

The Urgent Empire Portugal Between 1475 and 1525

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Abstract

After a survey of the natural resources in the different areas of the Portuguese territory, the effects of the overseas expansion on these sectors were studied. An excessive demand was noted, given the scale of the available resources, together with the general incapacity to rapidly replace them. The serious involvement of all social classes in the realm's principal political projects was demonstrated, as well as the existence of leaderships and the financial and technical resources necessary for ensuring Portuguese primacy in European expansion. Urgency justified the over-exploitation of resources and the heavy tax burden, but it also compromised the country's future, with its small metropolitan space proving incapable of sustaining a lengthy revitalization effort, hence the title of this paper.

Keywords

Portuguese economic history, Portuguese crafts and industry, Portuguese production, Portuguese natural resources

Resumo

Depois de proceder ao levantamento de todos os recursos nos diferentes espaços portugueses, conferem-se os reflexos da expansão planetária nos mesmos. Nota-se uma procura excessiva para a dimensão dos recursos disponíveis e a incapacidade da sua rápida substituição. Demonstra-se um sério empenho de todas as camadas sociais nos principais projectos do reino e a existência de lideranças, meios financeiros e técnicos para a primazia na expansão europeia. A urgência justificava a sobreexploração e fiscalidade agravada, mas comprometia o futuro do país, com um espaço metropolitano pequeno, incapaz de esforço longo de revitalização, daí o título.

Palavras-chaves

Indústria, espaço, recurso, produto, procura

I recently published a two-volume study, *Portugal. O Império Urgente*, which was the result of my Ph.D. thesis (Pereira, 2003). My work considered the manufacturing sector of the Portuguese economy in the period 1475-1525, a subject that had previously not been given an appropriate treatment. This much-needed fresh approach had become justified after both an analysis of the different manufacturing activities and a survey of formidable piles of documents had

been undertaken by Sousa Viterbo, an effort in which he was accompanied by Anselmo Braamcamp Freire, and I continued to pay attention to the records and inventories of the assets of diverse institutions and personalities, as well as to other documentation, with the aim of covering the whole country. Such a study seemed attractive since, at the time, there were transformations taking place that were decisive for the evolution of humankind and of Portugal in particular. Some of the changes included the increasing development of urban life, constituting a revolution that took place in the late 15th and early 16th century, as a result of which, sooner or later, the economies of all western countries would develop from an urban to a national phase and from autarky to specialization. The further consequence of this was the appearance of certain capitalist, commercial and industrial concentrations that contributed towards a more rapid development in consumption and led to an improvement in the quality of life of ever wider social strata.

During this period, there was undoubtedly progress made in agricultural productivity, with the development of speculative crops, and in some manufacturing industries, namely textiles, mining and quarrying, and metallurgy. It has also already been demonstrated that, at the time, changes were brought about, albeit more slowly, in people's ways of thinking, through the appearance of new social, economic and religious values that were significantly different from the preceding ones. In particular, I considered it important to consider the new aspects that had been introduced into the area of manufacturing and which were characterized by large-scale investments of fixed capital and an intensive use of labor. Such investments were caused by the pressure of increased demand, resulting from the greater population growth, the resurgence of large metropolises, the prosperity of some social strata and the establishment of the mercantilist state, both within and beyond national borders. Although this is more difficult to account for, an assessment should also be made of the production of small family businesses, i.e. simple workshops, especially when these were operating within larger markets through the agency of merchant-financiers from a royal factory or trading station, or as a result of their proximity to important fairs or markets. In this way, the group of activities I investigated was formed from the so-called primary industries, which processed raw materials said to be strategic, in order to respond to the basic needs and protection of the population: food, clothing, housing and metallurgy. Special attention was paid to those industries arising either from national forms of economic specialization or from state projects: in the former case, salt extraction, food preservation, cloth-fuling, tanneries and sawmills; and, in the latter case, metallurgy, smelting, shipbuilding and biscuit-making. The insistence on this last group of industries makes it possible to contradict J. Vicens Vives, who claims that the transition to the modern type of monarchy began in Western Europe with the great naval expeditions undertaken by the Emperor Charles V against the Turks in 1535 (Vicens Vives, 1984: 213). In fact, the arguments advanced make it possible to bring that date forward by a few decades, if not to the reign of the "perfect Prince" (Dom João II), at least to the reign of Dom Manuel I. The need to arm more men, to accumulate weapons, supplies and money in a certain place, and the prevalence of specific technical and financial requirements imposed by the administration upon the more cumbersome and static mediaeval inheritance had already been widely noted in the case of these two Portuguese kings. In their governmental practices, it is possible to note the crown's intervention in all sectors of the economy, in agriculture, industry, trade and finance, in society in general, in welfare, culture and the tutelage of administrative and religious institutions. More generally, the early modern era came into being simultaneous to the loss of importance of the Mediterranean world and the discovery of the splendor of the Atlantic world, to which Portugal acted as a gateway.

This rough outline of the geography of 16th-century Portuguese production causes us to move up another step to the interpretative level. In fact, more than simply describing and justifying the past, it is the historian's role to clarify and explain the present. In mapping the distribution of the country's manufacturing capacity, the regions that are shown are those that had a tradition of manufacturing and an industrial culture, capable of forming a local productive system that was "coherent, integrated and diversified", together with regions where there was a single industry, without the capacity to change direction and "highly dependent on the market of one product and the evolution of a certain technology" (Reis, 1992: 91). Thus, particular regional situations can be observed, showing the poles of development and the industries that acted as driving forces, the regions' particular ways of life, namely their means of production, and urban and rural characteristics; and consideration can also be made of costs, energy and transport. Besides the description thus provided of the means and resources available, agents and paths of development can also be identified.

The historiographical tradition that is open to the contributions of the social sciences dictates that the production process should be studied with the instruments provided by Anthropology and Economics: with the aid of the former, the specific forms of the culture of production and its symbolic expression are revealed; with the latter, the overall movements are revealed, with attention being paid to savings, investment, consumption and production in combination with social reproduction. Ambitiously, I have positioned myself on the path followed by Braudel, at the crossroads where Geography intersects with History, with the aim of studying the movements of Man and his implantations, his social relations and his production. My attempt to demonstrate Portuguese productive capacity during the period in question is therefore justified, for in the meantime two other maritime cities similar to Lisbon had become industrialized: Venice and London.

The investigation of events occurring at the start or end of the process was not set up as an immediate objective, although there was no shortage of such events. In fact, in this area, in order to gain an overall view, it seemed preferable to accompany the progress of economic complexes in Portuguese territory. However, at the beginning of the period proposed for this study, the king's *dirigisme* of all economic movements in the realm and the empire, with its inevitable social, political, administrative and productive implications, presupposed an early option for mercantilism. The subjection of the transactions of foreign agents operating within the realm to the control of the Crown, the mobilization of resources for royal projects, the attention consequently paid to the accounting of these resources and the investments made in the fleets, were all measures that derived from such an option. Seen from another perspective, attention is drawn to the successive years of the cereal crisis, 1472-1478 (Marques, 1978: 222 and 275-277). If, even so, my intention were to highlight any one particular event, I would point to the bankruptcy of the policy of Portuguese peninsular supremacy over Castile followed by Dom Afonso V and clearly manifested in the Battle of Toro on 2 March, 1476. The end of this process was marked by the marriage between Dom João III and Princess Catarina of Spain in 1525 or by the agreement signed over the Moluccas, The Treaty of Saragossa, signed in 1529, occurring in the same decade as the one in which Portugal reached its apogee and its ships set sail for the most remote corners of the earth.

The whole period analyzed was marked by the arrival of great volumes of gold in the realm, roughly 700 kilograms per year between 1480 and 1520, according to Pierre Vilar and V. M. Godinho, and a rise in prices in the second quarter of the same period (Vilar, 1974: 92 and 109). As far as the size of the geographical space considered is concerned, due to the knowledge of

other studies covering the whole of the Portuguese territory for later periods, it was decided to choose the same space for the period from the late 15th to the early 16th century, confirming the existence of a national economic space with longstanding industrial traditions. It is therefore accepted that, in the period under analysis, there was already a national economy that had superimposed itself on the regional and local economies and acted as a catalyst for them through its central driving force: Lisbon.

It seems to have generally been proved that the last quarter of the 15th century in Portugal began with some very cold, wet years and that the decade beginning in 1483 was marked by particularly harsh weather throughout Europe. During these years, the inland regions of the country were covered by extensive snowfalls, reaching well into the south of Portugal, as happened, for example, in Évora in 1490. However, from the end of the 15th century until the mid-16th century, Portugal enjoyed a favorable period of weather. Under the influence of a hot phase, 1495-1555, Europe only experienced one extremely harsh winter during this period, that of 1505-1506, which was to leave its negative marks on the Iberian peninsula with the plague that affected several important cities: Évora, Lisbon, Porto and Seville. Less cruel, but still very wet, were the winters of 1502-1503 and 1519-1520. The Guadiana valley was hit by a drought in 1513, as were other areas of the country in 1515 and 1516. Mafra, Óbidos, Santarém and certainly a large part of the country were affected by drought and famine in 1521-1522. However, the link between bad years in climatic terms and the spread of epidemics cannot always be established. It is not known whether the climatic conditions lay at the origin of the epidemics of 1519 and 1525, in Lisbon, and 1523, in Palmela. Unlike 1497, the years 1498, 1514 and 1515 were favorable ones, whilst the rest can be considered normal.

There is a shortage of information regarding the demographic size of Portugal at the beginning of the early modern era. Testimonies from the time point to an apparent lack of people: difficulties in occupying the islands; the settlement of some of the islands by foreigners; and the development of slave markets. However, the first decades of the 16th century were a time of expansion and allowed for the peopling of different Portuguese areas. Besides the data provided by the first attempts to enumerate the population, carried out between 1527 and 1532, other more limited data has since been discovered about both previous and later dates. From the information thus gathered, it can be concluded that, at the end of the period, there were roughly 1,200,000 inhabitants living in the country. Surveying Portugal as a whole, it has proved possible to document a positive demographic evolution for the country, most notably in the Minho and even for some regions of Trás-os-Montes. The Beira province achieved a remarkable rate of growth in the first three decades of the 16th century, covering the length and breadth of its area. This growth rate was slower in the rural areas of the Estremadura province, by virtue of the attractive pull that the capital city exerted over this district. The Alentejo also grew over this period, albeit with a lower rate of growth than the different regions in the north of the country. Amongst the most densely populated European cities, Lisbon stood out as the place of residence of investing elites, nobles and plebeians.

Throughout the late 15th century and the first few decades of the 16th century, the Portuguese crown acted as the principal agent of the imperial economy through its main factories in Mina and Bruges/Antwerp and the trading houses set up in Lisbon: the Casa de Ceuta, Casa da Guiné, Casa da Mina and Casa da Índia. The Recebedoria da Especiaria da Casa da Índia (the spice tax collector's office of the House of India) and the Tesouraria das Rendas do Reino (the Treasury of the Rents of the Realm), acting as intermediaries between income and expenditure, settled the state's accounts. Throughout the period, the accountants of the Royal Household acted

as important centers for financial operations, receiving deposits of the rents from many different institutions and paying pensions, settlement relief and salaries and making purchases. Their respective financial assets and other sources of remuneration, such as sugar and pepper, substantially increased at the turn of the 15th to the 16th century, making it possible to effect payments, as was convenient, all over the realm, through customs houses, exchequers, ports, stores, Lisbon trading houses and tax collection offices. The greatest amounts of money were not allocated to the industrial sphere, but instead to the structures involved in representation and consumption. Nonetheless, one should not overlook the lucrative commercial investments made by those who were responsible for these institutions. The creation of genuine industrial estates and chains of production in the suburbs of the main urban centers depended greatly upon such investment. The dockyards of Porto, Aveiro, Foz do Mondego, Pederneira, Peniche and Lisbon, where monarchical intervention was coupled with the investment of private citizens, built up local systems of production based on both national and international financial investments. In the same way, the armories of Santarém, Lisbon and Évora, the Casa da Pólvora (gunpowder store) and the Fornos da Porta da Cruz (biscuit-making ovens) in Lisbon, and the windmills and ovens of Vale do Zebro mobilized and dealt with large sums of money.

The great merchants-financiers, particularly those originating from Italian cities, controlled the circulation of the principal Portuguese products. They were represented by their family relatives at the Portuguese *entrepôts*: Lisbon, Funchal, Évora etc. By advancing money on the settlement relief or pensions of nobles and senior officials, they were able to intervene in the industrial sphere. The trade in salt, wine, cereals and sugar depended greatly upon them. Participation in the fleets coming from India gave them access to other more profitable goods, namely spices, after some of them had already made a fortune out of the slave trade. Capable of requesting the minting of gold and silver, they could also make payments in bills of exchange that were to be discounted in Lisbon or abroad. There is no evidence of their involvement in the formation of farming businesses or in the installation of equipment, except occasionally through their involvement in the manufacturing and containerization of the products that they traded in. Here, with relative ease, it was the ecclesiastical institutions that intervened, as well as the members of the nobility, at the highest levels, following the example set by the king. The visits of the leaders of the Military Orders to all the commanderies of the realm and the inventories made of ecclesiastical property during the period in question required investment in the whole of the housing stock, storage and manufacturing facilities, using quality materials. The demand for income, avoiding usury, encouraged the holders of capital to invest in the purchase of property and in subletting. The common practice was for the money-lender to purchase property that he would then leave in the hands of the seller, with the latter thereby becoming a tenant under lease and providing a return on the invested capital at a rate of between 5% and 7% per year. The financing of the transport of products, generally in the form of a limited partnership, led to the involvement of other social strata, besides merchants.

Also in the urban centers, and particularly in the largest cities, Lisbon, Porto and Coimbra, the town councils revealed a solid capacity in the allocation of their revenue: rents from their own property; taxes on commercial activity, and police fines. The increase in their revenue seems to have been particularly evident in the first few years of the 16th century. The building of town halls of great nobility in the main towns and cities of the realm, Lisbon, Porto, Tavira etc., testifies to this fruitful investment of resources. There was also tremendous municipal investment to be noted early on in this period in the building of roads, the supply of water (through a system

of pipes and public fountains), the placement of clocks on church towers, and the provision of sanitation facilities.

Of another kind, but also much larger, due to the greater income available, were the investments made in the religious spaces of the urban world, by bishops and particularly by the chapters of cathedrals. However, the absence of some heads of the church in Rome meant that a great deal of money was drained off and sent abroad. All around the country, various religious institutions claimed a monopoly of the revenue from worship. Thus, just like the court and the palaces of certain figures from the high nobility, ecclesiastical establishments were transformed into centers of relative consumption, obtaining goods in return for the granting of privileges, perhaps because they frequently housed figures from the high nobility. On a smaller scale, in rural areas, financial investment almost all fell to the brotherhoods and the chapels set up in churches. The churches accumulated assets through mortgages, but also through alms and money left to them in wills. Unpaid debts continued to cause problems. In fact, in certain cases, difficulties were to be noted in the payments made in cash. It seems that hoarding at the above-mentioned institutions, as well as amongst the urban elites, almost always contributed to deflation. The recovery of human resources through the release of prisoners and the purchase of slaves, besides the ethical and religious dimensions thereof, caused the same economic effect. The building of many large ecclesiastical buildings, all over the realm and overseas, with the involvement of the respective patrons, who were always responsible for the chancels, also drained off large sums of money from the common people, who were responsible for the main bodies of the churches. Thus, the clearly documented increase in demand took place with a serious concern for the financial resources that were spent on this.

The whole period can be considered one of monetary stability. The *real* became the unit of account after the reform of 1435-36, being made of silver until 1511 and later of copper. The least valuable coin in the monetary system was the *ceitil*, which, after 1485, corresponded to one sixth of the value of the *real*. The Portuguese currency included a gold coin of international prestige, the *cruzado*, and another one of great intrinsic value, the *português*. The former was worth 390 *reais* and the latter 3900 *reais* during the period in question. It was more difficult to find equivalents in the use of silver coins. However, after 1485, two important coins began to circulate made of this metal: the *vintém* (worth 20 rs.) and the *meio vintém* (10 rs.). Another coin, which gained some space for itself, was the *tostão*, originally minted in both gold and silver, with a value of roughly one quarter of a *cruzado* or five *vinténs*. The concern with the movement abroad of good coins and the entry into the country of bad coins led the kings to introduce successive reforms into the monetary system.

At the end of the 15th century, the costs of minting gold and silver coins were high in Portugal: 4 *reais* per *cruzado*. In view of the protests, in 1498 Dom Manuel I fixed the prices and established a suitable set of rules for the Lisbon mint, issuing new coining dies, appointing new officers, assayers and examiners, and making it compulsory for the longest-serving officers to retire. The crown's eminent overseeing of the officers of the Mint guaranteed them privileges against the interference of local authorities and ensured the quality of the services provided there even to the private individuals who requested the minting of silver and gold coins. The shortage of silver in the last decade of the 15th century, which called for the attribution of tax exemptions and the mortgaging of some of the main products of the realm, namely cork and leather, to foreign exporters through the granting of monopolies, seems to have been overcome during the reign of Dom Manuel I. Each year, roughly 30 000 marks in weight of silver were minted at the Lisbon Mint. In 1515, the gold of private citizens amounted to more than 414 marks, from which 26

831 *cruzados* were minted. At the end of the first decade of the 16th century, Lisbon continued to follow the Florentine rules on the assaying, purification and fineness of gold coins. In the second half of the 15th century, the Porto Mint continued to be in operation and, in the first years of the 16th century, a substantial quantity of copper coins (*ceitis*) were minted there, although these were rarely accepted in payments. However, the processing of this metal into coins, carried out in the three main cities of the realm, Lisbon, Évora and Porto, was never conducted on a large scale. It was more common for small payments to be effected in silver. Even the treasurers of the Casa da Mina and the Casa da Índia resorted to the Lisbon Mint to exchange gold for silver. The *tostão* was used in the payment of medium-sized amounts in the rural world. The agents of certain high-ranking nobles agreed upon the replacement of *cruzados* with *vinténs*. Silver cups were also used as payment for business deals throughout the realm. In Safim, the local population preferred to receive payments in silver. In Cape Verde, goatskins were used as a form of remuneration. In the same way, salaries in Santa Cruz were also complemented with animal hides. Further south, in São Tomé, payments were made with slaves. In Sofala, bracelets made of brass replaced the coins made of noble metal. Primary liquidity made it possible for the great merchants to make advances to the crown and to the houses of the high-ranking nobility, guaranteed by the settlement relief paid in market products at the exchequers and factories of the realm and the islands. Madeiran sugar was particularly sought after. Contracts made in pepper were also commonplace.

Besides the coinable metals, all the materials linked with shipbuilding and the military industry, as well as the components of the staple diet, bread and meat, were considered as raw materials or already semi-products or strategic products, with restrictions being imposed upon their export from the realm. The *Ordenações Manuelinas* (the royal law or Ordinances of Dom Manuel I) reinforced, in this regard, the *Ordenações Afonsinas* (the Ordinances of Dom Afonso V), although they presented new arguments. Such legislation afforded the commercial monopoly over these products to the king, who persecuted all individual initiatives. The centralization of the management of mercantile transactions also took place in neighboring Spain, creating serious difficulties for the supply of certain raw materials that were needed in the Portuguese realm, namely saltpeter and iron.

Obviously, the production chain of most goods was based on agriculture. The equipment was increased with the plowing of what had previously been wasteland and the digging of ditches in marshy areas. The empire's roads, population centers and strategic bases were generally located in those areas where the availability of energy resources intersected with agricultural land. In the suburbs, the forces of specialization in the rural environment were faced with the multiple responses required by the cities, so that entrepôts were formed there for the transfer of people, goods and technology. These areas, offering a privileged kind of intervention to the newly emerging personalities, benefited from large-scale investment, with resources there being committed to industry and leisure. As the cities began to spread, some already installed production facilities withstood these changes, while others were moved to the country, especially to places where there was an abundance of water and wood. The pollution that was caused close to residential areas made landlords alert to the spread of epidemics, particularly at critical periods. Short-term leases, the whims of the owners of facilities and equipment, as well as acts of violence, dictated the need for change.

Long processes of accumulation and technical consolidation in production equipment and professional workers were noted, despite periods of stagnation or dramatic situations of disaggregation. The former accumulation processes were almost always based on the existence of one product, such as salt, linen, wool and metal, and the availability of energy resources; the latter

periods resulted from the effects of natural crises, and the failure of demand to adapt to the situation, the collapse of chains of production and the break-up of the industrial infrastructure. The quality and size of the market called for specialization and guaranteed survival, even at critical moments. The greater concentration of industry in some regions was due to a variety of reasons: a technical culture that had been built up over centuries, centered upon taking advantage of energy resources, through mills, particularly tidal mills in Aveiro, in the lower Mondego valley, the Tagus and Sado valleys and the Algarve's Sotavento or eastern region; the availability of raw materials, such as the wood of pine trees in the Setúbal peninsula, iron in Tomar and Torre de Moncorvo, linen and wool in the mountainous regions, along the valley of the River Mondego and the tributaries of the River Douro; interactions and catalyzing complementarities, for example, salt, cereals, biscuits, olive-oil, wine, meat and animal skins and hides; as well as the ease with which goods could be stored and distributed and the proximity of large population centers with dynamic elites.

The volume of tax revenue confirms the densities of local manufacturing structures. The many tax-receiving bodies in Lisbon attained annual quantities that were incomparable throughout the realm, a situation which can be explained by the manufacturing capacity and consumption levels to be found there, but also by the rapid turnover of businesses and the high price of toll rates. However, the revenue of the exchequer of the city of Guarda greatly exceeded that of identical districts: Porto, Guimarães, Ponte de Lima, Coimbra, Estremoz, Setúbal and Torre de Moncorvo, in the same way that the wealth of the productive capacity in the Beira-Serra region was equally confirmed in demographic terms. However, in Porto, many of the rents belonged to the city's chief landlord, the respective bishop, and were exempt from the payment of royal taxes. In effect, in the northern capital of Portugal, the high revenue resulting from the pension of the notaries public was without comparison in the rest of the country. In the Algarve, the taxes levied on the fishing of tuna reached high values. The undertaking of royal building works was rarely reflected in fiscal gains.

The increase in revenue seems to have become fairly generalized from the middle of the second decade of the 16th century onwards. However, in some cases, this increase began earlier, immediately after the serious epidemic of 1505-1507. In other cases, such as Setúbal, it had started from the very beginning of the 16th century, since the epidemic had not been felt there and the action of the Master of the Order of Santiago had provided incentives for this, despite the later period of stagnation. The increase was to be explained by the demographic growth that was recorded, the stricter tax system applied after the revision of the charters and the updating of leases, the increased productivity and also the rising prices and the devaluation of the currency.

In Lisbon, inflation running at roughly 15%, namely in the price of meat, was reflected in the increase in tax revenue from 1509 onwards. Three years later, the sharp rise of 25% in the price of both mutton and beef explains the further rise in revenues. The administrative control of prices throughout the realm at the same date resulted in an upward movement. The downside of all this was the negative effect that high prices had on the less fortunate. Such effects were widely felt in urban spaces, especially in Lisbon, Funchal and the towns of the Algarve, where the cost of daily bread was twice that charged in the rural world, namely in agricultural areas. Curiously, in Sofala, certain foodstuffs exported from the realm, such as cheese, increased fivefold in price, whilst the price of liquids, olive oil and beverages, increased more than tenfold. Magistrates benefited from the first great pay rise. Certainly, the increase in the value of contracts of the works of master builders also preceded that of basic provisions. However, once the effects of the epidemic of 1505-1507 had been overcome, the prices of manufactured products did not accompany the prices of

the former. It is therefore reasonable to bring the date of the beginning of the price rises in Lisbon, as proposed by Magalhães Godinho and others, further forward. According to Damião de Góis, inflation resulted from the speculative activity of the tax farmers, particularly the New Christians, as far as cereals were concerned, and of the great cattle breeders, in the case of meat. As remedies, this famous humanist pointed to foreign examples: the payment of tax contributions in money and a better distribution of cattle-breeding throughout the country, with the number of cattle breeders being increased by limiting the number of animals that each one could keep. The complication of receiving such revenue, particularly noticeable in the large urban centers, led to the appearance of the first specialists in taxation matters.

The drawing up of the records of property from the end of the reign of Dom João II and the reform of the charters restored many of the forgotten tax contributions and updated others in the sense of leading towards their normalization. The frequent visits of the representatives of the landlords had the same effect. The residents on the estates of certain monasteries and of streets under lease in towns were subject to exceedingly heavy impositions, with personal services being maintained on working days on manorial estates, in the transport of crops and in the conservation of equipment. In the case of some products, such as olive oil, the system whereby the farmer who leased the land paid the owner for the privilege was commonplace. The share of taxation amounted to generally one-third of production and rent. In the case of long-term leases, the taxes levied on agricultural production varied between one-quarter and one-tenth. The former value was the one most often levied on old farming land, which was therefore of better productive quality, reserved as the property of the great lords of the manor, whilst the latter value was levied on more recent land or land that was still being cleared or inhabited. The Military Orders charged such taxes on a widespread basis. Besides this contribution, the farmer was subject to the payment of other taxes further down the production process, which generally doubled his tax burden.

Manufacturing activity was subject to the so-called *conhecença*, a form of ecclesiastical revenue that was levied as a personal tithe, paid by the different craftsmen and the productive structure, namely olive-presses and mills, depending on their manufacturing capacity. To the clergy, it seemed opportune to receive such money at the time of confession, in Holy Week, despite the general mutterings that could be heard. The manufacture of cloth, in the weaving and fulling phases, was also subject to taxation, almost always paid in the form of product in some areas of the country. Besides these taxes on production, the taxpayer was subject to a broad set of royal duties, charged on the sale of goods and collected by the officers of the crown, or else allotted as a concession: claims, loans, transit charges, tolls, lodgings, services, conveyance taxes, as well as halves, thirds, fourths and fifths of rents, etc. Not even the ecclesiastical tithes were exempt since the war in Africa justified the incidence of the so-called *terças* (one third payment) on these. Municipal income was also subject to *terças* for the financing of public works and the payment of wages. The commanders of the orders were supposed to pay one-quarter of their respective income. In fact, the king felt the need to constrain everyone for the sake of equipping the realm at the request of the municipal representatives at the *Cortes* held in 1498. Not even death escaped the tax demands of the lords of the manor. Measures of cereal and wine, heads of cattle or the most valuable pieces of jewelry, belonging to the deceased, were used to satisfy the demands of the implacable landlords. The purchase of tombs in churches made death even more expensive.

An incentive for sugar production was provided by the alteration that occurred in Madeira in 1507, when the quarter tax, paid at home by the farmers, was transformed into a fifth, paid at the Customs' House, possibly in order to avoid evasion and leading to savings on transport costs on the part of the king's tenant farmers. In the realm as a whole, the merchants of some towns and

villages with a great productive capacity benefited from the exemption of having to pay toll charges in many places: amongst such towns, almost always the ones that are cited, were those of Covilhã and Guimarães. Perishable products were also allowed to circulate without the payment of taxes. The same thing happened with the basic provisions and excellent raw materials destined for typical manufactures in certain towns and villages, such as, for example, silk used for manufacturing purposes in Bragança and iron in Teixoso. The customs duties on goods meant the payment of a tithe generally paid in cash by Portuguese importers and in kind by the foreigners. Tax evasion seems to have made use of a false re-exporting of cloth to the islands. In effect, at the ports in northern Portugal, merchants requested exemptions under this very pretext.

In short, it can be said that, in the transition from the Middle Ages to the Early Modern Era in Portugal, it was possible to find the necessary ingredients for global expansion: men, skills, motivation and strategic raw materials. The activation of the resources of the realm and the islands continued to be pursued, with a paradoxical exhaustion of these same resources in all spaces. Until the end of the period, no serious ruptures were to be noticed whether in demographic terms, in the renewal of the labor force, or in terms of raw materials. Productive capacity was consolidated by guaranteeing the supply of basic provisions and manufactured articles. The land continued to be cleared, together with the drainage of the marshland areas throughout the Tagus Valley, as far as Santarém, in Estremadura, between Óbidos and Alenquer, and particularly in the Lower Mondego valley, at the mouth of the River Vouga and close to the main urban centers of the Algarve. Traditional crops were expanded, together with the growing of cereals, vines, olives and flax. North of the River Mondego, it was possible to note great equilibrium in the production of wheat and rye and a sharp increase in the growing of corn. Portuguese olive-oil and wine were exported to the north of Europe. Flax was brought down from Torre de Moncorvo, Lamego, Guarda and Covilhã, along the valleys of the Rivers Douro, Mondego, Zêzere and Tagus, to the main centers of cloth manufacture and rope-making, most frequently to Porto, Santarém and Coimbra. The basic food supplies to the garrisons in North Africa and to the crews of the fleets called for great storage capacity in the stores of Lisbon and made heavy demands on the production capacity of the realm and the islands in relation to cereal crops and biscuit-making. Associated with this was a total and almost exclusive use of available energy, overwhelming in the case of flour grinding and olive and wine pressing. This could endanger the production of other industries, especially weaving, when there was an urgent need for cloth-fulling, and mechanical sawmilling. The conflicts arising between crop and animal farmers indicated important changes in rural areas. The size of some transhumant flocks and herds continued to be quite impressive along the lanes opened in the woodland areas running from Bragança to Beja. The high rates of meat consumption in the main urban areas, principally in Lisbon, attracted countless heads of cattle, which was favorable as far as the tanneries and their derived industries were concerned. The arrival in the capital of the hides and tallow of the cattle, initially used in the colonization of the Atlantic islands, turned the city into the main centre for the redistribution of these raw materials. In this period, there is no doubt that the most easily exploited woodlands, the pine forests of the coastal region, were on their way to being completely used up, being particularly heavily exploited in the Setúbal peninsula and in Pederneira for shipbuilding purposes. The rehousing of the Castilian Jews and the manufacture of coal for metallurgical and heating purposes speeded up the felling of other tree species in the areas around the main population centers all over the country. Awareness of this fact imposed the need for a serious reforestation policy. However, in the inland regions, the chestnut tree continued to thrive. The capacity of resistance of the olive tree also favored its plantation in detriment to other trees that provided wood and fruit, such as walnut and cherry trees. Mining and quarrying

increased dramatically. Quarries mushroomed around the country, with stone being extracted for building purposes and for the making of lime, on the outskirts of the main urban centers, particularly Lisbon and the Algarve towns. Smithies were heading for exhaustion, with all the surface seams being completely used up. The installation of productive facilities, mills and kilns, the activities connected with shipbuilding and their consequent attraction of greater populations led to the abandonment of some salt-pans whose production had paradoxically produced a remarkable effect of aggregation. This process was noted particularly in the valleys of the Rivers Zebro and Trancão, and in the lower Mondego and Vouga valleys, as well as in Alfeizerão and Pederneira. Hydraulic energy reserves were being used to the point of their complete exhaustion. Flows of fresh or saltwater powered the mills, providing landlords with substantial rents. Landlords were almost always of noble blood, or else were ecclesiastical institutions. Already in progress was the building of flour grinding facilities designed to make use of the opportune water supply during the winter season and the winds of summer. Manufacturing industry consumed all the wool and linen produced inland and the timber from the coastal woodlands, with unaccustomed repercussions on the large-scale shipbuilding industry and freight. Undoubtedly, the population growth rates were higher in those places where the manufacturing activities that were typical of rural industry enjoyed the most favorable conditions, amongst these spinning and weaving. The development of rural industry may have benefited from the over-regulation of techniques, wages and profits, which crystallized production in the main urban centers, Lisbon, Porto and Coimbra, from the end of the 15th century onwards. Consequently, there was a sharp increase in investment in agriculture on the part of craftsmen. However, the first signs of the exhaustion of strategic raw materials began to appear, particularly wood and metals, as well as the lengthy and difficult processes of renewal and extraction, which were evident in the more accessible areas being integrated into a singular economy of scale. The construction of large buildings, churches and ecclesiastical buildings, royal and aristocratic residences, overspending on transport and freight packaging, and the military effort, which was enormous in North Africa, compromised the country's resources and its future.

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Copyright 2006, ISSN 1645-6432-Vol.4, number 2, Winter 2006