted out of the production possibility frontier; there is a minimum requirement of imported goods for provisioning as well as for other purposes. These constitute minimum irreducible imports (M^*_o). The remainder of the supply requirement may be met either from local or imported sources. Within this remaining range, we assume a constant marginal rate of substitution in use between a unit of imported goods and a unit of domestic output

$$\left[\frac{dm}{dw} = k\right]$$

In the second quadrant of Figure 5, M^*_o indicates the irreducible minimum of imports, while the line W-M traces the locus of substitution in supplying requirements from the alternative sources. It is implicit in this argument that the goods (M^*_o) which can only be

obtained by importation are different in kind from those which are substitutes for domestic production. (The former may be termed "non-competitive" and the latter "competitive" imports). The existence of these irreducible imports are not necessarily due to a general shortage of resources in this economy. Rather they are the result of the fact that resources have been developed specifically for the production of the staple. The range of goods which can be produced domestically is, thus, narrow, while the legacy of metropolitan supply has created a pattern of taste which can be satisfied only by imported goods.

If we draw upon the simplifying assumption that the relative prices of the "competitive" and the "non-competitive" imports in metropolitan markets are constant, we can measure total imports in units of any major import commodity (eg: salt-fish). The physical import bill then consists of the number of units of salt-fish actually imported plus all other imports measured in salt-fish equivalence at metropolitan prices.

To these irreducible imports, we may add those pre-emptive

claims which are payable in metropolitan goods.[9] These are Repatriated Attorney Income (T^*_{Ax}), Encumbrances on account of planters' own expenditures in the metropole (T^*_{pl2}). If we assume, again, that the prices of luxury goods in the metropolis are constant in relation to the prices of all other imported goods, we can add the above pre-emptive claims to M_o to obtain M'_o which represents a charge on the plantation which is inescapable and involves the surrender of staple product.

Commodity Terms of Trade

The third quadrant serves the purpose of transposing the above "imports" measured in physical units to the lower half of the vertical axis, so that in the fourth quadrant the commodity terms of trade can be explicitly shown as the amount of staple which must be given up to purchase a unit of imports. This terms of trade $\frac{X}{M}$ is

---

9. Pre-emptive claims fixed in metropolitan currency such as annuities (T_{pl1}), rents and royalties (T_Q), and mortgages (T_{p2}), cannot be treated within the framework employed here.

FIGURE 5 (continued.)

Figure 5b

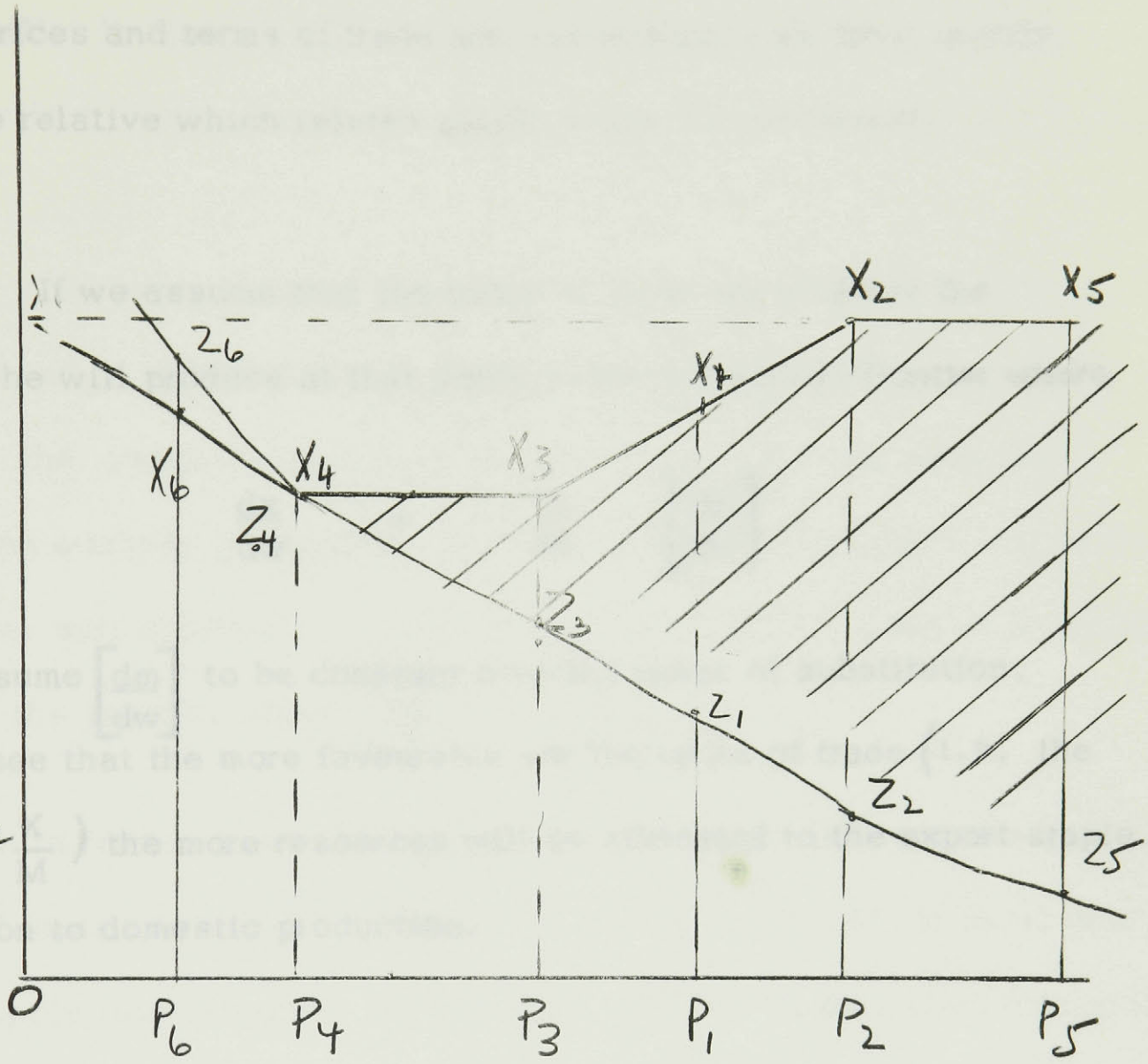
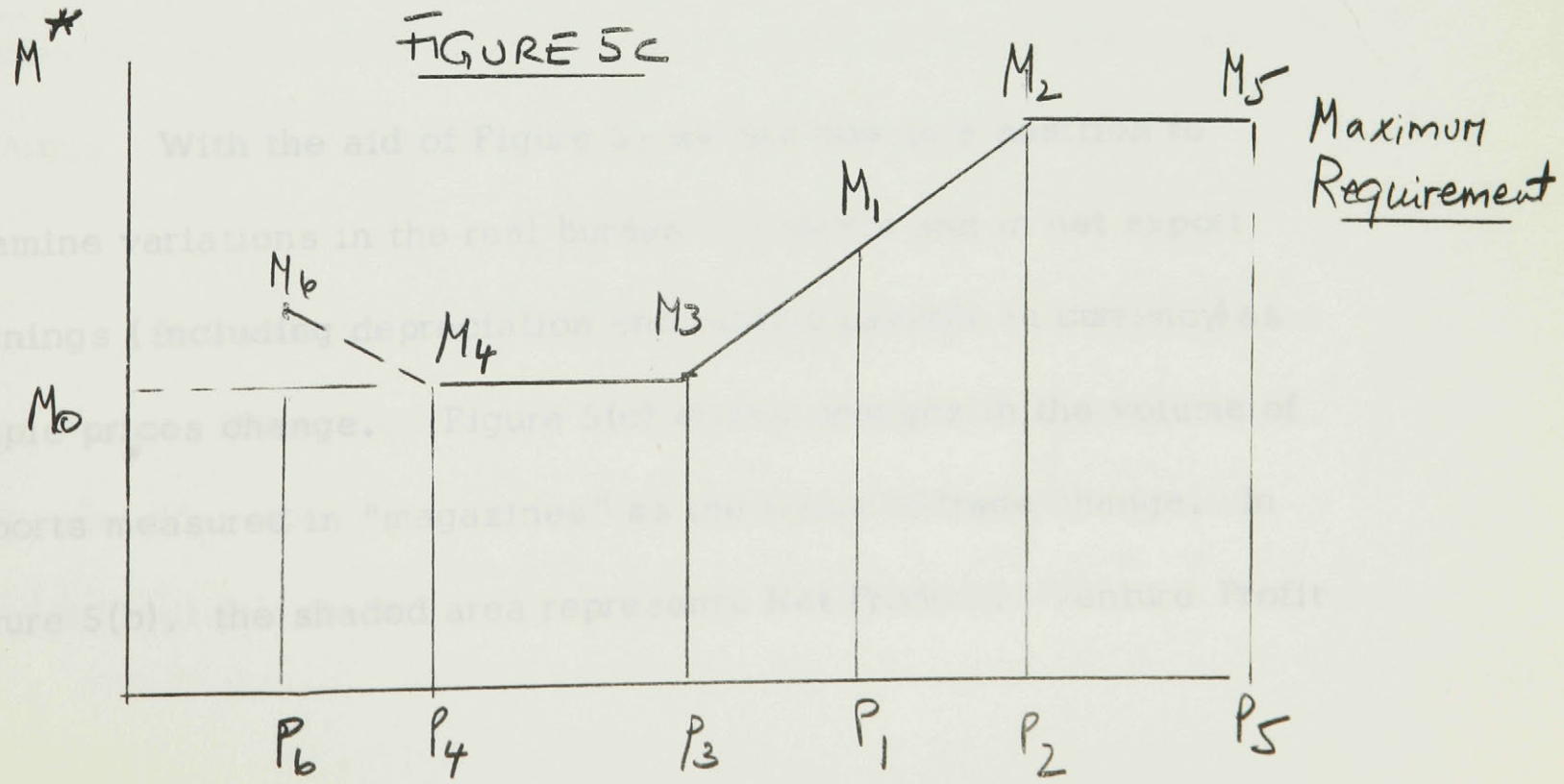


FIGURE 5c



depicted by the "price lines" P in the fourth quadrant. In this model, prices and terms of trade are synonymous, as there is only one price relative which relates staple to the import basket.

If we assume that the terms of trade are given to the planter, he will produce at that point on the production frontier where

$$\frac{dx}{dw} = \frac{X}{M} \cdot \left[\frac{dm}{dw}\right]$$

If we assume $\left[\frac{dm}{dw}\right]$ to be constant over the range of substitution, we can see that the more favourable are the terms of trade (i.e. the lower is $\frac{X}{M}$) the more resources will be allocated to the export staple in relation to domestic production.

Variations in the real import-burden

With the aid of Figure 5, we are now in a position to examine variations in the real burden of imports and in net export earnings (including depreciation and claims payable in currency) as staple prices change. Figure 5(c) shows changes in the volume of imports measured in "magazines" as the terms of trade change. In Figure 5(b), the shaded area represents Net Product: Venture Profit

inclusive of depreciation and pre-emptive claims fixed in metropolitan currency (Net Product is not adjusted to take into account any terms of trade effect which may be due to changes in the price of capital goods.)

We begin by postulating terms of trade as shown by the "price lines" in quadrant IV. Price is expressed as a terms of trade ratio: the amount of staple which must be given up in exchange for a given quantity of imports. At price p_1, given the rate of utilization, the planter will produce X^*_1 units of staple and OW^*_1 units of provisions. OX^*_1 is the point at which $\left[\frac{X}{M}\right]^1 = \left[\frac{dx}{dw}\right] .k$

The terms of trade ratio is here equal to the opportunity cost in terms of staple of replacing a unit of imports by an equivalent unit of local produce. Given supply requirements, including the normal rations, total metropolitan claims are M^*_1. Transposing to the fourth quadrant, these claims involve the surrender of OZ^*_1 of the staple so that real net export earnings, including depreciation, are given by $Z^*_1X^*_1$.

If the terms of trade now become more favourable and price rises to p_2, the amount of the staple produced will increase to the maximum X^*_2 and the output of provisions which can be locally supplied will fall to zero. Pre-emptive claims are now at their maximum

M^*_2 but in spite of this, the cost in terms of the staple falls to OZ^*_2 and real net export earnings (as defined) increase to $Z^*_2X^*_2$.

Suppose, in contrast, that the price had fallen from p_1 to p_3. In this case, the amount of the staple produced would have reached the minimum X^*_3 at which level of output provisions reach their maximum W^*_{max} and claims fall to the minimum level $M^*_0{}^1$. At such a low price, however, their cost rises to Z^*_3 and net export earnings are depressed to $Z^*_3 X^*_3$.

It is to be noted that when the price of the staple falls below p_3, the output of the staple does not fall below OX^*_3 since the maximum capacity for local provisioning has been reached. Because claims cannot fall below their minimum $M^*_0{}^1$, the effect of a deterioration in the terms of trade to any point below p_3 is a progressive squeeze on real net export earnings by the rising burden of pre-emptions. Eventually, at price p_4, successive declines in price eliminate profits altogehter. Here, planters can do no more than meet the claims on their business.

If prices deteriorate even further - to p_6, for instance - the plantation can meet costs only by increasing the output of the staple to X^*_6 and by cutting rations. If rations were to be maintained, there

would be a loss of $X^*_6 Z^*_6$. At any price lower than p_4 there is nothing left over for defraying depreciation charges. It is a means of hanging on by consuming capital.

It is obvious that the higher are pre-emptions, the greater the vulnerability of the planters' position. At the same time, the higher the minimum of residentiary provisions and services required, the less flexibility there is in releasing resources for staple production when the terms of trade take a favourable turn.

Depreciation

We turn now to consider the relationship between depreciation of stored-up slave-power and work intensity in the accounting period. It will be remembered that the stock of stored-up slave-power is depleted at different rates as the planters avail themselves of the flow of expended slave-time by varying the rate of utilization of slave-time. It will also be remembered that we have postulated the existence of a statutory ration $\overline{w + m}$; and that this ration defines the level of feeding which gives the slave enough sustenance to perform work of an ordinary free-man's intensity.

When the statutory requirement is respected, there is no depletion of slave-power on account of the regime of slave work.[10] Depreciation is purely demographic and invariant to output. Marginal cost to the plantation is zero.

Demographic Depreciation

The demographic component of depreciation is given by :

$$D^*_1 = \left(\frac{\bar{n}}{2}\right) \cdot N^* \left[g\alpha + g\beta - g\gamma\right]$$

where $g\alpha$, $g\beta$, and $g\gamma$ are rates of decline of the slave population due to the three demographic factors : aging and mortality, escape to maroon country, and fertility.

Because $\left(\frac{\bar{n}}{2}\right)$ is the number of units of slave-power stored-up in the average slave, demographic depreciation per slave is given by the expression:

$$\Delta \left[\frac{\bar{n}}{2}\right]_1 = \left(\frac{\bar{n}}{2}\right) g$$

where $g = \left[g\alpha + g\beta - g\gamma\right]$

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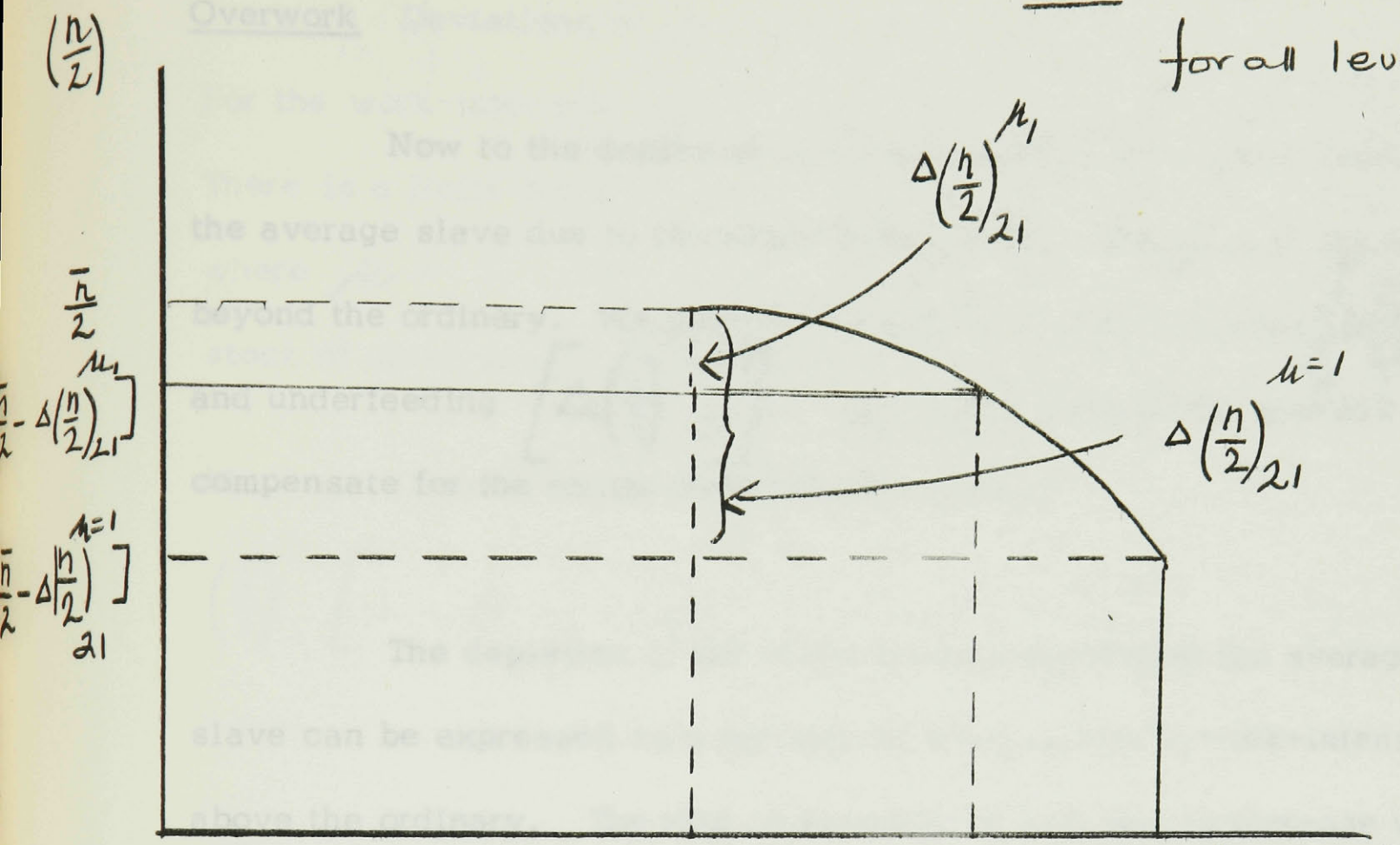
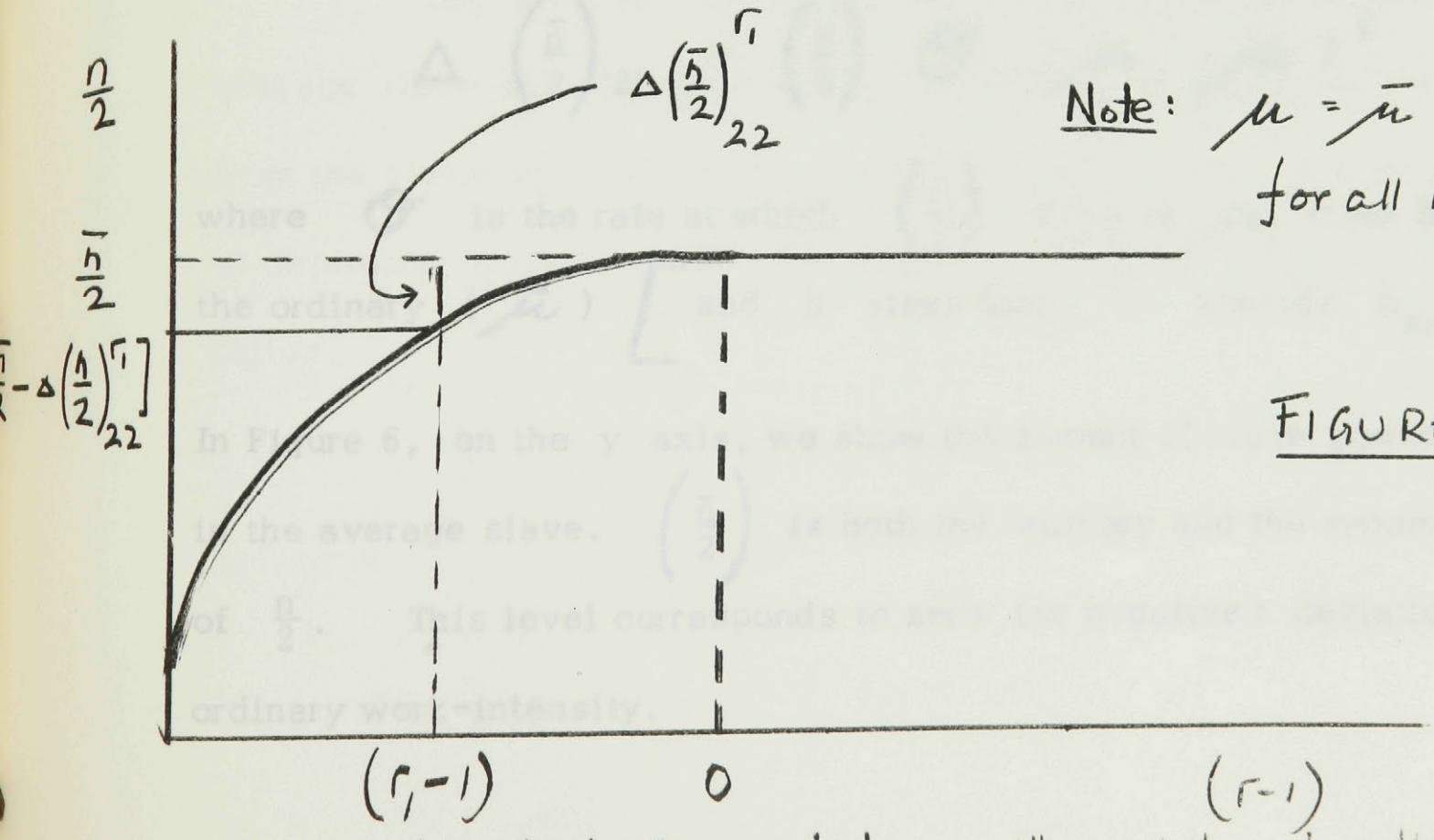
10. This is not strictly true since there will still be spontaneous runaway from the condition of bondage. However, to the extent that it is, we are able to make an analysis of the economics of capitalism and slavery in regard to this item of costs.

FIGURE 6

Note: $w+m = \overline{w+m}$ for all levels of μ



Level of Depreciation with variation in intensity



Note: $\mu = \bar{\mu}$ for all levels of r

FIGURE 7

Level of Depreciation with variation in rations

Overwork

Now to the depletion in the amount of slave-power embodied in the average slave due to increases in the rate of utilization of slave-time beyond the ordinary. We explore the effects of both overwork $\left[\Delta\left(\frac{\bar{n}}{2}\right)_{21}\right]$ and underfeeding $\left[\Delta\left(\frac{\bar{n}}{2}\right)_{22}\right]$ as well as attempts by planters to compensate for the former by increasing rations.

The depletion of the slave-power embodied in the average slave can be expressed as a function of the increase in work-intensity above the ordinary. The rate of depletion is assumed to increase with the intensity of work. Thus,

$$\Delta\left(\frac{\bar{n}}{2}\right)_{21} = \left(\frac{\bar{n}}{2}\right) \mathcal{O} \left(\mu - \bar{\mu}\right)^2$$

where $\mathcal{O}$ is the rate at which $\left(\frac{\bar{n}}{2}\right)$ falls as μ rises beyond the ordinary $(\bar{\mu})$ [and h rises from $\bar{h}$ towards h_{max}].

In Figure 6, on the y axis, we show the amount of slave-power embodied in the average slave. $\left(\frac{\bar{n}}{2}\right)$ is both the ordinary and the maximum level of $\frac{n}{2}$. This level corresponds to zero (or negative) deviations from ordinary work-intensity.

Deviations of μ from $\bar{\mu}$ are shown on the x axis. For the work-intensity $(\mu_1 - \bar{\mu})$, the depletion is $\Delta \left(\frac{\bar{n}}{2}\right)^{\mu_1}_{21}$. There is a finite maximum to the variable $(\mu - \bar{\mu})$ at the point where $\mu = 1$. Here the axis variable is $(1 - \bar{\mu})$ and the stock of slave-power $\left(\frac{n}{2}\right)$ reaches its minimum $\left[\left(\frac{\bar{n}}{2}\right) - \Delta\left(\frac{\bar{n}}{2}\right)^{\mu=1}_{21}\right]$. More specifically, at this mimimum, the stock of $\left(\frac{n}{2}\right)$ is equal to $\left(\frac{\bar{n}}{2}\right)\left[1 - \sigma\,(1 - \bar{\mu})^2\right]$. because $\left(\frac{\bar{n}}{2}\right)_{21} = \left(\frac{\bar{n}}{2}\right)\sigma(1 - \bar{\mu})^2$

Underfeeding

The depletion of stored-up slave-power embodied in the average slave can be expressed as a function of the short-fall in rations from the statutory level, assuming an ordinary intensity of work. The rate of depletion is again assumed to increase, this time with the decline of the ration.

$$\Delta\left(\frac{\bar{n}}{2}\right)_{22} = \left(\frac{\bar{n}}{2}\right) \tau \left[\frac{(w + m) - (\overline{w + m})}{\overline{w + m}}\right]^2$$

or

$$= \left(\frac{\bar{n}}{2}\right) \tau \left[r - 1\right]^2$$

where $r = \frac{(w + m)}{\overline{w + m}}$ and $r \leq 1$

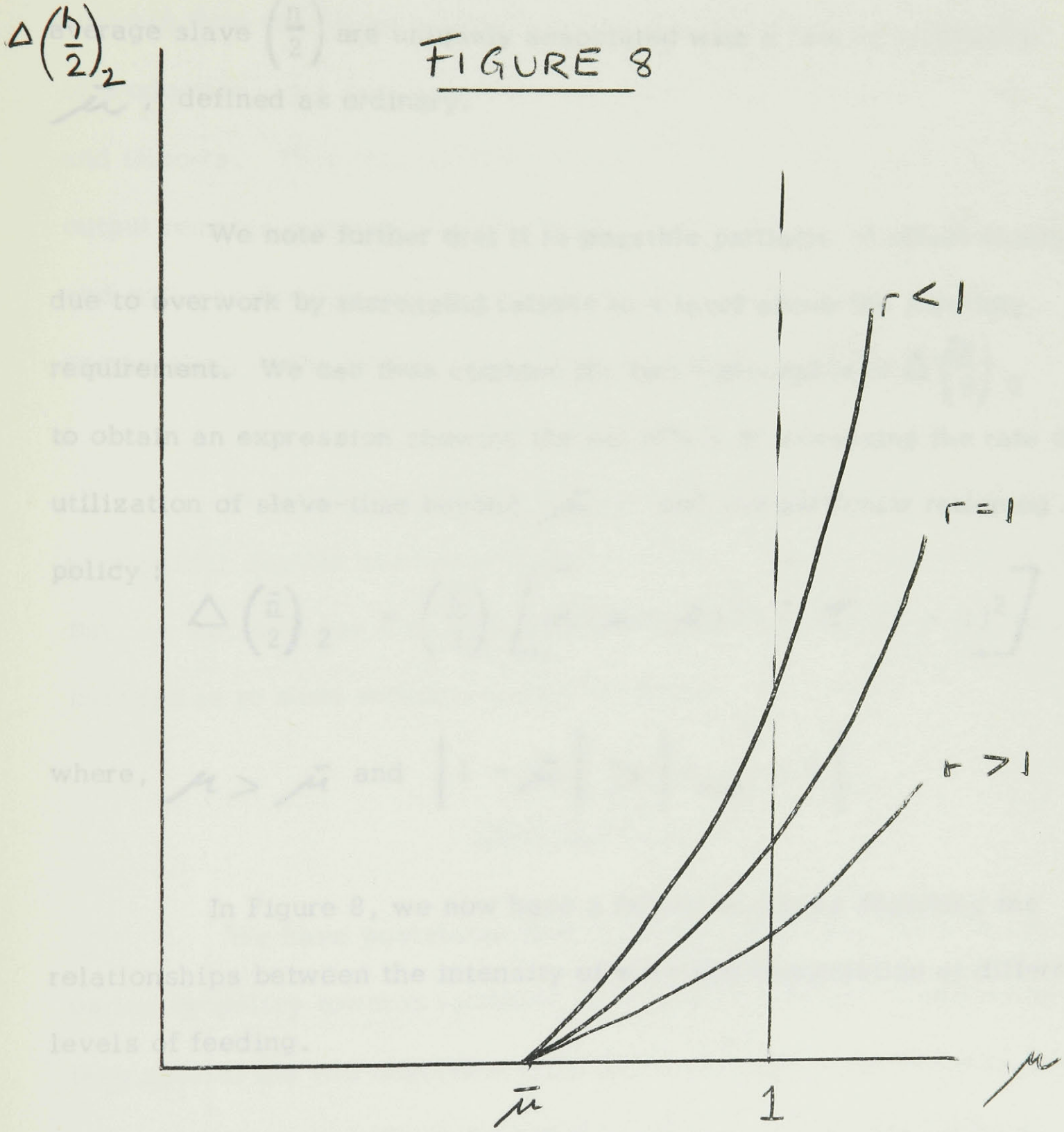
where $r > 1$, $\Delta\left(\frac{\bar{n}}{2}\right)_{22} = 0$. This means that there can be no accretion to the stock of slave-power $\left(\frac{n}{2}\right)$ due to feeding levels in excess of the statutory level at an ordinary intensity of work.

In Figure 7, the y axis again represents the slave-power embodied in the average slave while the x axis represents deviations of the ration from the statutory level. As before when $r = 1$, i.e., when rations are at the statutory level, there is no depletion. When the ration falls to r_1 (< 1), depletion is shown by $\Delta\left(\frac{\bar{n}}{2}\right)_{22}$ and the stock of stored-up slave power falls to

$$\left(\frac{\bar{n}}{2}\right) \left[1 - \tau (r_1 - 1)^2\right]$$

We note that at the statutory ration $\overline{w + m}$, the demographic

FIGURE 8



depreciation as defined by g, and the slave-power stored-up in the average slave $\left(\frac{n}{2}\right)$ are uniquely associated with a rate of utilization $\bar{\mu}$, defined as ordinary.

We note further that it is possible partially to offset depletion due to overwork by increasing rations to a level above the statutory requirement. We can thus combine the two components of $\Delta\left(\frac{\bar{n}}{2}\right)_2$ to obtain an expression showing the net effect of increasing the rate of utilization of slave-time beyond $\bar{\mu}$, and any particular rationing policy:

$$\Delta\left(\frac{\bar{n}}{2}\right)_2 = \left(\frac{\bar{n}}{2}\right)\left[\alpha(\mu - \bar{\mu})^2 \pm \tau\,(r - 1)^2\right]$$

where, $\mu > \bar{\mu}$ and $\left|1 - \bar{\mu}\right| > \left|r_{max} - 1\right|$

In Figure 8, we now have a family of curves depicting the relationships between the intensity of work and depreciation at different levels of feeding.

Unit-costs and the Rate of Utilization

We now examine the manner in which, owing to rising marginal capital consumption, unit costs of production rise as the rate of

utilization of slave-time is increased. In order, initially , to abstract from the effect of changes in the terms of trade on real costs of production, we assume a constant price-ratio between the staple and imports. This implies that the output mix of staple and resi dentiary output remains constant as total output increases. T charges are fixed and ordinary demographic depreciation (D_1) is invariant to output. The composition of the ration (W + M) is also assumed fixed.

As the rate is pushed beyond $\bar{u}$ marginal costs rise on account of physical capital consumption due to work. The D_2 curve turns up. But, as we shall see now, the form in which these costs are actually incurred is to some extent a matter of choice.

Feeding Policy

We have postulated that the composition of total cost can be varied by policy towards rationing in relation to capital consumption. We now take note of the two important differences between costs incurred in the form of expenditures on provisions and the costs of capital consumption. The former is a money outlay which cannot be escaped since merchants deduct it from staple earnings. The latter, on the other hand, is a book charge to be offset against profits. Further, both because of the nature of the

Total Cost
D2
W+M
D1
T
$\bar{\pi}$
Case I
D2
W+M
D1
T
$\bar{\pi}$
Case II
W+M
D1
T
$\bar{\pi}$
Case III

FIGURE 9

capital asset and because of uncertainty about the cost of replacement, depreciation is not an item which is easy to calculate. Accordingly, in choosing their feeding policies, planters have some room to manoeuvre with their portfolios. To feed fully is to opt for fixed capital, to underfeed or starve is to opt for cash.

As is shown by Figure 9, planters have three options in regard to rationing policy when the rate of utilization is pushed beyond the ordinary and capital consumption rises. They may feed the statutory ration (Case I) or they may try to offset depletion by increasing rations (Case II). In certain conditions, they may cut rations (Case III). The option which a planter adopts depends on his assessment of the underlying conditions of the trade and his expectations regarding fluctuations in the shorter-run, as well as on his current profitability, liquidity and credit-worthiness. There are many possible permutations between the factors which determine the choice.

Expectations Good

When long-run expectations are good, planters count on sustaining profitable operations. Their tendency is to conserve capital, more likely to expand it . With high current staple prices, profitability

and liquidity, they undertake compensatory feeding, all the more so if prices, profitability and liquidity, the decision depends on credit-worthiness, the rate of interest, and calculations as to the time that the next recovery will come. Slave prices are always rising steadily and once the credit is available, it may pay to borrow to feed at least ordinary rations and to conserve slave-power. But if interest rates are high and the recovery some way off, it may pay to consume capital now by underfeeding, to avoid the charges on loans, and to restock later when staple prices are high. If, for some reason, credit is not available, this is in fact the only option.

Expectations Fair

In contrast, when expectations are only fair, planters are both less inclined and less able to expand their slave stock or even simply to conserve it. Contraction (except for liquidity purposes) is out of the question since the fate of the business depends upon having adequate capacity to exploit in times when prices are temporarily excellent. Normally, fixed costs take a large share of earnings so that profitability, liquidity on own-account, and credit-worthiness are all restricted. Behaviour is now less determinate and with that feeding policy becomes problematic. What is certain is that the planning horizon will now extend

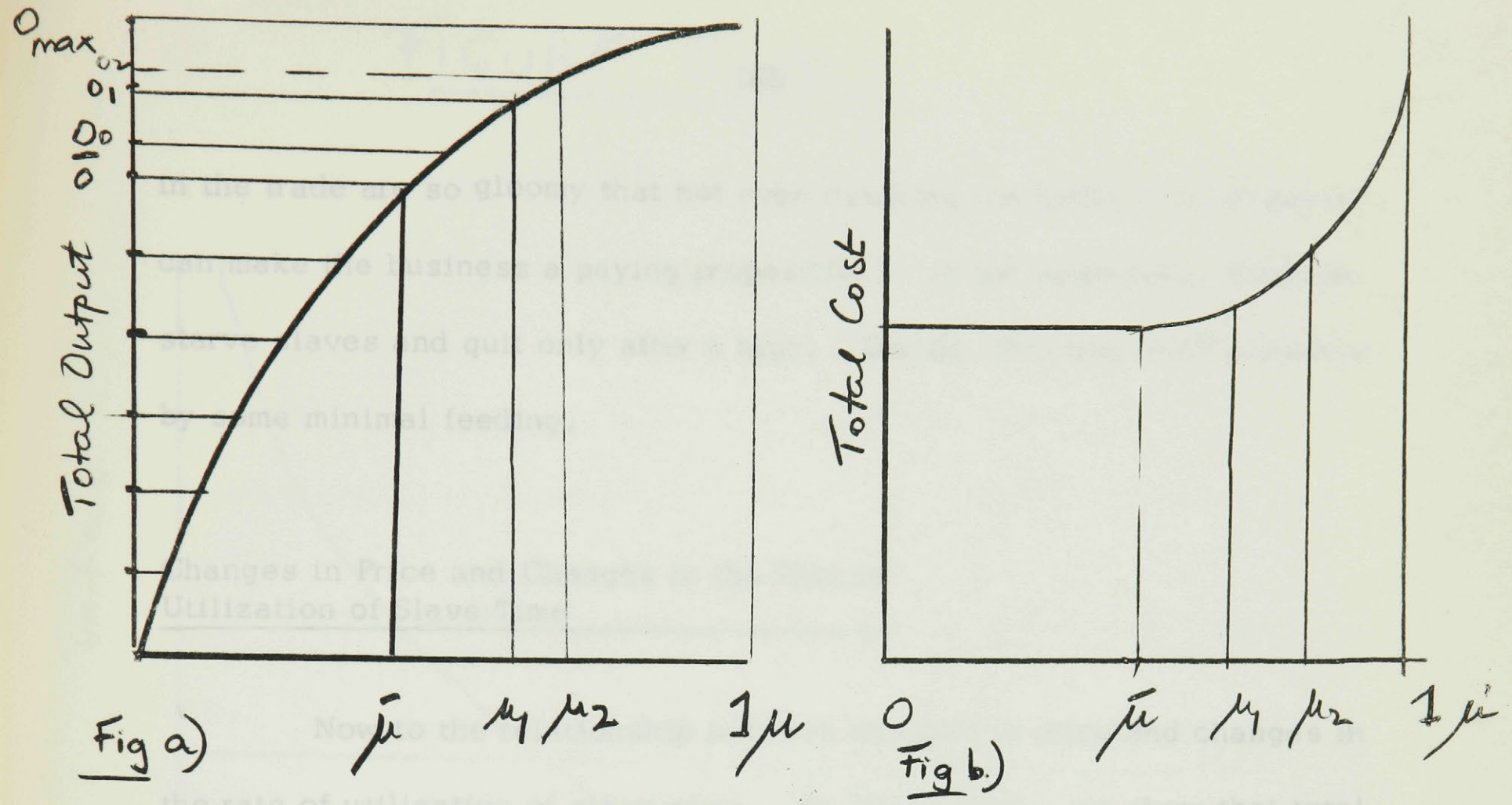
more from fluctuation to fluctuation than from crop period to crop period and that conditions of credit will have a greater weighting in calculations. The more profitable plantations will be those which, at peak prices, are able to exploit their maximum capacity to the hilt, and which, at low prices, have only limited liabilities on merchant-account.

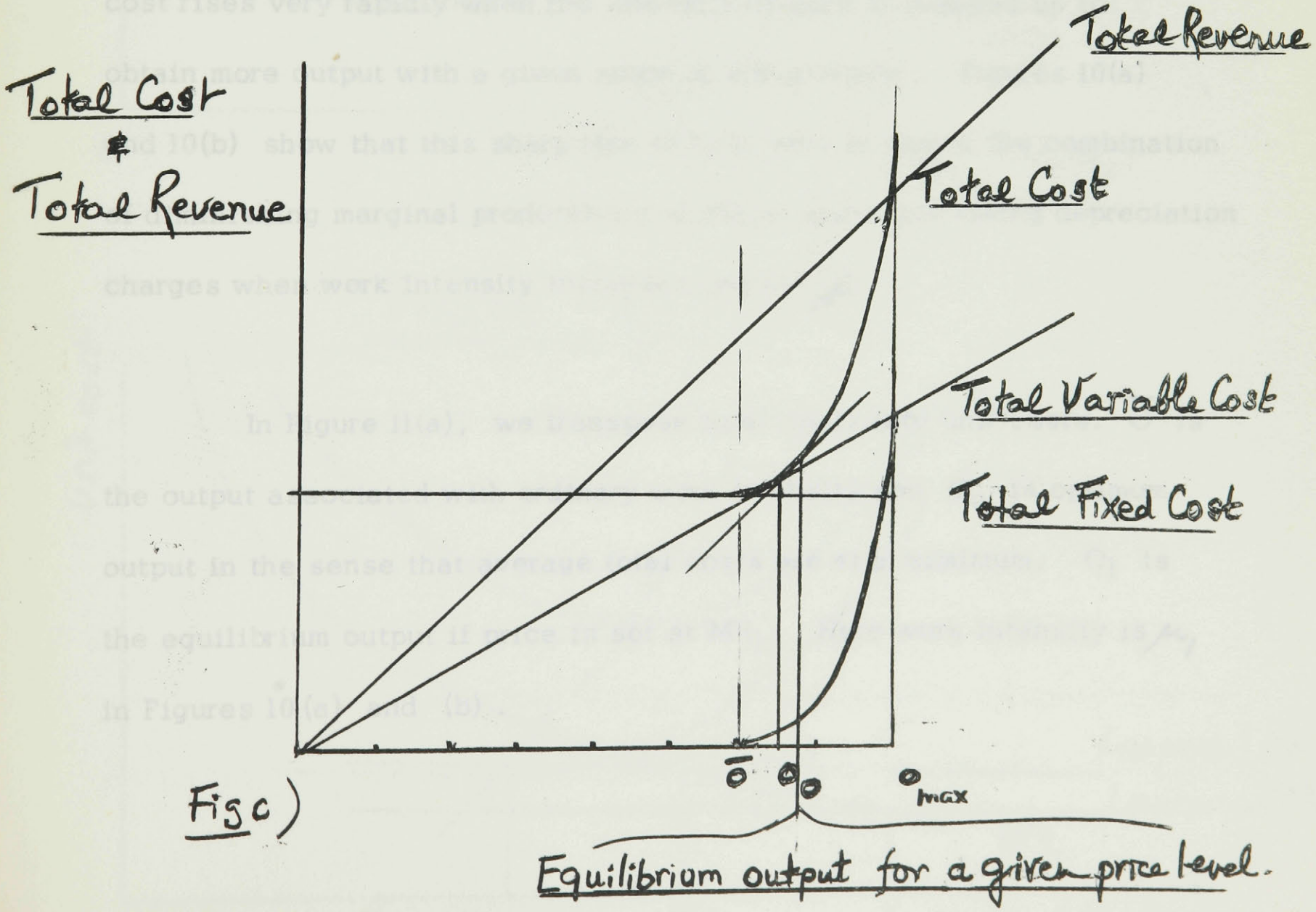
From this we deduce that when prices are expected to rise to, or to stay for some time at what is regarded in the trade as adequately remunerative levels, planters will at least undertake compensatory feeding to conserve and may even expand. When prices are high but expected to fall from those levels, or when prices are low and are expected to continue at those levels, they will adopt ordinary rations at best. By this policy they consume capital in order that during the coming or continuing trough, they will have the maximum liquidity consistent with sustaining operations. Clearly, the availability and the terms of credit, the amplitude of fluctuations and the range of prices between highs and lows will be the determinants of liquidity needs.

Expectations Gloomy

It is only if planters wish to cut losses and quit that they will adopt starvation rations. But this they will do only when expectations

FIGURE 10


O max
O3
O2
O1
O0
Total Output
μ̄
μ1 μ2
1μ
Fig a)
Total Cost
0
μ̄
μ1 μ2
1μ
Fig b.)


Total Cost
&
Total Revenue
Total Revenue
Total Cost
Total Variable Cost
Total Fixed Cost
Ō
O0
O max
Fig c)
Equilibrium output for a given price level.

in the trade are so gloomy that not even catching the highs in fluctuations can make the business a paying proposition. At the same time, they can starve slaves and quit only after a high. During lows they must conserve by some minimal feeding.

Changes in Price and Changes in the Rate of Utilization of Slave-Time

Now to the relationship between changes in price and changes in the rate of utilization of slave-time. In Figure 10(c), we show that total cost rises very rapidly when the intensity of work is stepped up to obtain more output with a given stock of slave-power. Figures 10(a) and 10(b) show that this sharp rise in total cost is due to the combination of diminishing marginal productivity of slave-power and rising depreciation charges when work intensity increases beyond $\bar{\mu}$.

In Figure 11(a), we transpose total costs into unit costs. $\bar{O}$ is the output associated with ordinary work intensity and O_o is optimum output in the sense that average total costs are at a mimimum. O_1 is the equilibrium output if price is set at MR_1. Here work intensity is μ_1 in Figures 10(a) and (b).

FIGURE 11 (a)

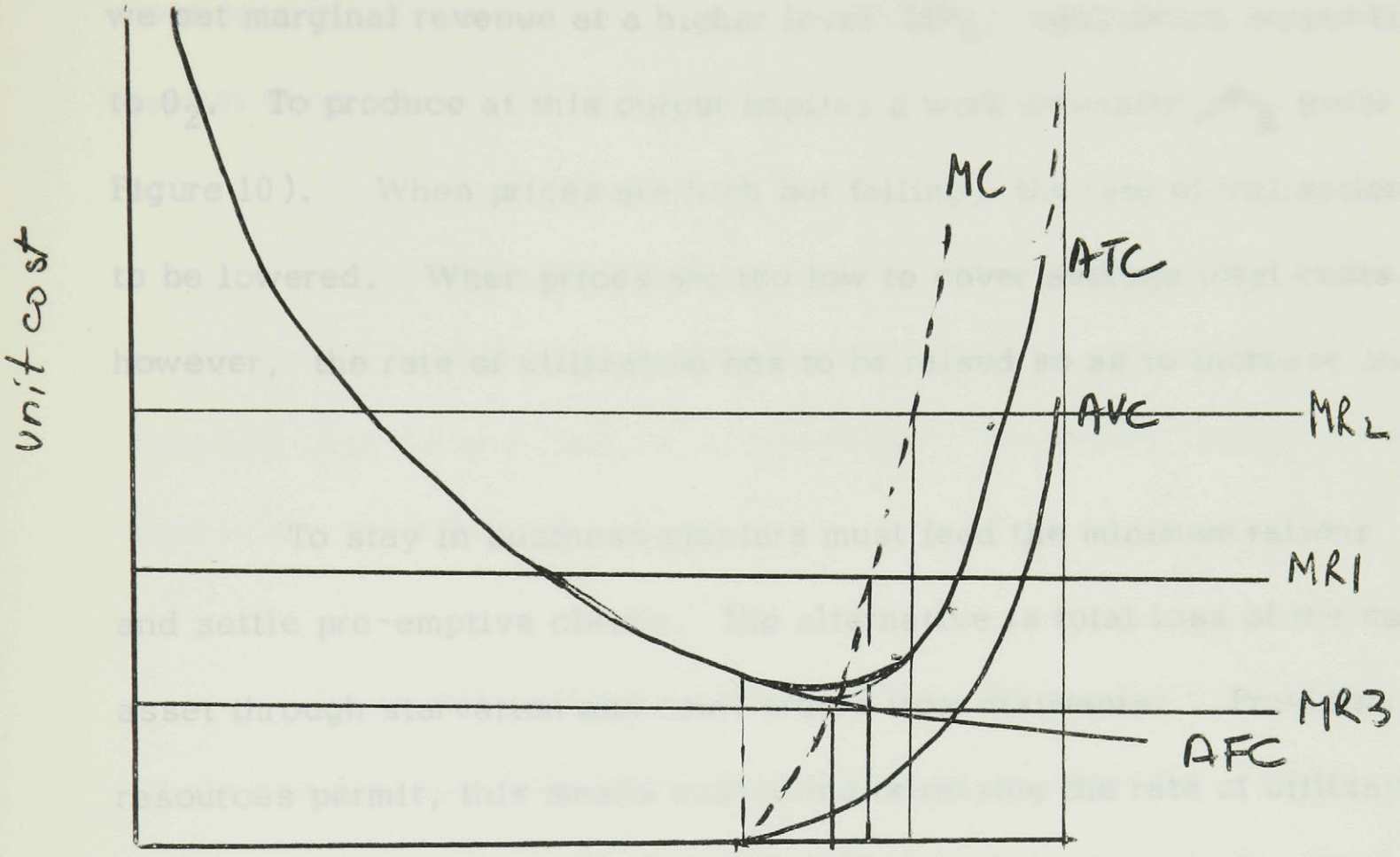
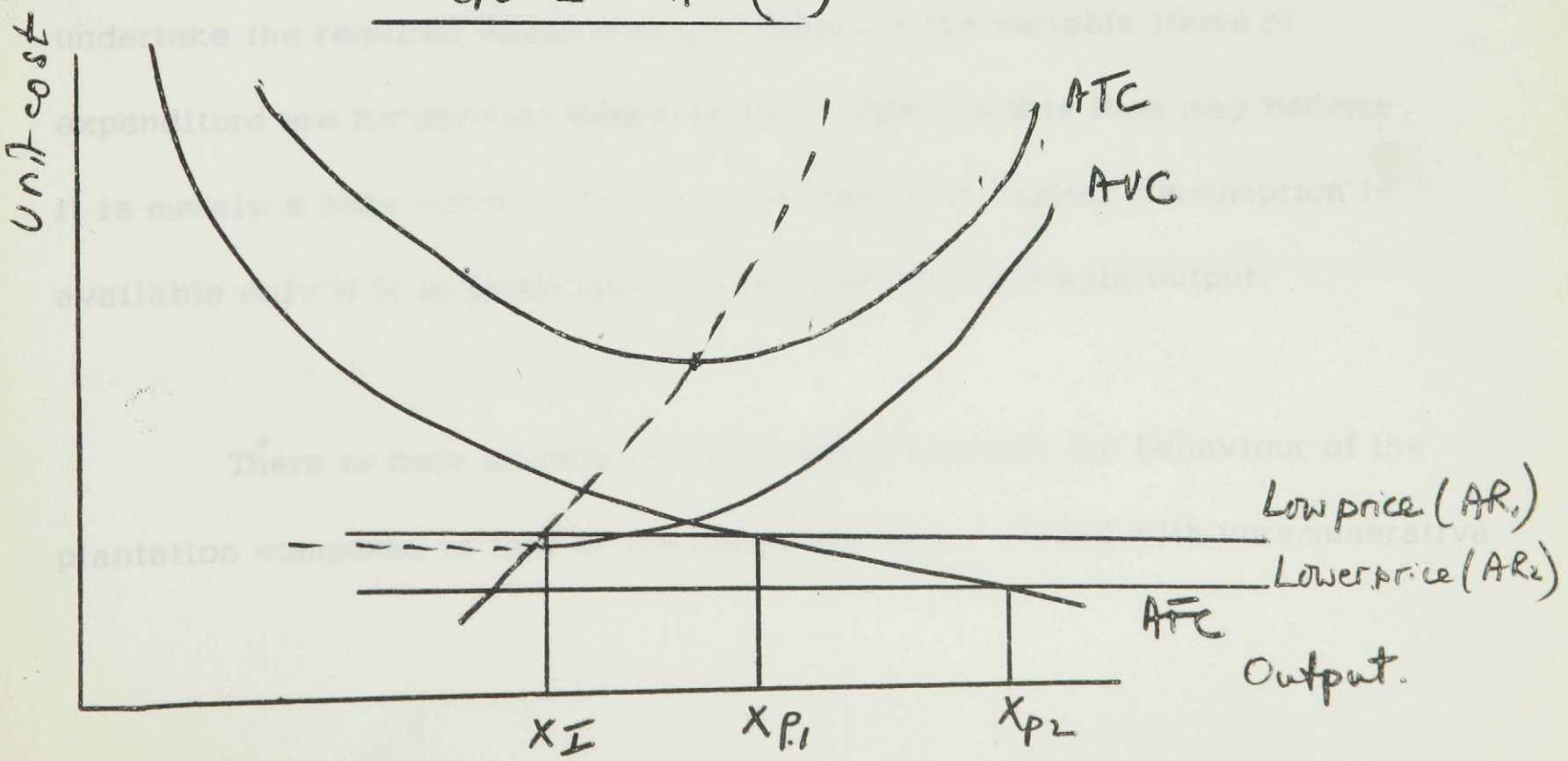


FIGURE 11 (b)



When prices rise, the rate of utilization is raised. If in Figure 11, we set marginal revenue at a higher level MR_2, equilibrium output rises to 0_2. To produce at this output implies a work intensity μ_2 (refer Figure 10). When prices are high but falling, the rate of utilization tends to be lowered. When prices are too low to cover average total costs, however, the rate of utilization has to be raised so as to increase output.

To stay in business planters must feed the minimum rations and settle pre-emptive claims. The alternative is total loss of the capital asset through starvation and court orders from claimants. Providing resources permit, this means sustaining or raising the rate of utilization and expanding output to the point 0_3 where average revenue is equal to average fixed cost. What is more, the lower the price, the larger the expansion of staple required to satisfy this condition. Planters can undertake the required expansion only because the variable items of expenditure are incurred as depreciation. High as this item may become, it is merely a book entry. Even so, the option of capital consumption is available only if it is physically possible to expand staple output.

There is here an interesting contrast between the behaviour of the plantation compared to that of the industrial firm. Faced with unremunerative

prices, the producer in the (Marshallian) Industrial Economy must meet variable costs in order to stay in business. His fixed costs are capital consumption and are deferrable, at least for a time.

Owing to the nature of the capital asset in Plantation Economy, by contrast it is the fixed costs which the producer must meet if he does not wish to be forced out of business. Deferrable capital consumption here is the variable cost.

Figure 11(b) shows Average Fixed Costs, Average Variable Costs and Average Total Costs as in Marshallian analysis. At a low price AR_1, the industrial producer will tend to produce at X_I where he can cover at least some of his variable costs. The planter, however, will attempt to produce at X_{P1}, where he can cover fixed costs. If prices deteriorate even further to AR_2, the industrial producers' output will remain at X_I where losses are minimized. The planter, however, will attempt to expand output still further to X_{P2}. The larger the output he can extract from his resources, the more secure his position vis-a-vis his creditors will be.

Simplified as this representation may be, it helps to explain the apparently perverse tendency for output to increase as prices fall. It even explains why planters may purchase more slaves when prices are low but expected to rise in the future. It sheds light on the tendency of plantation economy towards chronic oversupply.

FIGURE 12a

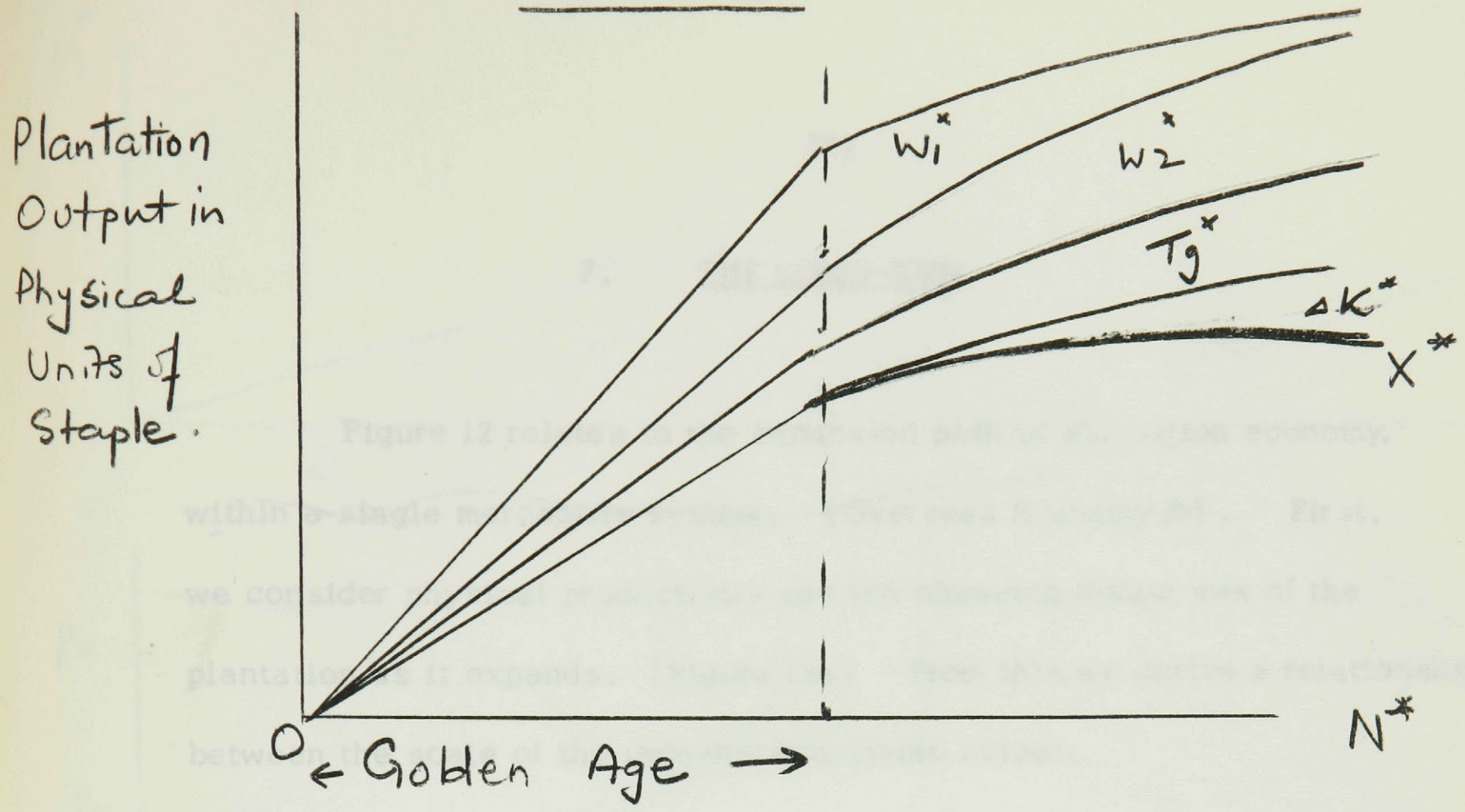
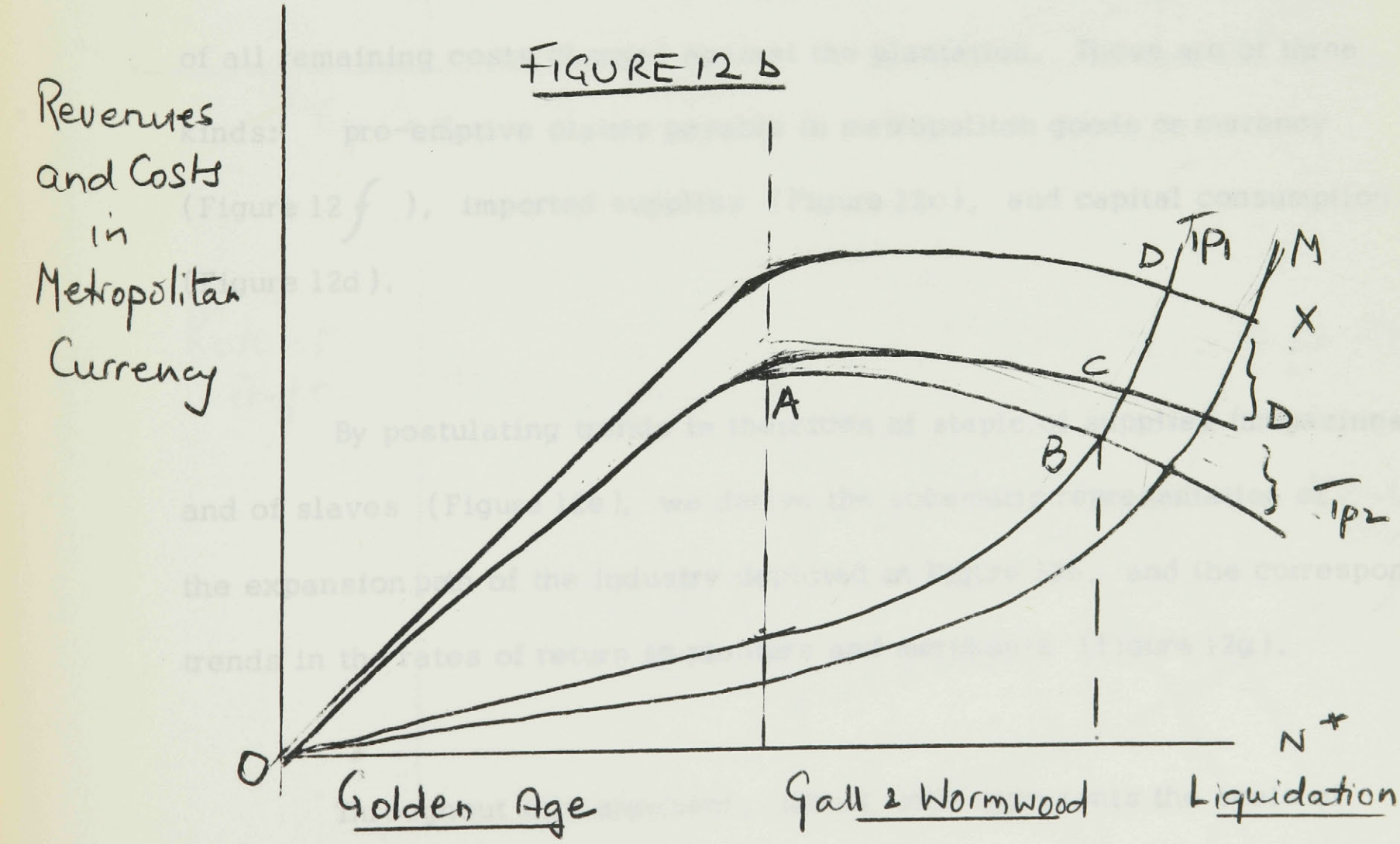


FIGURE 12b



7. THE LONG-RUN

Figure 12 relates to the expansion path of plantation economy within a single mercantile system, (Overseas Economy A). First, we consider physical productivity and the changing output mix of the plantation as it expands. (Figure 12a) From this, we derive a relationship between the scale of the industry and staple output.

We next turn to consider changes in the character and composition of all remaining costs charged against the plantation. These are of three kinds: pre-emptive claims payable in metropolitan goods or currency (Figure 12*f*), imported supplies (Figure 12c), and capital consumption (Figure 12d).

By postulating trends in theprices of staple, of supplies (magazines) and of slaves (Figure 12e), we derive the schematic representation of the expansion path of the industry depicted in Figure 12b, and the corresponding trends in the rates of return to planters and merchants (Figure 12g).

Throughout this argument, the x axis represents the scale of the industry in terms of the size of the capital stock. As noted above, the

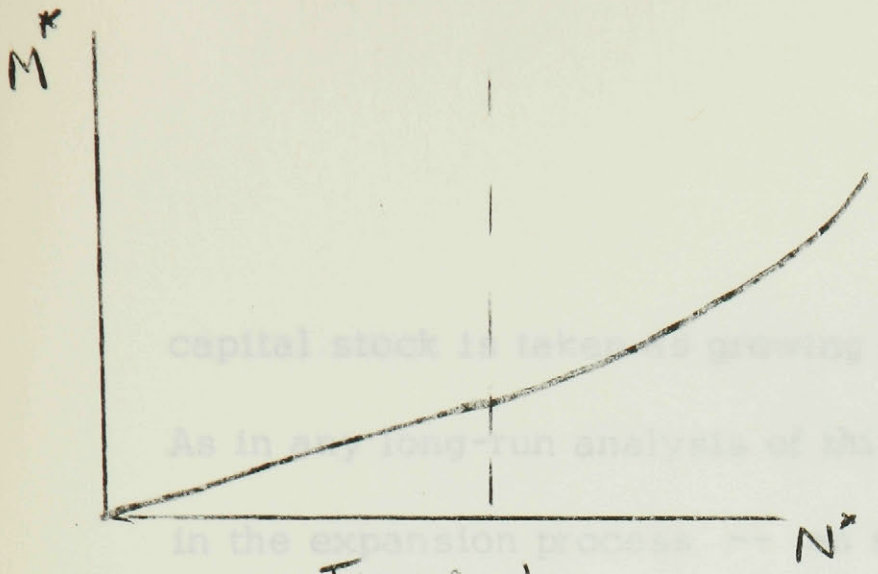


Fig 12c)

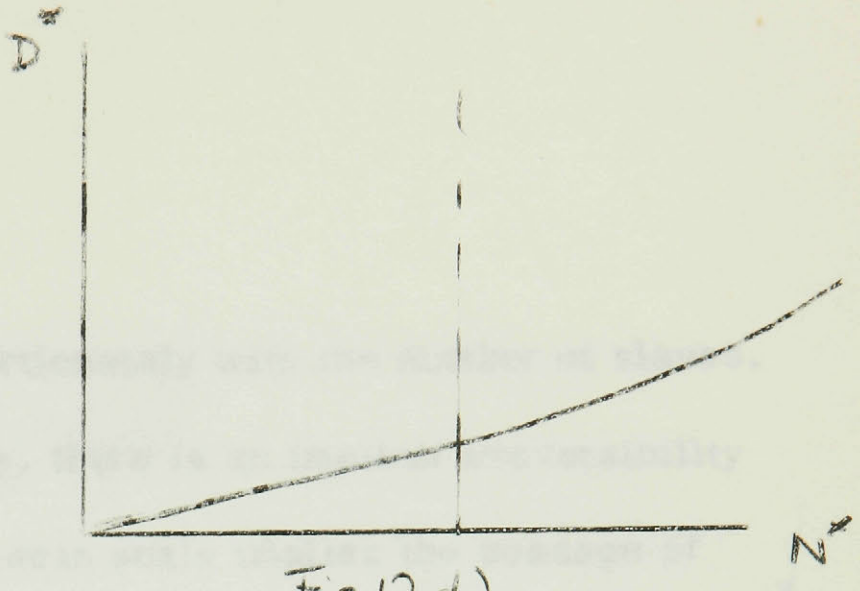


Fig 12d)

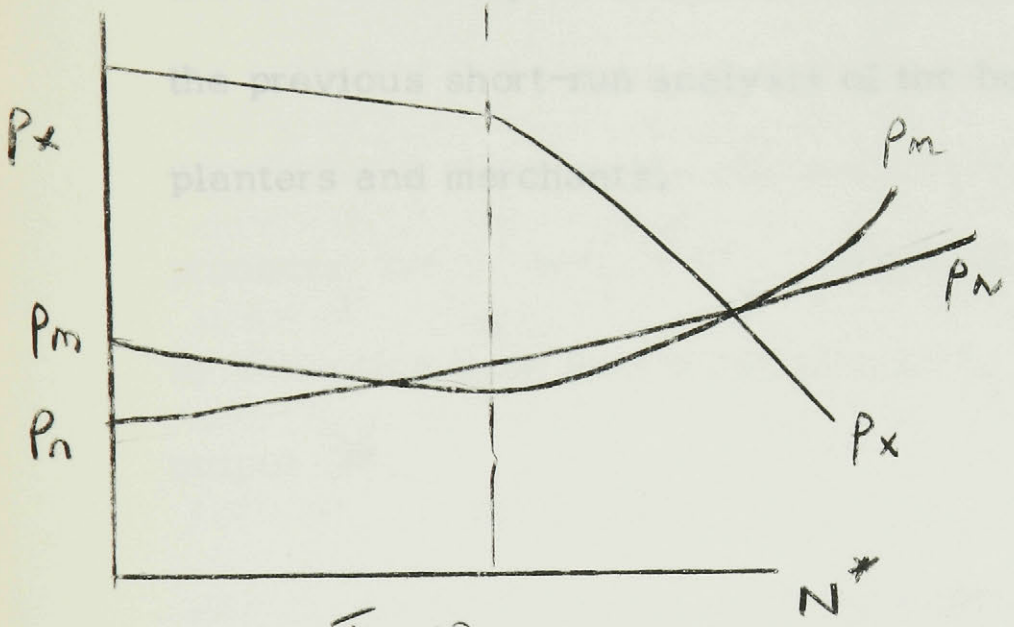


Fig. 12 e

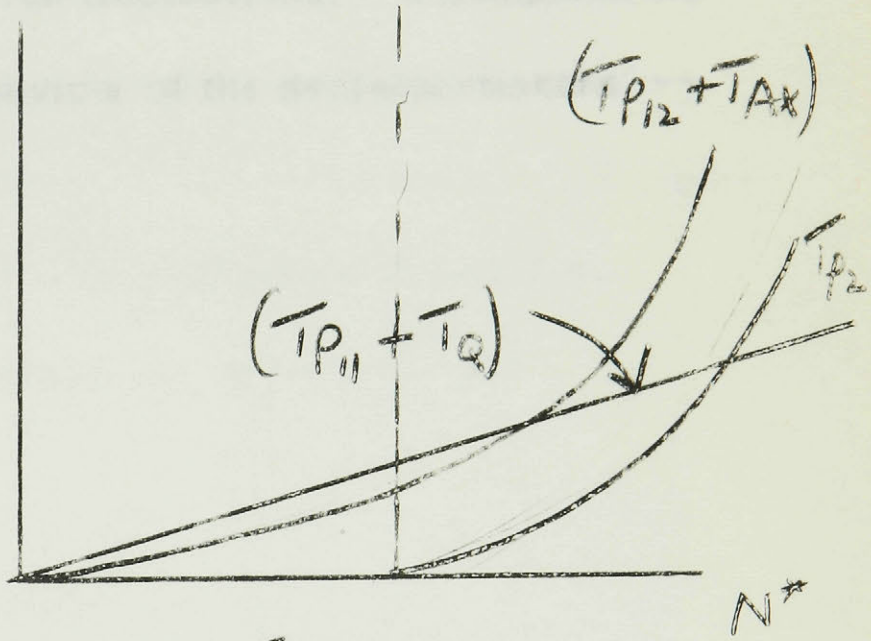


Fig. 12f.

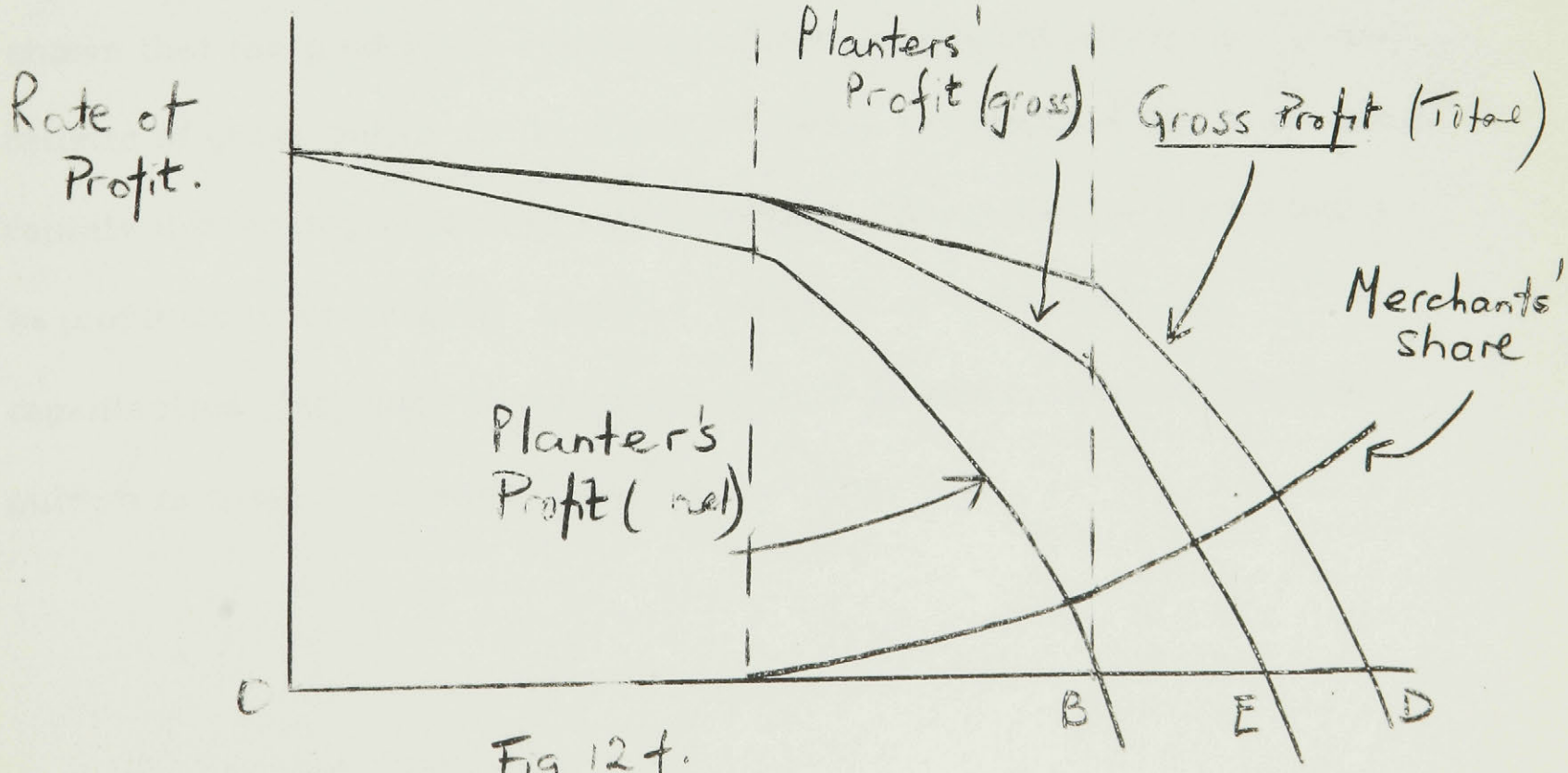


Fig 12 f.

capital stock is taken as growing proportionately with the number of slaves. As in any long-run analysis of this type, there is an implicit irreversibility in the expansion process -- an increase in scale implies the passage of time. The analysis abstracts from short-run fluctuations. It complements the previous short-run analysis of the behaviour of the decision-makers -- planters and merchants.

Physical Productivity and Output of the Staple

The difference between the gross output of the plantation and the output of the staple consists in a number of goods and services which consitutue a claim on the physical resources. These "intermediate" products, W^*_1, W^*_2, T^*_g, and ΔK^* are depicted in Figure 12a. By deducting them from gross plantation output, we arrive at staple output X^*.

We note that most of these claims show a tendency to rise faster than output as the scale of the plantation is increased. Figure 12a shows that the production function we have postulated yields decreasing returns of gross output as the stock of slaves is expanded and even more rapidly decreasing returns of staple output. The causes are to be found in problems of endowment (land), problems of technology and organisation (the structure of intermediate demand), and problems of culture or taste (the structure of final demand).

Endowment

In an "island", as against a "mainland", hinterland, the limit of unimproved land is reached within the span of the model (Assumption v). As good prices bring planters up against their slave-power constraints, and handsome surpluses provide them with abundant liquidity and highly acceptable credit references, they enlarge their capital stock in each successive planning period. As the frontier is approached land which is engrossed at the external margin is of increasingly lower fertility. Furthermore, the physical productivity of all land under staple cultivation decreases by soil exhaustion. Diminishing returns now have to be offset by an increasing flow of improvements.[11] The minimum requirements of improvements (Δ K*) grow steadily.

While there is spare land, clearing and improvements are

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11. $\Delta K = \sum V_{pr}$, the sum over time of the flow of local "undistributed profits" which are necessarily ploughed back into the business both because they are required for efficient production and because, in any case, they cannot be directly realised in metropolitan exchange. We allow these improvements which accrue as a flow of output and income, to be treated as an accretion to productive assets in the long-run. We thus follow the Keynesian procedure of acknowledging the income-generating effect of this component of investment in the short-run while ignoring its capacity-creating effect.

undertaken by slave-power which is idle in the off-season. Eventually, when all virgin land has been engrossed, improvements have to be undertaken in the High Season at the time of replanting. They then constitute a claim on slave-power in their own right: it requires an increasing input of capital (slaves) to maintain a given level of staple output.

So long as improvements are still costless in the sense that they can be undertaken in the off-season, there are constant returns to scale and planters' allocation decisions refer exclusively to combinations of current goods and services on the one hand and staple output on the other. There is here no effective land constraint: an increasing stock of slaves can clear and improve land until all virgin land has been engrossed.

From this point on, spare slave-power available in off-season cannot be utilized without withdrawing land from staple cultivation. (In High Season, of course, there is never spare slave-power). There is now a problem of allocating slave-power between current staple production and improvements which can increase or sustain the capacity to produce the staple in the subsequent crop period. The optimal allocation between $\triangle K^*$ and X^* will depend on the following factors :

the productivity of improvements $\left(\frac{\triangle X^*}{\triangle K^*}\right)$ over the relevant range (marginal productivity of capital); the relationship between current and expected staple prices and import prices; on the level of metropolitan pre-emptive claims which cannot be deferred. It will further depend on the rate of deterioration of land by soil exhaustion and the level of other claims on local resources in the form of domestic and civil services.

T.C

Final and Intermediate Demand

The increase in the number of slaves needed for improvements and the provision of domestic and civil services leads to a rise in the minimum residentiary provisions (W^*_1) required per unit of staple output. What is more, W^*_1 is pushed up by the demand of Senior Staff who probably take a constant proportion of the slave ration on expense a/c. These two tendencies are offset, however, by a shift toward imported sources of supply for rationing, as the operation of the land constraint steers the output mix towards staple cultivation.

There is a rising tendency, too, in the plantation consumption of services. In the beginning, these services are a form of make-work

activity to keep unemployment disguised. However, as the scale of the plantation increases, they become a necessary "security-input" lest the larger number of idle slaves make mischief in the slack seasons. In civil administration, this admits the growth of a bureaucratic interest in managing large numbers of junior staff and leads to a progressive increase in the cost of administrative help (T^*_{g1}) in terms of slave-time diverted. Ultimately, it results in claims on slave-time even during the High Season. More important, in the sector producing domestic-service (W^*_2), some house-slaves develop affective relations with the occupants of the Great Houses and cannot readily be returned to praedial activity. Nor do their offspring all have unequivocal slave status. On both counts, there is need to purchase extra slaves for the production of the staple in the High Season.

At the same time, the growth of this intermediate class of domestic and civil servants exercises contradictory pressures on the costs of military administration (T^*_{g2}), another "input" of security. To the extent that slaves are socialized and acquire prospects of social mobility, the expenditure of slave-power on this account is marked by economies of scale. But only up to a certain point. The diseconomies which accrue beyond that, are augmented as a growing number of "Black Jacobins" are

harboured in the attorney households, gain administrative skill and access to information concerning the state of the trade and the viability of the whole regime, and begin to plot revolution. Thus, the technically-determined composition of intermediate demand and cultural factors in plantation life combine with the poor land endowment of the island hinterlands to increase the gap between total physical plantation output and final output of the staple.

Metropolitan Claims on Profits

In Figure 12 (*f*) are shown pre-emptive claims on planters' profits. These are of three types. Some are fixed in foreign exchange. Others are required to sustain mimimum standards of life for planters in the metropolis. Still others are required to maintain minimum levels of real income for Attorneys. These charges together provide the basis of the prestige and influence of plantation interests in the metropole -- influence which is essential to the industry's marketing position and credit rating.

The claims which are fixed in foreign exchange include the annuities which planters settle on relatives and friends (T_{pll}) and the Rents and Royalties due to lords proprietors (T_Q). The former by their nature, are contracted when profits are high and expectations good. The

latter are determined mostly when the plantations are being established and in any event, before they reach maturity. These pre-emptive claims become an increasing burden when staple prices are falling. This is so, whatever the terms of trade.

Claims (T_{pl2}) which the planters make for their own expenditure rise whenever realised profits are high and tend to remain at the same levels when conditions deteriorate. Planters cannot easily afford to alter their styles of life established in better days.

The Attorneys' claims (T_{Ax}) are secured in the form of staple shipped to the metropole on their own account. In good years the amounts shipped tend to rise. The real value of this item depends on the amounts shipped and the terms of trade. But even when crops are poor, the terms of trade adverse, and the planters' profits reduced, the Attorneys are well-placed to take their cuts. They are able to maintain the real incomes to which they have become accustomed. Thus, the pre-emptive claims on the business take an increasing share of the product as the industry matures on account of the operations of both the planters and the Attorneys. The effect of these consumption functions for plantation interests is that in each successive planning and decision-making period, businesses are confronted

with more restrictive initial conditions and have less flexibility in adjusting to adverse terms of trade. This flexibility is reduced even further by the ability of the merchant-bankers to shift risk to planters by converting their share of venture profits into pre-emptive claims on the plantation.

When expectations and profits are good, the merchants are happy to venture their capital. While the planters procure the slaves, they provide the supplies. Venture Profit is split between them by bargaining. As productivity and prices come down, however, and costs increase, the merchants are in a position to advance their credit on a debenture or mortgage basis. In any case, being the agencies of disposal, they are well placed de facto to secure their own cuts before reaching the bargaining table. To the extent that they do - and the price trend leaves them little choice - the burden of reduced overall profits is borne entirely by the planter. Thus, the T_{p2} curve, too, assumes the rising tendency shown in Figure 12 (*f*).

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In Figure 12 (c), we show that the physical import-ratio rises as the capital stock expands. The main reason for this is that land for

the production of "ackee" becomes progressively scarcer. Heavy fixed metropolitan claims on thinner profits force plantations to sustain high minimum levels of staple output whatever the price. Although provision lands are worked more intensively, required rations cannot be fulfilled without additional supplies of "salt-fish" (M*).

It is true that planters have the option of underfeeding and that they sometimes take this recourse; but precisely because profits are at best fair and expectations even worse, they have to conserve assets. All the more because they tend to operate at increasingly higher ranges of utilization.

Nor is their obligation to import lightened by developments in the Great Houses. Attorney expenses on import account (t_{Arx}) tend to rise with good prices but not to return to previous levels with bad. Moreover, the growing class of domestic servants with access to stores and larders make it difficult to restrict "salt-fish" rations in practice.

Depreciation

The curve of capital consumption $\Delta\left(\frac{n}{2}\right) N^*$ is also shown to rise in Figure 12(f). This derives from the higher rates of utilization

which plantations habitually operate at larger scales.

The Terms of Trade

We have now disaggregated and appraised all the influences which affect requirements for residentiary inputs and for imports including pre-emptive claims. Clearly, trends in productivity, output and real costs place the plantations between pincers which progressively cut away their profits in terms of a physical surplus. One factor only can come to their rescue: better terms of trade. But their ill-fortune in this regard is shown in Figure 12(e). As drawn, the levels of the curves have no significance but their shape reveals that beyond a certain point there are steadily rising prices of "current" imports and slaves and a steeply falling price of the staple.

The Rate of Profit

The trends in physical output, in all real costs and in the terms of trade combine to produce the situation depicted in Figure 12(b). Here we observe that net profit of the average planter becomes zero at point B. However, net returns to the average plantation which include both planter's profit and merchant's earnings (T_{p2}) holds up longer and does

not reach zero level until point C. Beyond that point, cash earnings still accrue but they represent capital consumption. If the planter does not replace any of the capital used up in production, his cash yields continue up to point D. From then on, he can no longer save his business simply by re-allocating resources and changing the composition of his portfolio.

Figure 12(f) presents the above trends in the profit rates. At first total Venture profit (V) is high although falling. It is shared between Planters (V_p) and Merchants (V_t). Then the change in the form of the merchants' participation results in a drastic change in the average rate of planter profit $\left(\frac{V_p}{K}\right)$ although the business remains viable. This trend continues and by the time point E is reached, the planter is able to extract no cash income whatsoever out of the business even with maximum capital consumption.

TABLE "A"

THE CHANGING STATE OF THE TRADE : SECULAR TRENDS

	Foundation Period	Golden Age	Gall & Wormwood	Liquidation Period
1. Returns to Scale	Increasing	Constant	Diminishing	Diminishing rapidly
2. Cost Items per slave : imported				
Salt-fish (m^*)	High	Lower	Higher	Very High
Charges ($t^*_{pl} + t^*_{Q} + t^*_{Ax}$)	Low	High & Rising but tolerable	High & burdensome	Same level but intolerable
3. Cost Items per slave : residentiary				
Ackee (w^*_1)	Low	High	Lower & falling	Very low
Domestic Services (w^*_2)	None	Very low	Higher & rising	Very high
Improvements ($\triangle k^*$)	Low	Low	High	Higher & mounting
Government Services (t^*_g)	High	Lower & falling	Lower & rising	Very high
4. Import Prices				
Goods	High & falling	Lower & steady	Low & rising	High & rising steeply
Slaves	Low	Not so low	High	Very high & mounting
5. Staple Prices & Trends	Very high & rising	High & declining	Lower & dropping	Very low & dropping steeply
6. Fluctuations	Extreme	Extreme	More extreme	Still more extreme
7. Expectations	Excellent & fulfilled	Good & fulfilled	Fair & disappointing	Gloomy
8. Venture Profit per Slave	Very high	High	Low & risky	Negative
9. Mortgage Servicing (t^*_{p2})	None	Low	High, increasing & secure	Very high & mounting but less secure
10. Credit Worthiness	Fair	Good	Poor to Fair	Very Poor
11. Investment in Slaves	Rapid expansion	Steady expansion	Limited expansion	Replacement only - Disinvestment

TABLE "B"

PLANTATION'S ADJUSTMENT POLICY UNDER DIFFERENT INITIAL CONDITIONS

	GOLDEN AGE		GALL & WORMWOOD		LIQUIDATION PERIOD	
	Good Crop	Bad Crop	Good Crop	Bad Crop	Good Crop	Bad Crop
Rationing Policy $r \lessgtr 1$	$r > 1$	Problematic $r \leq 1$	$r \geq 1$	r Problematic	$r = 1$ if possible	$r < 1$ if possible
Work Intensity $\bar{\mu} < \mu < 1$	$\bar{\mu}$	$\mu > \bar{\mu}$	$\mu > \bar{\mu}$	$\mu > \bar{\mu}$	$\mu > \bar{\mu}$	$\mu = 1$
Liquidity Position	Good	Poor	Fair	Very Poor	Fair	Impossible
Encumbrances (Policy)	Many settlements	No settlements	Very few settlements	Suspended payments	Reneaguing	Reneaguing
Investment Intention	Expansion	Replacement	Limited expansion	Disinvestment	Disinvestment	Maximum Conservation

8. STAGES OF MATURITY AND THE EXPANSION PATH

We now revert to the discussion of the expansion path of the industry in Overseas Economy A as shown in Figure 12(b). Why does the industry expand beyond the point of maximum average profit (point A) and even beyond the point of zero average planter profit (point B) onto a scale where planters' average profit is negative? From the standpoint of the economics of growth and development, this is the critical question.

Maturity

At this stage in the argument, we find it convenient to invoke the notion of maturity. We attempt a more schematic analysis of the changing conditions of the trade than proved possible in the previous section.

Changing State of the Trade

It can be seen that the curves in Figure 12 are consistent with the indicators of maturation summarised in Tables A and B. Table A relates to the industry at the level of the entire Overseas Economy A. It identifies secular trends in physical productivity, real costs, prices, expectations, fluctuations, profits, credit-worthiness, investment and disinvestment.

Table B summarises the changing responses by the single plantation to the altered conditions created by these trends. We identify policies in regard to feeding, the rate of utilization of slave-time, encumbrances and investment intentions. We distinguish behaviour associated with good crops from behaviour associated with bad crops. We choose crops rather than prices because it is an industry whose fortunes depend almost as much on factors such as the degree of political stability and the incidence of natural disasters as on "purely economic" conditions. The "quality" of the crop subsumes all of these variables and is consistent with the "random" variable in our production function.

The Golden Age

Growth without Development

Ignoring the brief Foundation Period, we postulate an abundance of land so that residentiary claims on resources are low and there is constant productivity. Hinterlands A have a de facto monopoly of the market in the Top Metropole and free access to the re-export market as well. The high staple prices decline only gently. Further, the Top Metropole is without peer. The challenge from rivals is largely ineffective. Trading is safer, more regular and on a larger scale. Sources of supply are easier and import prices

come down below the levels of the speculative days when the Hinterlands were still being founded. Although slave prices are rising, the terms of trade look with favour on the plantations.

By the same token, expectations are good and in general fulfilled. Profits are high, risk not extensive by the standards of the trade and credit if never easy, is far less tight than at the outset - credit-worthiness, at any rate, is sound. There is little need for mortgaging. Expansion is steady. Most of the time - not always, for at its best the business is subject to violent fluctuations - the liquidity position of the firms is good. During bad crops, slaves are worked hard and underfed. But there are many good crops too, and with provisions cheap, feeding is adequate. Besides, the stock is expanded so that work intensity is more or less ordinary.

Golden Age indeed! But it is these same felicitous conditions of trading which carry the seeds of their own destruction. As we have seen, the expansion of the system exhausts the land, brings prices down and costs up. Moreover, new terrain attached to other metropoles is encouraged by high profitability to enter the re-export market with floods of cheaper supplies.

It will be remembered that we have postulated a coincidence of these developments: land shortage and stiff competition. Hence, in Figure 12(b), the point of maximum average profit in the industry (Point A) has been shown to mark the threshold of Gall and Wormwood. Suddenly, the industry matures and planters are confronted with a change of fortune.

Gall and Wormwood

Vulnerability

The twin developments of saturated land and flooded markets precipitate Overseas Economy A into maturity. Rising residentiary claims on productive resources, increasing demand for "salt-fish" as "ackee" acreage is reduced, higher import prices as the rivalry with emergent metropoles disturb supply lines, and the growing burden of the charges previously fixed in foreign exchange diminish profits from all sides. Meanwhile slave prices continue to reduce the re-investment value of the diminished surplus. In the context, average liquidity ratios are lowered, credit references are devalued and expectations perforce decline, though not without a lag, so abrupt is the change of fate. Memories of the Golden Age die hard.

Structural Inflexibility

Expansionist adjustments being out of the question, it is time to innovate or to consider alternative investments. In Schumpeterian terms, planters may be expected to move towards cheapter mixes of intermediate inputs, more efficient techniques, new products, or superior marketing arrangements. On our assumptions, however, all these intrinsic adjustments are ruled out.

Structurally, the total institution is specific to the staple. The routines of plantation life and work, the skills of slaves, and the character of improvements, and even of the Government are highly specialised. In Polanyi's terms, the economic process is circumscribed by the way in which it is "embedded" in the polity and the social system. To innovate is to uproot a whole complex of society and to re-institutionalise the entire economy. The social costs apart, that would require extensive capitals for re-tooling and re-training.

Besides, the planters' influence in the Top Metropole is specific to their commodity and to their locus within Overseas Economy A. For all the promise of better profits, to shift to other products or to other metropolitan

systems is not without risks. Nor can they increase processing of the staple so as to add greater value in the Hinterland. The locus is also specific to the degree of elaboration - the Muscovado Bias.

Functional Dependence

What is more, there is no reisdentiary sector for which the plantations could conceivably produce without too much upheaval. It is an island hinterland. Deprived of land, the Maroon Sector is marginal and underdeveloped. Besides, having been founded as an offshoot of the plantations, it would more than likely have a high import-propensity given a chance to enter the market. In any case, the Metropolitan Exchange Standard eliminates the possibility of independent monetary policy and deficit-financing to activate any hypothetically spare productive resources. Mere law and order Government bars developmental fiscal policy.

No least, the inescapable factor income claims are specific to the existing business. To meet their commitments planters have no option but to export. Indeed, with worsening terms of trade, they must export more in order to discharge a constant claim expressed in metropolitan exchange. By a process of cumulative causation this only specialized them further, drives

the staple onto every plot of ground, raising costs and augmenting the import bill in a vicious circle.

In other words, planter entrepreneurship in the conditions of the model, is inflexible. He cannot move his assets out of the business. Not so the merchant. His locus of business is the metropole, his stock-in-trade is provisions, he is ever liquid. He disposes of the product and can secure his cut whoever falls short. He has one eye on the whole industry and knows what to expect from the developments in the trade. When the vulnerability of the business is increased and profitability withers in a single plantation, hinterland or Overseas Economy, he is in a position to switch to greener pasture. And he does.

In the first place, as we have anticipated, he smoothly shifts the composition of his portfolio in saturated and mature business. If in the Golden Age he held risk-assets, now he shunts to mortgage and debenture on current account, permitting capitalization of debt only after he has milked fully out of earnings. Thus he establishes a hegemony over planter property, after he has already retrieved the bulk of his own capital. Here is the main mechanism which types the locuses of Plantation Economy as Hinterlands of Exploitation. Thus, in Figure 12(b), we have seen that

when the merchants' pre-emptions (T_{p2}) are included in the total return of the industry, viability is maintained up to point C. Point B is a position of zero planter profit and Point C a position of negative planter profit, only because of the merchant shift in the composition of his capital.

Goveia Syndrome

Why then do the planters persevere? One answer is that in order to get their capital out, they must stay in. A Goveia Syndrome! There is little or no opportunity of remunerative sale now that expectations are unencouraging not to mention the complication of mortgages. In any case, that is not an option for the industry. Hedged in on all sides, the only way out is to catch the highs. Planters now speculate on the fluctuations which are endemic in the trade. This is when the planning period becomes the cycle.

For the single planter, the difficulty is how to muddle through depressions. The trick is to have abundant capacity at a time when weather conditions, loopholes through shipping in enemy lines, and general political conditions all combine to provide a favourable opening and, above all, to

catch the upswing before prices are choked off by the over-response which is sure to result from identical plays by many plantations. It is a matter of dog-eat-dog and survival of the fittest.

As indicated in Table B, and discussed earlier, this is when policies toward rationing, utilization of slave-time, investment and disinvestment become problematic. Hard-pressed, the planters ordinarily work the slaves at high levels of intensity. In the lows they have to consume capital to secure some liquidity and avoid the merchant's grasp. At fair prices they conserve by feeding if expectations are normal. If, however, expectations are momentarily optimistic, they expand a little in preparation for the coming high. Clearly, these policies are possible only because depreciation is incalculable and susceptible of deferment. In Figure 12(b), Point B remains tenable precisely on this account.

The Last Trump

It is obvious that the planters would not hope to survive by speculative planting alone. They know long-run demand to be growing only slowly, not least because war and the instability of the trade give an impetus to the development of substitutes for their staple. Equally, they are aware that taste changes are at best problematic, and that against this

background, additional supply guarantees further degeneration of the business. A real solution can only be found in some permanent amelioration of the conditions of production and trade. Why not draw on the influence acquired during the Golden Age to persuade Top Metropolitan Government to de-activate the new terrain in emergent metropolitan systems? This, however, is not an enterprise whose feasibility is entirely beyond query, at least, not immediately. The planters must, therefore, also explore solutions which are more expeditious and more certain, if more temporary.

Imperial Preference

What better than to invoke the reserve rule? Make Imperial Preference operative and transform the liability of Inter-Caetera (Assumption iii) into an asset. In Figure 13, we show the rise in Net Product resulting from the reduction of cost-margins in the form of duties paid to Top Metropolitan Government. Effective with their influence the planters win price supports.

Their luck in, some of the planters salvage their property from the merchants and take the opportunity to exit. Others assume that nothing succeeds like success. Let us here adopt the same assumption and concede

them a double fortune.

Ceded Lands

Allow that the Top Metropole does manage to alienate some new terrain from rivals. This dislocates supply in the emergent hinterlands concerned and, for a while, further improves the prospects of the trade in Overseas Economy A. But advancing to stage-centre are the merchants.

Vigilant, informed, liquid and flexible as noted, they at once perceive the investment opportunity waiting to be exploited in the ceded lands, ready for a Golden Age of their own. Once military and political conditions return to normal, capital is rapidly advanced and soon output begins to flow. Planters respond by encouraging Top Metropolitan Government to restore some of the ceded lands. But, following the decline of their profits and their patronage in the metropole, their influence is now on the wane and they succeed only in part. Figure 13 also shows the position of the industry on the entry of the retained plantations.

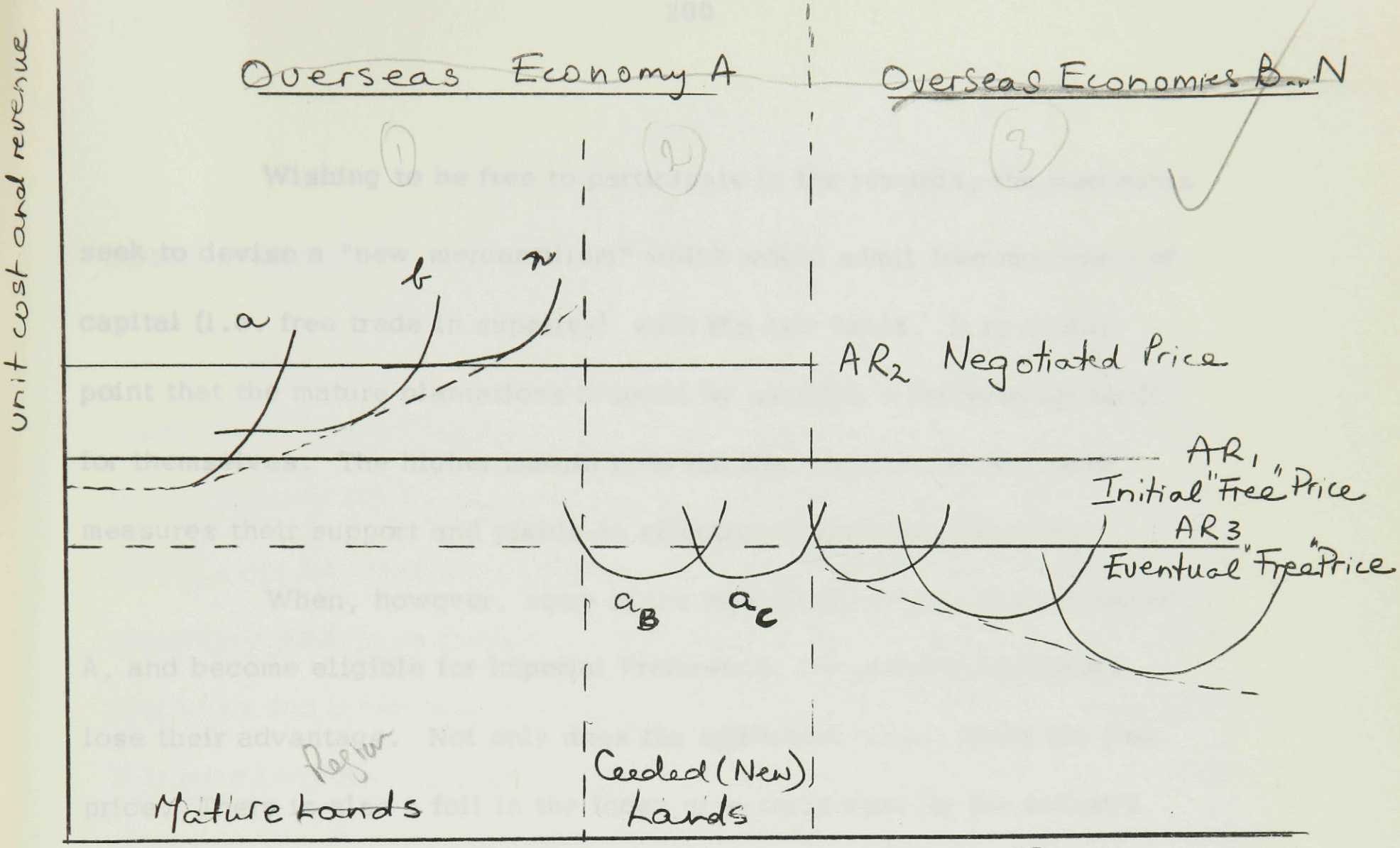
Overseas Economy A
Overseas Economies B...N
unit cost and revenue
a
b
n
AR_2 Negotiated Price
AR_1 Initial "Free" Price
AR3 Eventual "Free" Price
a_B
a_C
Ceeded (New) Lands
Mature Lands
Industry Output

FIGURE 13

Wishing to be free to participate in the rewards, the merchants seek to devise a "new mercantilism" which would admit free movement of capital (i.e. free trade in supplies) with the new lands. It is at this point that the mature plantations respond by securing a preferential tariff for themselves. The higher margin between that and the general tariff measures their support and yields an effective Negotiated Price AR_2.

When, however, some of the new lands are ceded to Metropole A, and become eligible for Imperial Preference, the mature plantations lose their advantage. Not only does the additional output lower the free price. There is also a fall in the index of average cost for the industry by which the efficiency of all producers, in Overseas Economy A is judged. Now for a reasonably efficient mature producer to earn a normal profit, the margin between the preferential and the general tariff has to be increased.

Negotiated Prices

What is clear is that the existence of price supports entails super-normal profits for the new producers and encourages expansion which in turn induces more steeply falling price trends. Thus, to sustain normal profits even for reasonably efficient mature producers, requires continuous upward movements in supports. But equally clearly, there is a limit to this since the preference is a highly visible cost to metropolitan consumers. If it were removed, supplies would be more cheaply available from the new producers, both inside and outside Overseas Economy A. Besides, some merchants insist now on free trade in supplies with Emergent Overseas Economies. Thus, eventually, when the supports become an intolerable burden, there is sufficient new influence on Top Metropolitan Government to have them swept away. Their last trump covered by the merchants' ace, the planters are left now to face the situation without a shred of hope.

The Liquidation Period

Now output in the mature hinterlands no longer responds in any continuous fashion to price changes. The industry in a large part of Overseas Economy A takes on the character of a lottery in earnest. Prices are now wholly unremunerative, costs insupportable. In Figure 12(b), the industry operates to the right of position C where average profit is negative and planters cannot even meet encumbrances (T_{pl}) let alone Depreciation (D). They are not even able to meet annuities now and begin to reneague. New hinterlands do enjoy profits but are too small in relation to the whole economy to pull the average above zero.

Grants and Soft Loans

Expectations are so hopeless that the only option is to cut losses and quit. The only policy consideration is how to maximise liquidity at the time of exit. In practice this means appealing to Top Metropolitan Government for grants and soft loans to prepare for withdrawal. Specifically, now more than ever, planters gamble for highs during which they can mine their assets by employing the highest possible rates of utilization of slave-time and shift from slave-power into cash.

This further means using metropolitan aid (substitute T_g) for minimal conservation of slaves during the depressions, and for preservation of political stability. This policy sustains imports (M) at a certain level as is shown in Figure 12(b). Planters' gamble but merchants' game! - with "casa-money" gilt-edged.

The merchants' share is now pre-empted by mounting interest rates and the funding of debt at progressively shortening intervals. Among planters, it is a game of zero sum, as it were. If a few of them are lucky with the fluctuations, the majority only sink more deeply into debt. The much hoped-for withdrawal is never effected and the burden of grants-in-aid by Top Metropolitan Government, like the cost of preferences to the metropolitan consumer, eventually reaches the level where it is no longer politically feasible.

The Ultimate Adjustment

At that point the aid for rations and for military expenditures is suspended. The slaves are left unfed and law and order breaks down. Now the next round is at hand. A "Williams' Adjustment" is required.

The alternatives are clear. Either the metropolitan government must intervene with overwhelming military and economic power, or the "niggers", starving and underfed, will rise! However, it is beyond the scope of this model to determine which is the likelier outcome.

Yet, one final point may be noted. If the Top Metropolitan Government does intervene to rescue the system by paying the planters off in return for the emancipation of their slaves, the basic problem may remain unsolved. The economy may well be re-institutionalized on very much traditional terms. For the state of mortgage debt is such that the merchants can call the tune to the very end.