BEFORE THE IMF: 
THE ECONOMIC IMPLICATIONS OF 
UNINTENTIONAL STRUCTURAL ADJUSTMENT IN 
ANCIENT EGYPT

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Abstract

Debate about states and markets in the Bronze Age world has directed attention away from their roles and thus away from the way these economies functioned. The ancient Egyptian state assigned fields to its dependents and stimulated demand by spending and taxation. Markets and market forces were responsible for the allocation and distribution of materials in the ancient Near East from the end of the third millennium. Growth did not result from technological improvement or market competition so much as from demand stimulus, as in the modern world, suggesting that demand is more important than supply.

Introduction

Hitherto, economic discourse concerning the world of early antiquity has been dominated by terms like “palace economy”, “command economy”, “storage economy” or “revenue economy” (etc.) by emphasizing concepts like “autarky”, “tribute”, “reciprocity”, “redistribution”, “trade”, and “exchange” (etc.). This has directed discussion away from the role of the market and the economic significance of taxation. The evident failure of Bronze Age markets to function in a “modern” fashion has been interpreted as implying an absence of markets, and thus explanations have hitherto endeavored to demonstrate that the market did not exist, or that behavioral factors prevented it from functioning.  

1) This attempt at an interpretation of economic development reflects reviews of Warburton 1997 and responses to lectures. I am therefore particularly indebted to the invitations from Prof. H. Altenmüller, Dr. B. J. J. Haring and Mr. P. Bang. Astute critical observations by Prof. M. T. Larsen and D. Jones have galvanized my thinking; JESHO’s editor and readers have aided significantly as well. Without the library—and the librarian Fr. A. Zeeberg—of the Carsten Niebuhr Institute in Copenhagen, it would have been impossible to provide the references. My thanks to all.

2) This has largely been based on the theories of Karl Polanyi, for which, cf. Warburton 1998.
It can however be argued that markets existed in early antiquity, and that both they and the human agents activating them behaved as one would expect: exchanging goods and profits. The impeccable philological quality of the witnesses in favor\(^3\) has however not prevented the existence of the market from being disputed by equally impeccable philological witnesses.\(^4\) The arguments used against the market are however theoretical rather than factual. Rather than searching for economic approaches, behavioral attitudes are given primacy. It is assumed that societies sought autarky\(^5\) or that behavior was socially “embedded”\(^6\). This is supported with comparisons with “traditional” societies, either explicitly or implicitly. Anthropological examples cannot however serve as economic arguments. Technological levels should not be confused with economic and social models. Economic systems must be viewed economically. By directing the debate onto the issue of the existence and behavior of the market, attention has been drawn away from the issue of why ancient markets failed to have the results “we would expect”, which is the crucial issue.

Although it has frequently been assumed that ancient Egypt was the classic example of a “redistribution” or “palace” economy, the presence of a market has been detected. Despite their very different interpretations, both Janssen\(^7\) and Eyre\(^8\) recognize the existence of the Egyptian New Kingdom “river-bank market” where producers, state agents and salespeople exchanged goods. Regardless of how they functioned, these markets contributed to the exchange of goods and the realization of profits. The failure of that market to transform society is clear. Explaining the failure by assuming that the market was absent amounts however to denying the evidence. Modern economic theory has been used to explain the overall economy,\(^9\) and modern theory can also be extrapolated to account for both the presence and the failure of the market in the ancient world, in economic terms.

One of the major objections to the use of modern economic theory in the analysis of ancient economies is that it relies on methods developed in the context of the modern market economy, and these are considered to be inappropriate.\(^10\) In using modern theory to analyze the ancient Roman economy, Jongman

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8) Eyre 1998, p. 177 n. 22.
10) See Janssen 1975b, p. 131 (infra, p. 58) and Eichler 1999, with abundant literature.
argued that modern economic theory could be employed without necessarily implying that “rational choice” governed all economic choices, suggesting that economic thought would “provide historians with a rich body of theories and methods.”\footnote{11} It is in any case difficult to argue that modern economic activity is dominated by “rational expectations.” As we neared the end of five centuries of market-induced growth, the Financial Times and the Economist were still decrying “irrational investor panic.”\footnote{12}

It is no longer credible to suggest that modern economic behavior is based exclusively on rational choice, let alone to suggest that modern theory should be excluded from ancient economics on that basis alone. Although the behavior of both investors and consumers may be irrational, economic theory can still predict results. Such predictions are based on assumed parameters. It is the choice of parameters which determines the validity of the theory. Only discussion can determine which theories and which parameters aid in explanation and understanding. The value of theory should lie in its ability to explain. Rather than forcing the evidence to match theoretical constraints, the following account attempts to explain the evidence using theory, with the evidence—rather than theory—the dominant factor.

\textit{The Egyptian State}

Before the First Dynasty (ca. 3100 B.C.), Egypt was dominated by poverty. Although there were luxury articles including bits of ivory and lapis lazuli imported from abroad, there was virtually no movable or immovable wealth of any kind. The ancient Egyptian state changed that, creating wonders which have attracted the attention of the world since Herodotus. There were not only enormous temples and burial chambers stuffed with loot, but also private houses filled with furniture. Before the Industrial Revolution, the world economy was characterized by scarcity of goods and thus the fabled wealth of ancient Egypt was demonstrated for their contemporaries and for us through images of long lines of “tribute”-bearing foreigners with raw materials and finished products: gold, silver, copper, ebony, ivory, etc. Egyptians are depicted in the same fashion, bringing grain, fowl and other products to the king. In the customary sequel, the king dutifully turned over his newly acquired wealth to a god. It is generally assumed that the god’s temple then “redistributed” some of the wealth.

\footnote{11} Jongman 1988, p. 36.  
\footnote{12} The Economist, 24 April 1999, p. 21; for the FT, cf., infra, p. 57.
to the people. The distribution of gold was reserved for special occasions while the redistribution of grain was a daily affair.

The general impression is thus that during the Bronze Age wealth was luxury goods and the economy largely a matter of subsistence, dependent upon state support. Documentation from the first millennium B.C. suggests that the heavy hand of the state was a major factor, and the importance of the state sector grew under the Ptolemies and the Romans.

It would thus seem that from the dawn of history until the Arab conquest, the role of the state was decisive and that the market was of little more than marginal import in the economy of ancient Egypt.

**Land Ownership, Taxation & Corvée Labor in Ramesside Egypt**

Documentation for the earlier period is lacking, but data from the 12th and 13th centuries B.C. appears to confirm the image of major state land holdings. Long lists of taxes and grain income accompany extensive records of donations to temples and equally lengthy compilations of divine offerings which were ultimately recycled through society.

The two most important sources for this period are the Harris and Wilbour papyri. P. Harris is a propaganda text dating to ca. 1155 B.C. recording objects, lands and people given by Ramesses III to the temples of Egypt during his 30-year reign.\(^{13}\) P. Wilbour is an administrative document prepared during a summer ca. 1140 B.C., being a cadaster survey of a small part of Middle Egypt, and assumed to record official assessments measured in terms of grain in proportion to the size of various plots of land.\(^{14}\) P. Harris alone records that Ramesses III may have awarded a sixth of the arable land of ancient Egypt to the state temples and particularly the Mortuary Temple of Ramesses III, the principal beneficiary of the largesse.\(^{15}\) While a propaganda text like P. Harris need not be taken at face value, the administrative character of P. Wilbour seems to confirm the veracity of P. Harris.\(^{16}\)

Since not meant to be read by outsiders, it is difficult to grasp the true significance of P. Wilbour.\(^{17}\) It includes only a small part of the arable land in the region covered (ca. 4730 ha out of perhaps 150,000 ha recorded in 1880 A.D.), and it is not certain just why the data was recorded. It is however clear that it records

\(^{13}\) Grandet 1994.  
\(^{14}\) Gardiner 1948; Katary 1989.  
\(^{15}\) Cf. Haring 1997, p. 179.  
\(^{17}\) Cf. Haring 1997, pp. 283ff.
assessments in grain from agricultural lands. In principle, there were two systems of assessment: for large and small holdings. The larger holdings are identified with state institutions and are specified as being “under the authority” of an official. These larger holdings are assessed at three rates, depending upon the quality (?) of the land: ca. 3000 liters/ha; 2250 liters/ha, and 1500 liters/ha. The smaller holdings average out to roughly one ha and are identified with individuals: scribes, priests, “ladies”, stable grooms, soldiers, etc. These holdings are assessed at rates which seem to imply an assessment of ca. 100 liters/ha, i.e. invariably far lower than for the larger holdings. The larger holdings may have been state fields dedicated to grain production, but it is uncertain whether the totals were assessments or estimates of the yield to serve as bases for assessment; the smaller ones were probably those of either tenants or small owners paying “taxes” or “rent”. The note that some of the small holdings have been “acquired” implies that they are privately owned, and therefore that the assessments are a kind of tax, at a rate far below the productive capacity of the land. 18)

Other documents record the transport of grain by river barge from people with titles—and in quantities—similar to the assessments of P. Wilbour, suggesting that they are official in character and produced a significant volume of income for state organs. 19) Estimating the total income is difficult, but two million liters of grain annually would err on the conservative side. An equally conservative estimate would suggest that the 150,000 ha in this region represented less than one tenth of the total arable land of ancient Egypt. The income from this one region can therefore hardly represent less than one tenth of one specific type of state income during the Ramesside Period, suggesting state income easily exceeding 30 million liters of grain annually. 20)

18) Vleeming (1993: 72-73) notes that the values for P. Reinhardt suggest the same type of production as that for the state fields, suggesting that the total assessments were either gross or net. It is advocated in this paper that the totals are the net income of the temple, and that the difference between the assessment (in sacks of grain based on the size of the plot) and the harvest was the net income of the cultivators.


20) This estimate is fraught with problems. In order to avoid getting derailed by an argument about statistics, I have deliberately tried to use the maximum figures suggested by the documentation, specifically to emphasize the dimensions of the system. This is because I argue that even the largest figures suggested are not economically significant in “redistributionist” terms.

In terms of detail, however, we do not know if the rates of assessment in P. Wilbour were intended to serve as a basis for a significantly smaller levy (cf. Haring 1997: 290) or were themselves the levy in sacks (as suggested here, simply as a basis for discussion, intended deliberately to exaggerate the income): philologically, it is not certain that the rates are in sacks (khar) of 78 liters rather than oipe one-quarter of that, or 20 liters (cf. Gardiner 1948a:
Those who were not land-holders but gainfully employed were obliged to provide regular “deliveries” to the state representing products they ordinarily produced or acquired: pottery, honey, textiles, sandals, fish, birds, or dates, etc. This can be construed as a corvée in kind or a tax on production. Although only a fraction of production, the quantities seem to have been specified in precise amounts rather than procentual terms, and can be viewed as a “tax by profession” rather than on income or production. Some “deliveries” were substituted with payments in metal. The proportions “delivered” were far below productive capacity and definitely taxes.21)

60-65); fiscally, most calculations in later documents of the first millennium B.C. use the equivalent of the oipe—the artaba—rather than the sack, and—agriculturally—a yield of 3000 liters/ha would have been incredible, a levy extraordinary.

Another problem is the significance of the date of the papyrus. Most scholars note that P. Wilbour was written in summer during the inundation, suggesting that it is possible the papyrus recorded only summer cultivation, and therefore that the sums represent only a small proportion of the total land holdings because only a small proportion of the land was used for summer cultivation. It is also possible that other lists accounted for income from other fields in the region. While reasonable and entirely logical, both are speculative.

Using philological logic, one can counter the first argument by suggesting that the dates of the civil calendar determined the dates of the survey and not the type of cultivation; another accidentally preserved record of a land survey used the same date (II 3h.t 20)—more than 500 years earlier! (cf. Smither 1941). Although the date is the same according to the Egyptian calendar, the Wilbour Papyrus was compiled in July and August while the earlier survey would have been in January (cf. Luft 1992: table facing p. 224), and thus one could argue that civil servants simply observed the civil calendar.

Using practical logic one can however also argue that surveying the fields during the inundation was the only reasonable course since it was only during the inundation that the extent of the irrigation could be seen: the surveyors may have gotten their feet wet, but the data would have been reliable.

There are thus two mutually contradictory arguments which rely on some evidence rather than speculation to indicate that the sample in P. Wilbour is representative. Any argument in favor of suggesting that additional surveys be sought must face the peculiar problem that (a) they do not exist, and (b) that the existing surveys of later date (cf. Gasse 1988; Vleeming 1993) bear an uncanny resemblance to P. Wilbour.

For the totals, the estimate of thirty million liters annually is absolutely arbitrary. P. Harris records a total of 5,279,552 sacks (Grandet 1994: I: 332) which would amount to roughly 400,000,000 liters, or ca. 13 million liters/annually. Another figure is 460,900 sacks annually (Grandet 1994: I: 325) which would be equivalent to 34 million liters/annually. Together they amount to almost 50 million liters/annually, but it is possible that the one figure subsumes the other.

Modern systems of accounting usually do not include figures in parallel which actually include both (a) parts of the equation and (b) the totals. I have suggested elsewhere (Warburton 1997: 325) that P. Harris may actually include income plus objects acquired by exchanging that income on the market and thus that revenues and turnover are combined. Although speculative, the same attitude will be found in king-lists from antiquity where parallel dynasties are “added together” producing totals which have caused considerable quantities of ink to flow.

The less fortunate were obliged to perform corvée labor in their “free time.” This could have required occasional participation in missions to quarries at Aswan or mines in Sinai. In such cases, laborers far from home would require state support for subsistence. Others not dispatched to deserts may have “merely” been obliged to carry water to remote state projects. Those close to home were probably not remunerated for their efforts although they may have been given rations. Many of these poor souls may also have worked on state-owned agricultural lands, obliged to provide the largest part of the harvest to the state, but able to retain the remainder.

The Crown also required workers for major construction projects. According to the Egyptian Weltanschauung of the New Kingdom, Pharaoh was responsible for the construction of major divine temples. In return for temples, gods would sanctify the ruler’s legitimacy. The temples had their own income for daily activities, but Pharaoh kept responsibility for construction and quarrying. Such projects in the Nile Valley could have been accomplished by corvée labor, but quarrying expeditions in the deserts required rations. It is also probable that rations were required for laborers working in the Nile Valley itself, although improbable that these amounted to “salaries” in the proper sense. Most of the king’s expenses will have required expenditures in grain.

Income and Expenditure

The grain was stored in granaries and passed on to the recipients; some used for offerings at temples. State expenditures are an unknown magnitude, since the administrative documentation is not complete and the public texts difficult to interpret. One scholar who has examined virtually all the available documentation from the offerings of the Ramesside period concluded that during the 12th century B.C.

The daily and festival offerings in the temples of Ramesses II and III cost almost a million litres of grain yearly. And this represents only the tip of the iceberg. The total production of the temple estate must have exceeded the requirements made by the offering ritual to a considerable extent. 24)

23) Eichler (1990, p. 158) has one text where the water-carriers at Deir el-Medineh were given three quarters of a sack of grain (not quite 60 liters) each, which was below the wages of the workmen, but the water-carriers were not usually remunerated. Eichler’s other text (1990, p. 159) suggesting state remuneration is actually a record of a private transaction.
The ordinary offerings benefited the temple priests who controlled them, but some may have reached the population at large in the context of festival offerings. Among the beneficiaries of the state system were also the “Gang,” the workmen at the village of Deir el-Medineh employed by the state to excavate and decorate the royal tombs in the Valley of the Kings. They were given state subsidized housing and a regular salary of grain, which was supplemented with dates, firewood, pottery, etc. Records of their relationship with the state include the earliest known strike, triggered by the failure of the state to pay their wages ca. 1160 B.C.

Individuals also employed and compensated workers for work on their tombs. The compensation consisted of “bread and beer” which is equivalent to the wheat and barley awarded the “Gang”. Some employers also paid with textiles.

The grain wages received by the “Gang” were acquired by the state via taxation. They received them as salary payments for their official activity as state employees. The workmen decorated the royal tombs with texts which no one except kings (not even consorts or high officials) could use in their tombs under ordinary circumstances. Given their importance, the workmen capitalized on their knowledge of these secret texts, and manufactured funerary equipment for the Theban aristocracy in their free time.

Although the members of the Gang did not betray their masters and use the secret texts themselves, the value of their “black-market” work depended upon their specialist knowledge and many of their commissions were probably for custom-made items. Free-lance activities were also less important as the “Gang” earned their livelihood as employees of the state. Their salary was supplemented with various products, but their monthly wages (of more than 400 liters of grain) far exceeded the quantity needed to nourish the nuclear families in which they lived. It is therefore not surprising that grain figures among the commodities traded among the workmen in their own transactions.

When making a purchase among themselves, the workmen would estimate the value of the desired article in terms of its value in metal, usually copper. As there was no circulating medium, the purchaser would then provide the seller with a heap of household articles which equaled the total estimated value of the commodity which they endeavored to purchase. Each individual commod-

27) Cf. e.g., Müller-Wollermann 1985, pp. 142-144.
ity would be assigned a value either in terms of copper or grain, and occasionally a sack of grain could be thrown in to reach the desired purchasing price.\textsuperscript{30)}

State expenses are thus recorded on several levels: lists of offerings from temples, actual salary expenses, rations, and also records of exchange operations. Documents record systematic state purchasing of dates,\textsuperscript{31)} and other essential articles, both in Egypt and abroad.\textsuperscript{32)}

Silver income from state trade in Egypt also contributed to the income of the state, indicating that not mere supplies and commodities, but also “money” income was deliberately sought. The silver itself came from abroad, as Egypt does not have silver. International trade correspondingly increased enormously during the third and second millennia B.C.\textsuperscript{33)}

\textit{Observations}

\textit{State Income & Expenditure}

The preceding notes suggest what the sources offer; more detail could enhance some aspects, but it is worth examining the character of the economy described. Given the role of the ancient Egyptian state, the importance of the “market” has generally been dismissed.\textsuperscript{34)} The economy has thus been characterized as either a “tribute” economy or a “redistribution” economy, depending upon whether acquisition or allocation is emphasized. In general “tribute” implies an arbitrary or \textit{ad hoc} fiscal assessment involving “oppressed” or “barbarian” peoples, while “redistribution” implies that goods “which are collectively produced, centrally collected and stored” are returned “to the producers”.\textsuperscript{35)} The former is thus pejorative, implying “exploitation” and the later positive, implying “justice”.

Although potentially of value for sociological or political studies, “tribute” is not a satisfactory tool for economic analysis. Economics is the study of the production and circulation or allocation of resources. “Tribute” merely identifies a form of acquisition, and is thus not comprehensive. Nor is it clear that the term can be used with general validity for the entire economy; one authority who denies the relevance of the market rejects the word “tribute”.\textsuperscript{36)}

\textsuperscript{30) Kemp 1989, pp. 248ff.; Janssen 1975a.}
\textsuperscript{31) Megally 1977.}
\textsuperscript{32) Bleiberg 1995; Warburton 1997, pp. 175-177; 307-309.}
\textsuperscript{33) Cf. Sherratt & Sherratt 1998.}
\textsuperscript{34) Janssen 1975a, 1975b; Bleiberg 1995.}
\textsuperscript{35) Renger 1994, p. 177.}
\textsuperscript{36) Müller-Wollermann 1983; 1985.}
For a collective economy based on storage, “redistribution” would be an eminently apt term. Parts of the Egyptian economy may have been “redistributive”, in some sense. But, this is true of virtually any economy with a large state sector, and according to Renger the economically crucial feature would require “collective production and redistribution”37) for the term to be economically significant.38)

The temple offerings are frequently assumed to represent a “redistributive” mechanism. It was noted above that the temples of Ramesses II and III may have dispensed a million liters of grain annually during Ramesside era. A million liters annually is a lot of grain and suggests a “redistribution” economy more plausibly than any theoretical argument in favor of the market possibly could. It is not known who consumed the million liters of grain, but most will probably have gone to the priests rather than the people. These temples were also among the institutions providing materials which made up the income of the “Gang”, whose economic life is among the best documented cases from ancient Egypt.39)

These workers excavated and decorated the tombs in the Valley of the Kings. Each received almost 5,000 liters of grain a year.40) The composition of the “Gang” usually averaged 40-60 workers,41) and some earned more, so that the wages of the “Gang” can not have cost the state less than 250,000 liters a year. A million liters would therefore suffice to pay four such Gangs, i.e. 200 workers and their nuclear families, i.e., perhaps 1,000 individuals altogether. This is the documented material from the offerings, but if we accept Haring’s metaphor and compare this to a proverbial iceberg, and multiply this by ten, we account for about 10,000 individuals. If we then extrapolate wildly—beyond the maximum possible hypothetical figures from P. Harris, indicating perhaps 50 million liters/annually (cf. supra, n. 4)—the total reaches 50,000 individuals. Although rather numerous, this is not a substantial proportion of the population of Ramesside Egypt, which is estimated at 3-4.5 million,42) and thus our hypothetical iceberg becomes a proverbial drop in the bucket.43)

38) While advocating the importance of redistribution as an economic category, Eichler 1999 denies that redistribution must involve returning goods to the producers. If “redistribution” is effectively redefined into taxation the value of the term is thrown into doubt. Supporting redistribution, Renger 1994 (cited supra n. 37) logically contends that it must involve a circular movement.
39) Janssen 1975a passim.
40) Janssen 1975a, pp. 455ff.
43) The difference between the sheer bulk of millions of tons of grain on the one hand
The figure of 50,000 must also be compared with the 113,433 people Ramesses III claims to have assigned to the temples, which was a total added to the existing totals of temple dependents. These calculations confirm that either (a) the temples did not provide for their own dependents or (b) that the temples were barely able to attend to the needs of their own dependents and neglected the population at large. One much later text suggests that a scribe received a mere fraction of the calories needed to survive from the temples (and that he even sold part of this). Redistribution of offerings through the temples cannot therefore have been an economically significant feature of the Egyptian economy.

The offerings were however but one part of the state expenses. The court and its dependents will have consumed as much again, and there were construction projects at the temples across the land. Paying for bureaucrats, artists, craftsmen, priests, sculptors, stone-masons, manual laborers, cultivators, herdsmen, hunters, soldiers and armorers would have been mind boggling, and exceeded tens of millions of liters of grain annually.

The documentation does not however reflect either such expenditures, nor such income. And yet the reality and magnitude of the projects was daunting: everyone is awed just by those monuments which survived the depredations of the centuries; historians will recall the exploits of Egyptian kings who took armies deep into Nubia and Syria. Obviously, this was not done exclusively on a voluntary basis: it must have cost something, and yet—despite its apparent abundance—the documentation to substantiate such expenditures is strikingly lacking.

The reason that the state could afford this was probably that most state employees in ancient Egypt did not ordinarily receive a salary, but rather a plot of land, from which they could provide their own income. The records of state income discussed above thus actually conceal a different kind of state policy. The small holders were probably state employees assigned fields in lieu of a salary: they could either till the field themselves or have someone else do it. In exchange for a nominal tax or rent payment, they received the harvest to dispose of as they wished. During their “free” time, they could exercise their real profession, for which the harvest of the field was their “salary” and what

and the reality that this is merely a few percentage points in the overall economy is the difference between evidence of “wide-scale redistribution” and “the absence of economically significant redistribution” which Wilkinson (1997, p. 151) and Eichler (1999, p. 46) have suggested is a contradiction in my discussion of the ancient Egyptian economy.

they paid the state a “tax.” In return for the right to the land, they served the state and paid their “rent” or “taxes”. Status and assessment were linked in P. Wilbour.

Scribes need not have tilled their fields, paying others to do it for them, but soldiers could till their fields in winter (except when put in prison), harvest in spring and campaign in summer. Given the climatic, political, military and technological realities of the Near East during the Bronze Age (ca. 3000-1200 B.C.), Egypt ran little risk of foreign attack during the winter when Palestine was an impassable muddy swamp and the prevailing winds meant that a navy could hardly reach the Egyptian coast unexpectedly. Egypt did not therefore require a standing army, and its soldiers could return to their fields for the winter, where their harvest was their salary. Bureaucrats, priests, stable hands and their widows were likewise land holders who kept most of their harvest and paid the rest to “cultivators” who tilled the fields, and a fixed proportion as taxes or rent to the Crown or the temples. Like the “Gang”, they will have earned more “on the side”.

During most of Pharaonic history (i.e., the Bronze Age), grain taxes were both assessed and collected in grain, defined in proportion to the size of the plot rather than the harvest. Individuals could sell and inherit plots, along with the right to the income and the obligation to pay the taxes or rent. The plots are therefore (a) recognized as private property by the state and (b) owners and tenants encouraged to produce a surplus as their tax rate was reduced if they increased production. This not only helped private people, but also eased the burden of the state in collecting taxes. Since the state was responsible for registering plots, land owners had an interest in registering their holdings simply to guarantee the recognition of their property rights. The state did not however

49) E.g., Caminos 1954, p. 280.
52) Grandet (1993, p. 164) assumes that the prospective standing army of Ramesside was divided into two corps. This is based on Kruchten’s belief that s represents corps (Kruchten n.d., pp. 14, 46). Schulman (1964, p. 4, 26-30) and Grandet (1993, p. 168) translate this as “company”, suggesting that the standing army had a strength of 200-250 men. The greater part must therefore have consisted of farmers and militia units indicating that the standing army was not a major consumer of redistributed goods.

53) During later periods this was changed to become a proportion of the harvest (cf. Felber 1997). The change was hardly accidental, as it reflects a transformation in property patterns, but the practice of the earlier period has important fiscal dimensions.
55) van den Boorn 1988, p. 185.
have to establish specific bureaucracies for bureaucratic salaries or investigations of economic activity to establish potential sources of income. Nor did the state have to organize the canals, aside from collecting “tolls”.\textsuperscript{56}) The state merely needed to assign fields and record land-ownership, which was itself both in the interests of the owners themselves and the state itself—and then the state merely had to collect grain according to the land registers.

It should be noted that the highly “redistributive” data presented above stem from the end of the Ramesside Period, and that the system collapsed shortly thereafter, so that the data may not only be illustrative, but actually betray a state of affairs which was more “redistributive” than at any other time.

\textit{Trade and Markets}

The coercive apparatus which achieved this in Ramesside Egypt was unable to extend its reach far beyond the Nile. The sources of lapis lazuli (in Afghanistan) lay far beyond the reach of Egyptian arms of any age. Lapis lazuli, silver and copper are not found in the Nile Valley proper, yet are found in Upper Egyptian cemeteries dating to the fourth millennium, before the emergence of the unified state around 3050 B.C.; wine was also imported from Palestine at the same time.\textsuperscript{57}) Lapis lazuli, carnelian and silver can hardly represent anything except trade goods. The Minoan, Mycenean and Cypriote kingdoms of the second millennium were likewise beyond the control of the Egyptian state, and it is thus hardly credible that they were parting with their silver vessels and copper ingots as “tribute” to an Egyptian court which could not threaten them. Gift exchange is a possible option, but the inscription of Amenemhat II (dATING to the perhaps 1900 B.C.) clearly demonstrates that he was not relying on “gift exchange”: he employed both commercial and military means to acquire valuable goods.\textsuperscript{58})

\begin{itemize}
\item \textsuperscript{56}) Goedicke 1967, p. 56.
\item \textsuperscript{57}) Cf. Hartung 1998.
\item \textsuperscript{58}) Altenmüller & Moussa 1991. Quack 1996 points out that the use of the ship determinative supports his argument that $i\ddot{\text{u}}sy$ should be read as the earlier form of Irs, Alashiya, and thus Cyprus in the inscription. Although the ship determinative is used in (my) column 8 of the inscription (Altenmüller & Moussa 1991, Falttafel, cols. unnumbered), the name of the town of $i\ddot{\text{u}}sy$ is not preserved there, and the ship determinative is not preserved in column 16 where $i\ddot{\text{u}}sy$ is named. Although graphically debatable, philologically the postulated form is evidently acceptable. There were however no cities in Cyprus during the reign of Amenemhat II (Muhly 1997, p. 92), and thus no reason to go there. Quite aside from the fact that the booty listed would not have been available, it would have been a remarkable accomplishment for the Egyptian navy to have coped with a force substantial enough to guard 1554 prisoners without the danger of losing the entire Egyptian navy to the Cypriotes. It is therefore
\end{itemize}
The renowned annals of the military campaigns of Tuthmosis III (during ca. 1457-1430 B.C.) are merely an appendix relating how he acquired the gold, silver, copper, precious stones, wood, etc. which he donated to various gods.\(^{59}\) After having stolen them from the commercial cities of the Levant, he awarded them to the gods who had given him the victories.

The success of the commercial states was such that they vastly preferred to pay tribute where a military threat did exist, but merely so as to free their resources for commercial pursuits, and not merely as a result of pressure. The Late Bronze Age city of Ugarit possessed neither silver nor gold resources, and yet the king there found it worth his while to pay the Hittite king 25 kg of gold in lieu of offering soldiers to aid in the war against Assyria.\(^{60}\) This gold can only have been acquired via commercial activities, and it would not have made sense to pay this tribute if it did not represent a conscious choice, and thus a portion of the commercial proceeds moving through the port city. The survival of the commercial states demonstrates that commerce was not hindered by non-market impediments but rather that they paid their tribute to the larger states from their commercial profits. The larger states were not dependent upon such tribute, and thus the “tribute” is incidental and the “market” decisive, for there would have been no “tribute” without the “market”.

Trade products can be identified as trade goods, and not as “gift-exchange”. The 400 kg of copper which Liverani characterized as the commercial component of an arrangement which was otherwise “gift-exchange”\(^{61}\) does not bear comparison with the ten tons of copper on the roughly contemporary shipwreck of Uluburun.\(^{62}\) There is no reason to assume that the ship was not a commercial vessel, trading in goods. Whether it belonged to a state or private commercial venture is not relevant. Cypriot opium may also have been among the foreign goods arriving in second millennium Egypt\(^{63}\) and opium is clearly an article produced exclusively for the “market”, as consumption is its sole raison d’être.

\(^{60}\) Nougayrol 1956, p. 151.
\(^{61}\) Liverani 1979, p. 23.
\(^{62}\) Pulak & Bass 1997. If Moran (1992, pp. 107 & 108 n. 2) is correct in reading 15 tons of copper in Amarna Letter 35, this would however bear comparison with the Uluburun shipwreck. The commercial role of the Levantine palaces should not be underestimated, nor confused however with the larger and politically more secure Egyptian and Mesopotamian establishments. The Assyrian merchants active in Anatolia were transporting copper in order that “profit could be increased” (Dercksen 1996, p. 157), and the Cypriote merchants—palatial and otherwise—will have been pursuing the same goal.

Dyn. XVIII (ca. 1450 B.C.) tomb paintings depict the arrival of Syrian merchants at Egyptian markets. The Syrians unload their freight, while Egyptians wait in their river bank market stalls.\(^{64}\) Foreigners appear among those involved in the tomb robberies at Thebes\(^ {65}\) where Syrian merchants also dealt with ordinary people.\(^ {66}\) Other scenes show Egyptian—rather than foreign—vessels\(^ {67}\) and documents record the movement of Egyptian ships from market to market along the Nile.\(^ {68}\) Merchants may not have had high status, but they were everywhere.\(^ {69}\) As an Egyptian scribe put it:

The merchants fare downstream and upstream and are as busy as brass, carrying goods [from] one town to another and supplying him that has not...\(^ {70}\)

The trade in honey, textiles and grain complements the record from transactions at the community of workmen in Deir el-Medineh.\(^ {71}\) While the Gang at Deir el-Medineh may have taken commissions for custom-made wares, others mass-produced funerary equipment. This can be seen from funerary figurines where the name is missing. It was believed that the figurines had to respond when the deceased was called upon by name to carry out some unpleasant task in the Beyond. The absence of the name rendered them useless for the purchaser, but its absence clearly demonstrates to us that they were produced for the market.\(^ {72}\)

This is very important as one of the few clear-cut indicators of market-oriented production during the New Kingdom. Many other cases of “market” activities reflect the sale of surplus agricultural produce,\(^ {73}\) and cannot therefore be used to illustrate production for the market. The sandals visible in market stalls cannot however have been surplus produce, and neither can the numerous clay vessels spread across the Near East. These must have been produced for the market, as a full-time job.\(^ {74}\)

The ancient Near Eastern market economy was functioning throughout the second millennium B.C. The palaces of the Levant were important participants, but their roles were commercial rather than political.

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64) E.g., Davies & Faulkner 1947.
65) E.g., Peet 1930, pp. 132-133.
66) Gardiner 1935.
67) E.g., Eyre 1998.
72) Cf. e.g., Schneider 1977, p. 27, No. 3.2.3.1; Steindorff 1937, pl. 43, no. 17; Warburton 1984-85.
73) Eyre 1998.
Terminology and Development

It is commonly assumed that during this era of state-dominated “tribute” or “redistribution” economies, exchange transactions were somehow embedded in the social structure of the society, and that consequently the market was neither the dominant feature of the economy nor the primary means by which goods were allocated. The concept of state control is implicitly linked to the concept of economic “autarky”, implying that all actors were deliberately striving for self-sufficiency to the maximum possible extent. According to this view, trade was restricted by numerous non-market influences. Merely emphasizing “tribute”, “redistribution”, “embeddedness” and “autarky” allows a distinction to be made between the “market” economy and the economies of the ancient world. This distinction seems to involve assumptions about the emergence of the modern market which enable the creation or identification of a “transformation”, whereby the market breaks free of the social bonds which constrain it. This “transformation” is however only possible if it can be demonstrated that the market either did not exist in early antiquity, or was once deeply embedded and is no longer embedded.

Prices, Markets and Market Forces

The activities of the Assyrian traders in Anatolia were decidedly market oriented. The Assyrian merchants deliberately sought profits by moving commodities from places where they were common to places where they were rare. They not only acted as middlemen selling Babylonian textiles and Eastern tin to Anatolian customers, but they even shifted Anatolian copper from place to place in Anatolia, all with a view to making profits.75)

The market features of this trade cannot be denied. The ability of the Assyrians to bring silver profits back to Assyria depended upon their Anatolian clients who were consumers: markets allocate goods as well as providing profits, and thus prices imply different values to consumers and entrepreneurs. A consumer desires a product; an entrepreneur desires a profit. The market depends upon both.

The behavior of the individual actors in the Assyrian trade in Anatolia reveals a clear understanding of the principles of the market. Powell notes that the behavior of individual merchants in third millennium Mesopotamia resembles that of the second.76) Rathbone suggests that similar behavior ruled in

76) Powell 1977.
Graeco-Roman Egypt.\(^77\)) Although this behavior does show that the actors were not inhibited by an “embedded” mentality, mere market-like behavior need not however demonstrate that the market actually played a decisive role in general. Evidence of “market forces” is quite another matter. Philological sources can hint at behavior patterns, but archaeological discoveries may reveal market forces, and not just market-like behavior.

The Anatolians were mining tin in the third millennium B.C.,\(^78\)) but importing tin and exporting silver during the second millennium.\(^79\)) It has been remarked that the discovery of third millennium tin mines in Anatolia fails to fit into a pattern involving Anatolian tin imports during the second millennium. Before the discovery of the third millennium Anatolian tin mines Stech & Pigott found the presence of tin in the Troad bronzes difficult to reconcile with the absence of lapis lazuli in third millennium Anatolia.\(^80\)) The one suggested integration into the Near Eastern trade network, the other did not. The possibility that the market influenced distribution and mining was not considered.

Rather than recognizing a developing market, Muhly suggested that lapis lazuli “never caught the fancy” of third millennium Anatolians, while conceding that the second millennium Hittites appreciated the stone.\(^81\)) Prag suggested that the distribution of lapis lazuli was controlled by “political factors” and that the early distribution of silver corresponded to a similar “pattern”.\(^82\)) Research has shown however that the elite did not control the workshops at Shahr-i Sokhta\(^83\)) and that the commercial trade is easily recognizable.\(^84\))

In light of the remarkable number of silver objects found throughout the Near East in the fourth millennium B.C., Prag noted that “Considering its rich silver resources surprisingly few silver objects of the fourth millennium have yet been recovered in Anatolia”.\(^85\)) The distribution of Anatolian silver throughout the Near East increased significantly from the end of the third millennium, with the end of the Early Bronze Age and the beginning of the Middle Bronze Age. This development can be identified with Anatolia’s gradual integration into the Near Eastern market, and not to local demand or to improved technology.

It can now be argued that the true significance of the presence of tin mines

\(^{77}\) Rathbone 1991.
\(^{78}\) Yener & Vandiver 1993a.
\(^{79}\) Larsen 1976, p. 86.
\(^{80}\) Stech & Pigott 1986.
\(^{81}\) Muhly 1995, p. 1508.
\(^{82}\) Prag 1978, p. 41.
\(^{83}\) Foglini et al. n.d.
\(^{84}\) Casanova n.d.
\(^{85}\) Prag 1978, p. 39.
and the absence of lapis lazuli can be related to the market. These twin features suggest that Anatolia was not firmly anchored in the Near Eastern trade network during the third millennium, but that it was integrated into the market in the second millennium. In second millennium Anatolia, tin was worth one seventh the price of silver.\(^{86}\) It could therefore have been financially viable to mine tin in Anatolia before its integration into the market, but not viable thereafter. The “theory of comparative advantage” would suggest that the Anatolians were obeying the laws of the market by abandoning tin mining in favor of silver mining, and therefore that archaeological evidence supports the market interpretations.

The market explanation has been neglected hitherto since prevailing archaeological theory suggests that the spread of technology supported autarky.\(^{87}\) Limits were considered exclusively in technological rather than market terms. Yener & Vandiver suggest that tin production continued into the second millennium, assuming that because it was mined in the third, it must have been mined in the second.\(^{88}\) This is however hardly convincing, since they have not published evidence that the third millennium archaeological material was covered by second millennium material, or that there is evidence of second millennium material in the area of the tin mines. Muhly argues that the second millennium imports exclude the possibility of third millennium mining.\(^{89}\) This is hardly a suitable fashion of approaching archaeological evidence. Recognizing the realities of the situation, Brisch & Bartl suggest that the abandonment of the mines in the second millennium allows two hypotheses: either (1) the Anatolian tin was inferior or (2) the Anatolian mines were exhausted.\(^{90}\) Their suggestion corresponds to the concept of an autarkic world dominated by technology and supply, not price differentials, and does not seem to take account of the quality of the material still there.\(^{91}\)

It would appear more reasonable to suggest that low-cost imports simply made Anatolian tin-mining pointless, and thus the market shifted Anatolian mining activity into silver from tin. Although the existence of merchants, markets and profits is gradually gaining acceptance, the concept of market forces allocating production—and not just consumption—in the second millennium B.C. has not yet been widely considered.

\(^{86}\) Yoffee 1995, p. 1393.  
\(^{88}\) Yener & Vandiver 1993a, p. 212.  
\(^{89}\) Muhly 1993.  
\(^{90}\) Brisch & Bartl 1995, p. 144.  
\(^{91}\) Yener 1995, p. 1520.
Discussing the abundance of silver at fourth millennium Byblos, Prag repeated the hypothesis of local Levantine sources and a primitive technology to account for the distribution, noting Dunand’s suggestion that there might even have been a local gold source as well.92) Thousands of years earlier—during the Pre-Pottery Neolithic B (ca. 7000 B.C.)—there were five different types of obsidian being traded through Byblos.93) No other contemporary site has more than three different kinds, and Byblos did not have access to its own obsidian sources: like the silver in the Near East, all types of obsidian are identified as Anatolian.94) Long before the appearance of its later trading partner, the Egyptian bureaucratic state, Byblos was a commercial hub, taking advantage of its access to land and sea routes. It may have even been exporting obsidian to Cyprus.

Cyprus had however only one type of obsidian during the Pre-Pottery Neolithic and was relatively cut off until around the middle of the second millennium B.C., when Cypriot copper came on line. Even during the earlier part of the Bronze Age most archaeological sites on Cyprus are “cemeteries without associated settlements”.95) Its rapid growth after 1700 B.C. demonstrates that the gradual incorporation of new entities into the market system transformed the economy.

“During the Middle Cypriot period, the copper industry underwent a great expansion” and by the end of the Bronze Age, Cypriot copper was being distributed via Ugarit throughout the Mediterranean, Western Asia and into the Black Sea.96) Cypriot copper may have even reached southern Germany.97) Settlement moved from the mining regions in the mountains to the harbors as the export oriented drive grew. Renfrew and Bahn suggest that since “Sardinia had copper of its own” importing copper from Cyprus “is puzzling”.98) However, as in the case of Anatolian tin, the application of the “theory of comparative advantage” would reveal that not only the actors, but also the entire market functioned in the fashion of a modern market, and would remove the enigma.99)

93) Roaf 1990, p. 34.
94) Roaf 1990, p. 34.
99) Some could argue that the Anatolians would have continued to mine tin rather than abandoning tin mining altogether, but low-price imports would have made it impossible to sell the tin at almost any price. Any entrepreneur trying to sell local tin at a high price would either be driven out of business or obliged to expand his activity by going into bronze production. This would either have stopped the endeavor at the first step, or later when low-cost imported tin would have been more important than local supplies. In any case, the fact that the
Most Near Eastern archaeological text books note that although as a chronological tool the “Bronze Age” began around the beginning of the third millennium B.C., tin bronze was not used widely in Palestine until the early second millennium B.C.E., or about a thousand years after the beginning of the so-called Early Bronze Age.\textsuperscript{100}

Text books have not yet noted that the wide-spread use of tin bronze in the Near East thus coincides with the time when the only known tin mine in the Middle East was closed. If autarky was of any importance, this would be paradoxical. The only decisive driving force would appear to have been markets which were not only allocating goods, but themselves governed by price differentials and competition which determined the production and distribution of goods. Commercial centers like Assur, Mari, Byblos and Ugarit would distribute articles produced by export-oriented economies like Cyprus and Anatolia. Commercial exchange and export driven policies are characteristic of the market, not autarky.

Both the growth and the demise of the Early Bronze II Negev copper wholesaler Arad have hitherto been difficult to explain: attributing these to cyclical movements\textsuperscript{101}) is not an explanation. It is agreed that a trade downturn precipitated the end of Early Bronze III urbanism in the southern Levant. This is however then identified as misleading since “Syria, which also participated in this exchange network, did not decline”.\textsuperscript{102}) This seems to imply that Dever believes that economic decline must be global and synchronized, i.e. systemic. Simultaneous growth in one region and decline in a neighboring can be attributed to regional as well as local competition and market forces. It can therefore be suggested that Arad was likewise the victim of market forces. It grew as Egyptian demand grew, but may have suffered as competition made over-land transport of copper too expensive, giving sea-borne providers an advantage and thus undermining Arad’s competitiveness. The existence of a system could not protect Palestine if it lacked economically viable exports.

During the second millennium B.C., cattle were transferred from the region of the independent kingdom of Hazor in Palestine to the commercial emporium Mari on the Euphrates\textsuperscript{103)—a distance of more than 500 km. It is a solution, but

\textsuperscript{100} Ben-Tor 1992, p. 81.
\textsuperscript{101} E.g., Joffe 1993, pp. 86-87.
\textsuperscript{102} Dever 1989, p. 233.
\textsuperscript{103} Bardet et al. 1984, pp. 434-435; Horowitz 1996.
one not easily explained in terms of locally centered autarky, especially as Mari had its own herds in the nearby Khabur region. For obvious reasons, Central Place Theory cannot account for this, or for the distribution of imported basalt grinding stones, tin-bronzes and lapis lazuli in second millennium Babylonia.

The failure of Central Place Theory to account for the early second millennium export of bulky low-value Babylonian textiles to Anatolia and the Persian Gulf is however more significant. Exporting textiles could only have been reasonable in a market economy based on market forces. This would place the emergence of prices and market forces as the dominant factors at least as early as the end of the third or the beginning of the second millennium B.C.\textsuperscript{104)}

\textit{National Markets}

The ancients were not completely oblivious to the implications of the international market. Belatedly, towards the end of the Middle Kingdom (ca. 1864 B.C.), Sesostri III tried to prevent Nubians from trading in Egypt independently by forcing them to trade at the Egyptian garrisons in the forts of the Second Cataract region.\textsuperscript{105)} At the same time however, it would appear that Syrians were allowed to trade and settle relatively freely in the Delta. This had however extremely unsettling effects as they may have taken over the state as the Hyksos shortly thereafter.\textsuperscript{106)} During the New Kingdom (ca. 1500-1200 B.C.) Syrian merchants are documented trading along the Nile, just as the Assyrians were trading within Anatolia and Babylonia in the preceding centuries. Private Egyptian merchant missions also traded directly with Syria.\textsuperscript{107)} It would seem that during the second millennium trade was not controlled on a national basis. Although many formal restrictions existed, merchants from the periphery were permitted direct access to the markets of the core and \textit{vice versa}.

\textsuperscript{104)} It should be pointed out that there is little evidence that the ancient Egyptians actually mined copper in the Sinai (see Warburton 1997: 104-106) and none that they mined the tin in the Eastern desert. To argue that they were technologically incapable of doing so would be perverse. Their access to Nubian gold left little reason for them to pursue either tin or copper mining.

Climatic argumentation has recently appeared in economic argumentation as an excuse for poor performance in certain areas (e.g., Landes 1999: 3ff.). This is presumably adopted from the archaeologists who suggest that the climate must have been more hospitable when a city like Arad appeared in a barren corner of the Negev. Today, market forces drive people to the sands of Arabia and the tundra of Alaska; the climate of major trading centers like Aden and Bombay has always been insufferable.

\textsuperscript{105)} Sethe 1959, pp. 84-85.

\textsuperscript{106)} See e.g., Holladay 1997, pp. 200-203.

\textsuperscript{107)} E.g., Caminos 1954, p. 138.
Chaudhry has described the situation in the Middle East during the first part of the 20th century A.D., remarking that

Arabia existed in a Braudelian world of international trade routes, migration and currency flows in which major events—World War I, the dissolution of the Ottoman Empire, the collapse of the gold standard—had significant local effects. The communities that experienced these defects, however, had yet to be defined at a national level, and mechanisms for coping with economic change were local. The very institutions that separate the national from the international, a national market and a state, did not exist.\(^{108}\)

The development of the state has been associated with the concept of “control” and “administration”, and hence, “tribute”, etc. The importance of a national market as a buffer has therefore been neglected, and the inability of early state communities to protect themselves from international commercial activity gone unremarked, as the failures were ascribed to the absence of a market, rather commercial failure.

Liverani has argued that the end of the Bronze Age reflected a transformation from palace-centered to commercial trading.\(^{109}\) Records suggest however that the princes at Dor, Byblos and Tyre still controlled trade during the early Iron Age\(^ {110}\) while private commercial activity was known during the Bronze Age.\(^ {111}\) There was therefore no transformation, on that level. The complete collapse of copper-based Ugarit can be ascribed to the beginning of the Iron Age. Arad was completely destroyed but rebuilt before being abandoned: a city that still has a role will be rebuilt. A city which has been priced out of the market will not, whether Arad, Enkomi or Ugarit.

We have seen that the price of silver will have been determined by market forces. If prices were determining commercial activity in the Mediterranean, they might also have influenced activity in Egypt. As the method of barter exchange employed at Deir el-Medineh is alien and cumbersome, it has been suggested that the prices generated are not “normal”\(^ {112}\) and that the absence of the profit motive is significant.\(^ {113}\) Most transactions at Deir el-Medineh will have been dominated by the desire to acquire goods, as the participants were civil servants and not entrepreneurs. In any case, barter prices are (a) completely compatible with modern economic disutility theory, while profits are (b) not essential for modern economic theory.\(^ {114}\)

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113) Bleiberg 1995.
It is however more than probable that another ordinary market system existed,\(^\text{115}\) and thus that the evidence from Deir el-Medineh need not be taken as representing markets in ancient Egypt. The known aspects of this market imply however that important members of the state bureaucracy or state institutions themselves participated in this market.\(^\text{116}\) The enormous leverage of state trading\(^\text{117}\) could therefore potentially have skewed the market.

One danger was the mere preponderance of the state investment program which made it one of the most important single actors in the Egyptian market (which need not signify that it dominated the market, but merely identifies it in relation to any other single individual actor). The figures in P. Harris include a sum which implies a sales turnover valued at almost 400 kg of silver in thirty years.\(^\text{118}\) While not necessarily implying a money economy,\(^\text{119}\) this figure could well hint at the extent of temple trading in Egypt. The figure does not bear comparison with the total of almost 1,300 kg of silver donated to the temples in specie,\(^\text{120}\) but could suggest that state trading was not insignificant in ancient Egypt.

More important than mere market preponderance was however the possible economic significance of the fact that the state could have skewed the markets by selling goods acquired through taxation. This meant that state trading did not need to either cover costs or secure profits. This was not a danger however because the ancient Egyptian economy lacked a currency. The lack of a currency was far more important than the actual use of financial units of account.\(^\text{121}\) Römer demonstrates that the idea of “money” existed in ancient Egypt, but that the different roles did not fuse into a single monetary instrument.\(^\text{122}\) This single monetary instrument which serves as a medium of exchange, unit of account and store of value serves an important role in a modern market economy. Such an instrument serves a useful purpose in a market system, but is not essential to commercial exchange and could actually be detrimental to an economy based on grain and silver.

In a market without a currency, silver could be purchased with textiles as easily as textiles with silver. In ancient Egypt, textiles were among the products produced domestically, and silver was imported from abroad as not locally


\(^{116}\) Bickel 1998.

\(^{117}\) Janssen 1961; Condon 1984.

\(^{118}\) P. Harris 69, 4; Grandet 1994, vol. I, p. 325.

\(^{119}\) Cf. Haring 1997, p. 182.

\(^{120}\) P. Harris 68b, 7; Grandet 1994, vol. I, p. 235.


\(^{122}\) Römer 1998.
available. Since textiles could be purchased with silver as easily as silver with textiles, any entrepreneur with access to either textiles or silver could profit should either price have been artificially high or low. In an economy with a government controlled currency, the private sector cannot compete with artificial prices supported by the state, because the state controls both the commodities and the currency. In ancient Egypt however, the state did not control either. Had the state pursued a policy of selling, e.g. textiles, at an uneconomic price, foreign traders would have rapidly moved in to exploit the gap, either by offering textiles at a price below that offered by the state or purchasing the textiles for resale. Therefore the temples could not pursue a monopolistic price policy, and the market will have juggled the prices into equilibrium by means of a Walrasian *tâtonnement*. Walras postulated that in an equilibrium the entrepreneur would not achieve unreasonable profits and the consumer would win, as prices would be driven down. Given the importance of state trading, this meant that equilibrium prices will have been dominant for most articles for most periods, but determined by the market rather than policy or decree.\(^\text{123}\) The remarkable price stability of ancient Egypt can thus also be a market phenomenon.

State market activity could not therefore manipulate prices while taxation and employment supported the market. Aside from its administrative simplicity, the method of collecting taxes had far-reaching economic implications. By taxing according to the size of the plot rather than a proportion of the harvest, the state was encouraging farmers to overproduce, and thus automatically decreased rural underemployment. By paying salaries in fields and/or grain, the state could also increase employment in the secondary and tertiary sectors virtually by administrative decree, reducing unemployment by decree. This assured that state demand for grain remained stable, and that increased grain production would not lead to overhangs common in societies obliged to subsidize farming. While employment was not restricted by financial limits, it was not restrained by needs either, since demand for temples and tombs was unlimited, providing a sector with virtually infinitely elastic demand. Since the state was not borrowing funds for its projects, but merely decreasing rural underemployment and simultaneously increasing secondary and tertiary employment, it also meant that the prosperity of the private sector was not hampered by state investment. And, in fact state demand will have increased private production, including textiles, etc. which could be purchased with the grain income.

Archaeological and philological sources indicate that foreign traders were ubiquitous in Egypt.\(^\text{124}\) Egypt may have had a state and a national market, but

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124) Cf. e.g., Holladay 1997, pp. 201-203.
it was not closed and it did not have a currency. The internationally used medium of exchange was silver, which Egypt had to import from the Mediterranean. Given the role of the market in the Mediterranean and the presence of foreign traders in Egypt, and the need to import silver, “prices” and “markets” and thus “market forces” existed in ancient Egypt. The effects would not however necessarily be the same as those expected today.

**Theoretical Implications**

This discussion of the economy was dominated by the data from the ancient world, but the phrase “infinitely elastic demand” above betrays that the selection was guided by Keynesian macro-economic theory.\(^{125}\) When developing his theory, Keynes faced an economic equilibrium when investment, prices, wages and employment were all low. Classical theory demanded a drop in wages to increase employment. Keynes recognized that a reduction in wages would be a further macro-economic blow; even if it aided an individual entrepreneur, it would not increase aggregate demand. Say’s Law dictated that demand would rise to equal supply, making equilibrium inevitable. Keynes saw that it did not, but rather that demand was not limited by capacity to produce, so much as capacity to purchase: effective demand determined demand, rendering supply irrelevant.

The equilibrium was thus economic stagnation, and only increased demand could alter it. Keynes therefore advocated artificial stimulus through state spending covered by borrowing. Increasing demand and employment would increase consumption and investment. He was conscious that state borrowing would affect interest rates as state bonds would be favored over private ones, and thus government borrowing would have a negative effect on private investment: even if state demand stimulus were to trigger economic growth, interest rate changes could undermine the stimulus. Regardless of the possible negative consequences, Keynes advocated borrowing to support demand stimulus.

The alternative was pretty grim. Around 3200 B.C.—before the First Dynasty—Egypt and the rest of the world suffered from poverty. The situation was that theoretically defined by Keynes:

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\(^{125}\) The word “Keynesian” is used because I recognized the key features of the economy of ancient Egypt only by using a Keynesian framework. It is entirely reasonable to take issue with my “confusing” demand stimulus based on taxation (ancient Egypt) and demand stimulus based on deficit spending (OECD). Those who object are encouraged to direct their attention to the parameters rather than the labels.
The position of equilibrium, under conditions of \textit{laissez-faire}, will be one in which employment is low enough and the standard of living sufficiently miserable to bring savings to zero.\footnote{126) Keynes 1936, pp. 217-218.}

This is also described by Hobbes:

\begin{quote}
In such a condition there is no place for industry because the fruit thereof is uncertain, and consequently no cultivation of the earth, no navigation and the life of man nasty, poor, solitary, brutish and short.\footnote{127) \textit{Leviathan} Chapter 13.}
\end{quote}

There was no wealth, and little opportunity for changing it: for the following two millennia, the economies of the ancient Near East would be dominated by technology perfected in the course of the Neolithic and “Secondary Products” Revolutions.\footnote{128) Sherratt 1981.} It is therefore remarkable that the two millennia of the Bronze Age brought enormous prosperity—without any significant technological innovations. The only major changes were political and economic. As a political institution, the state increased demand by levying taxes. Under the unique conditions of ancient Egypt, this led to an increase in wealth and consumption.

Technology and population growth both contribute to economic growth, but the Egyptian example underscores that demand stimulation also plays a fundamental role in the creation of wealth. In ancient Egypt, the stimulation of demand in an economy without an advanced credit system was accomplished by exactions or “taxation” which obliged peasants and craftsmen to produce more than they would have otherwise. This meant that the taxation was itself a form of wealth creation, as the wealth produced would not have existed without the taxation. And taxation was the only possible form of demand, for other demand did not exist.

This type of taxation is fundamentally different to taxation which skims off the cream of wealth which already exists, or taxation which actually cuts into the capital of a society. It is also—necessarily—fundamentally different from demand stimulus created by government spending, since it is the taxation itself and not the spending which is stimulating the economy. In terms of its effects—as “demand stimulus”—taxation of this type can however best be economically equated to either monetary or fiscal stimulus in the form of inflation or deficit spending in the modern world.

In ancient Egypt, neither monetary nor fiscal stimuli were possible as there was no currency and as there were no possible lenders in a world without wealth. Inflation was avoided by the absence of a currency which could be
debased, while the grain standard itself equalized income and expenses. Deficit spending was impossible as the state could not spend more income than it received. Demand and supply were lined on an upward trajectory limited by “good government”.\(^{129}\)

Together the specific features of the economy meant that:

1) Inflation was avoided due to the absence of a currency which could be debased;
2) The grain standard meant that income resulted in immediate expenditure, which inevitably involved employment and the marginalization of non-subsistence related employment; so that
3) Demand was restricted only by the capacity of the state to limit it, and thus contributed to secondary and tertiary employment; while
4) Interest rates failed to impede investment because of their irrelevance to the overall economy, and increasing investment and income did not negatively affect the interest rate structure; since
5) The possession of agricultural properties did not signify unproductive investment for prestige reasons, but actually increased income directly by
6) Generating private sector employment, which benefited from state training of craftsmen and scribes; and
7) Guaranteed that the private sector could take up some slack when state demand slackened; while
8) The Walrasian **tâtonnement** guaranteed that prices were stable.

While guaranteeing a kind of stability, the net effects were however to make growth dependent upon the strong state, and this implied that private sector private enterprise was not as promising a pursuit as seeking state employment and prestige.

**Historical Implications**

The tendency to divide Egyptian history into discrete units termed “Kingdoms” separated by “Intermediate Periods” reflects a cultural interpretation of Egyptian history. Recent research has suggested that the archaeological divisions are not as clear cut as the political horizons. One of the most important consequences of this recognition is the idea that the First Intermediate Period (ca. 2200-2000 B.C., between the Old and Middle Kingdoms) was not marked by economic decline so much as political fragmentation. Seidlmayer’s analysis

\(^{129}\) For details, see Warburton 1991, 1997.
of the tombs confirmed what struck the excavators almost a century ago: that there was a great deal of wealth in the tombs, and that it was difficult to reconcile this with the image of economic crisis.\textsuperscript{130} The relative prosperity of the tombs cannot however be viewed in isolation: even a tourist will note that larger and more attractive tombs characterize the greater ages, the “Kingdoms”. Seidlmayer notes that Upper Egypt reverted to political fragmentation, adjusting to the changing circumstances more rapidly than Lower Egypt. Although not equal to the glorious prosperity of the Middle Kingdom, the level of poverty was far above that characterizing the pre-dynastic period.

Rather than demonstrating that the First Intermediate Period was not one of poverty, Seidlmayer has effectively demonstrated that the Old Kingdom’s inadvertent Keynesian policy raised prosperity across the board. The relative importance of the private sector meant however that a collapse of the state with its tax policies resulted in a relative decline—or halt in growth—rising however to a level which was still far higher than the standard of living a millennium earlier. Each Keynesian boost hoisted the economy a step higher, even when the policies stopped. The end came when Ramesses III terminated the policy. As the success of the policy was a fortuitous result of their greed and the construction programs, the kings could hardly have been conscious of the economic implications of their actions.

The suggestion that the donations of P. Harris represented a decisive shift for the economy of ancient Egypt means that neither P. Wilbour nor Harris can be used as “statistical guides” to ancient Egypt in general. Viewed as an historical document, P. Harris can be linked to the catastrophe which followed, rather than reflecting the normal state of affairs in Egypt. P. Harris can thus be used to argue that the donations listed are a major reason for the fact that no other major Mortuary Temples were constructed in Thebes afterwards.\textsuperscript{131} It can also be argued that these donations impoverished the king to the extent that he was unable to pay the workers excavating his own tomb. They went on strike, and eventually the temple of Amun took over responsibility for the construction of the royal tomb as well,\textsuperscript{132} but did not assume it for temple construction to the same degree.

The king was morally responsible for temple construction, since his legitimacy was dependent on the gods. The king was however financially impotent since the temples had the income. The temples of the gods had previously been

\textsuperscript{130} Seidlmayer 1987, 1990.


\textsuperscript{132} See Allam 1997.
dependent upon the largesse of the king and therefore lacked the concept of a responsibility to build.

This was in an age before public works were understood in economic terms, and—needless to say—increased taxation income was not transformed into elastic projects. Economically the system had been dependent upon balancing income and projects. Breaking the link broke the system. The result of this imbalance in responsibilities led to a diminished value for land: since the temples realized that their grain income had no value, they wanted silver. Rather than pay their taxes in precious metal, tenants would prefer to pay less valuable grain. Payments in precious metal had been known earlier, but the importance of grain changed the market. Small-holders had sold their land to others earlier, but now also sold it to larger land holders and became tenant farmers obliged to pay in grain rather than owners paying in silver. The necessity of paying in grain initially led to overproduction which may have depressed the price further, as demand for grain dropped, while demand for metals grew. The result was a bloated bureaucracy which (1) ended the construction program with its demand stimulus and (2) held large land holdings.

Developments in the first millennium can therefore be understood as reflecting the repercussions of Ramesses III’s donations rather than the general state of affairs in Bronze Age Egypt. Documents from the first millennium B.C. recording large tracts of land in the hands of the temples probably reflect the change in ownership. Such papyri are more abundant from the first millennium than the second. Hitherto, it had been assumed that this was a mere accident, in much the same fashion that the preservation of P. Wilbour reflected a mere accident, and in much the same fashion that P. Harris has hitherto been viewed as a statistical source rather than an historical document. It can be argued that P. Wilbour reflects the economic transformation effected by the donations recorded in P. Harris, and that P. Wilbour and Harris together document the end of the economic system of Bronze Age Egypt.

This transformation therefore—ultimately—led to the creation of a new type of lease, whereby tenants leased land in exchange for a proportion of the crop. Leases of this type appear around the mid-first millennium B.C., being unknown earlier. Rather than assuming that this too is a mere accident of preservation, it can be directly linked to a legal recognition of circumstances which had

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133) Kitchen 1983, p. 612.2; Gardiner 1948b, p. 73.2.  
135) Gardiner 1948a, p. 77.  
changed radically in the preceding five centuries.\textsuperscript{138} The Egyptian leases meant that the state had increasing quantities of grain, but the overall economic equilibrium meant that that the market for grain within Egypt was saturated. The Egyptian state could embark on a major construction program, but a grain surplus still existed.

At the time however, the Greek commercial expansion which led to the foundation of the city of Naukratis included a search for grain exporters from the Black Sea to Egypt. Egyptian institutions confronted with large grain surpluses and a saturated local market now faced the monetarizing Mediterranean economy. The Egyptian commercial grain exports characterizing Greek-Egyptian cooperation would ultimately lead to Alexandria being one of the foremost cities of the Graeco-Roman world. From the seventh century until the Arab Conquest, Egyptian grain would be flowing out of Egypt and into Greece and Rome. Spalinger has defined the situation clearly:

\begin{quote}
it will be the thesis of this paper that from the latter half of the seventh century B.C. to the first quarter of the sixth, Egypt’s policy in the Levant was commercial in intent . . . \textsuperscript{139}\end{quote}

Spalinger goes on however to suggest that this policy was \textit{laissez-faire}, and also that “Egypt had more to fear from Hellenic commercial monopoly in the Levant than a Judean super power”.\textsuperscript{140} The policy was anything but \textit{laissez-faire}, as the Egyptian state directly supported maritime activities on a major scale.\textsuperscript{141} Egypt had every reason to secure the Eastern Mediterranean so as to secure the free flow of grain and no reason to fear the emergence of a “Judean

\begin{itemize}
  \item Gasse 1988 and Vleeming 1993 are publications of the documents marking the transition from the state managed fields. One of the earliest leases dates to 672 B.C., but is not effectively formulated with the precise legal clauses of later leases (cf. e.g., Donker van Heel 1998, with literature). This suggests that the system was in its infancy at that time. The “Domain of Amun” figures prominently in this lease, being the recipient of a 10\% share. This marks the end of two major developments: (1) the increasing role of the Estate of Amun and (2) the substitution of a fixed amount proportionate to the size of the plot for a “share” of the harvest. The ownership of this plot is not entirely clear.

  It is difficult to imagine how the actual field workers divided the portions on the state managed fields among themselves, but P. Louvre E 7856 (Donker van Heel 1998) may suggest that an official responsible for the field found some workers ready to work it, and that they then made an informal agreement among themselves. The idea that this informal arrangement eventually led to the later leases is intriguing, but highly speculative. It has also been suggested that the concept of the leases was derived from the importation of foreign practices: a change in the legal and economic situation could also lead to the importation of foreign solutions.

\textsuperscript{138} Gasse 1988 and Vleeming 1993 are publications of the documents marking the transition from the state managed fields. One of the earliest leases dates to 672 B.C., but is not effectively formulated with the precise legal clauses of later leases (cf. e.g., Donker van Heel 1998, with literature). This suggests that the system was in its infancy at that time. The “Domain of Amun” figures prominently in this lease, being the recipient of a 10\% share. This marks the end of two major developments: (1) the increasing role of the Estate of Amun and (2) the substitution of a fixed amount proportionate to the size of the plot for a “share” of the harvest. The ownership of this plot is not entirely clear.

\textsuperscript{139} Spalinger 1977, p. 222.

\textsuperscript{140} Spalinger 1977, pp. 222-223.

\textsuperscript{141} Cf. James 1991, pp. 720-726.
superpower”. Only if the Egyptian state could secure export markets could it hope to convert its grain into silver and thus turn the bane of a grain surplus into a bounty. Some of the silver went to the Greek mercenaries necessary to maintain the system, but this was a slight cost in comparison to the benefits.

The key to understanding these phenomena is agricultural policy. A key feature of every modern agricultural policy is its inherent lack of economic rationality: agricultural policy has not been dominated by rational accounting balancing demand and supply ever since the Roman Empire used Egyptian grain (nota bene!) to purchase the silent acquiescence of the Roman plebs. Jongman emphasizes the difficulties of assuring that the population of the Roman Empire could be fed. On the one hand, it can be argued that this was an administrative rather than an economic problem, given the character of Rome itself. On the other, it may be equally correct to suggest that the problem was more (a) one of raising the level of economic activity beyond the agricultural and (b) somehow assuring that the grain be consumed. The principal problem in ancient Egypt was disposing of the grain, not producing it, and neither Rome nor Egypt brought their economies above the agricultural level.

The principal difficulty with agricultural policy is that it is not sound. The technological, political and economic success of European agriculture has allowed many to flee the farms and become urban un- or underemployed rather than rural underemployed.

The European Union spends $45 billion a year of taxpayers’ money on subsidizing farmers [...] Taxpayers are fleeced a second time as consumers, because the EU protects and rigs the market in farm goods to ensure that consumers have to pay artificially high prices for their food. [...] Farmers [nevertheless...] frequently declare themselves poor and miserable.

Most OECD agricultural policy is now designed to discourage yet more farmers from fleeing the land. This policy is however politically rational, even if not economically. The difficulty with agriculture is the persistent production of surpluses which cannot be disposed of economically. The success of the Egyptian economy was not in producing an agricultural surplus—seemingly any stable political system can do that—but rather in finding an economically viable means of consuming it. Here, European policy has utterly failed. It can raise productivity and reduce unemployment, but it cannot raise consumption (without subsiding exports).

142) Jongman 1988, pp. 65ff. 143) Cottrell 1999, p. 9. 144) Near Eastern archaeologists and philologists pay particular attention to climate, on the assumption that slight changes in weather or significant changes in climate could lead to
Tired of subsidizing French farmers via the European Union’s Common Agricultural Policy, the German government recently started a row over transferring subsidies from the Commission to the national governments. Grain markets are detrimental to the market economy. The Keynesian analysis of the Egyptian economy confirms that the ancient Egyptians inadvertently and unconsciously solved this problem by simply investing the grain, and thus preventing grain from dominating any markets. This worked during the Bronze Age, but not thereafter. In light of the superiority of the ancient Egyptian system to the modern European one, it is surprising that a German reviewer of Warburton 1997 remarked:

Given the significance which the author assigns the market in [ancient] Egypt, it is difficult to understand why an increasing market for grain could possibly have led to the decline of the New Kingdom.

The absence of Mediterranean grain markets in the Bronze Age was part of the reason. Part of the problem may have been the agrarian character of the world, where most markets have been self-sufficient in grain. Part of the problem may have been shipping capacity. Commodities like copper and tin were shipped in consignments amounting to tens of tons at a time, whereas the grain trade would require far more ships with far more capacity. During the 17th century A.D., more than a hundred thousand tons of Baltic grain were being exported through the Danish Sound to the North Sea annually. Although the Romans were shipping more than a hundred thousand tons of grain from Egypt annually, a similar situation can hardly be posited for the eastern Mediterranean in the second millennium B.C. Such shipments required not only reliable export markets, but also security.

A trade relying on bulk shipments of commodities was unreasonable as long as pirates dominated the Mediterranean. The Sea Peoples played a significant role in ending trade in the Bronze Age eastern Mediterranean, but pirates were a familiar phenomenon as early as the Amarna Letters. As long as trade is dominated by small quantities of valuable trinkets, profits can be made by taking risks. The export of commodities in bulk requires more security: security

“crop failure”. It is however possible that warfare was a more common cause of “crop failure” than climatic change; cf. van Bakel (1998: 147) for the relatively greater importance of warfare as opposed to weather in Hawaii.

146) Quack 1998, p. 177.
which can only be achieved through the use of state force. And it required the full support of the Egyptian state to secure the region for the bulk export of grain, as can be seen in the policies of Necho and Psammetichus. The same ruthless policies were pursued by the Roman Consul Pompey and the American President Thomas Jefferson, in the same Mediterranean Sea.

But by then, the modern market economy had already succeeded.

**Market**

It has been suggested that markets did not exist in antiquity or that they were not responsible for the distribution of goods on a wide scale. Egyptian sources for the earlier period confirm a systematic fiscal policy involving taxation and remuneration. It has been argued here that this system existed alongside labor, commodity and land markets, and was enmeshed in a Near Eastern economy where markets allocated goods regionally and prices determined by the disutility of labor drove export-oriented economies. This not only influenced individual behavior, but also the character of trade networks and prosperity. Manufactures from Babylonia and raw materials from the peripheral regions competed with distribution determined by the profit motive; the national market was not isolated from these forces.

The importance of this market has been denied.

The centerpiece of the argument has been the theories of K. Polanyi who argued that exchange in antiquity obeyed different rules. Polanyi denied the existence of a “price-making” market in antiquity. In the modern world however, “prices” can be understood as regulatory mechanisms where markets make prices, when information about demand and supply are disseminated. Veenhof demonstrated that the very material Polanyi used to deny the existence of the market was in fact the best available documentation in the Mesopotamian source material, demonstrating the existence of a market with fluctuating prices driven by competition pushing the exchange of information and the realization profit of profits.\(^{150}\)

While appreciated in Assyriological circles, this has not been widely accepted as relevant for ancient Egypt. According to Polanyi’s system, “householding”, “reciprocity” and “redistribution” preceded the market as major forces. It was recognized that “reciprocity”, “redistribution” and the market existed simultaneously.\(^{151}\) This suggested that the system was not evolutionary, and thus its

\(^{150}\) Veenhof 1972, p. 350.
analytical value thrown into doubt. Polanyi contended that a quantitative leap to the market came with the appearance of rents and wage labor. He implicitly assumed that in a collectively organized “redistribution” system rents and wages could neither exist nor function. The mere existence of rent and wage labor in ancient Egypt would therefore effectively remove the twin cornerstones of the relevance of Polanyi’s theory to ancient Egypt, since Polanyi suggested that these were decisive. We argued above however that (a) the “redistribution” system may not have existed in Egypt, but (b) the market did. According to Polanyi’s definition, ancient Egypt had a market economy, and—equally according to Polanyi—the market determined all features of society. While able to accept the former, it is impossible to accept the latter.

This market was not decisive. Economists and archaeologists have great difficulties recognizing the market described above. Egyptologists have pursued Polanyi’s non-market system and archaeologists Renfrew’s autarky. Struck by the “taxes” or “tribute”, economists have emphasized the “impositions” or “exactions”, and thus designated the system a “revenue” or “command” economy. Given the importance of taxation, such designations are not without merit. While a “revenue economy” would depend upon taxation of some other economic structures, a “command economy” may perhaps correspond to the term “palace economy”, used to suggest that the Palace determined the structure of the economy through command. The evidence from Egypt suggests however that the payments made to the state were but a small proportion of the production. This in turn demands that the taxation itself implies the existence of another, larger—but invisible—market economy, which was the dominant feature.

This suggests that neither “revenue” nor “command” are necessarily the correct terms, while “redistribution” is clearly inappropriate. Like the term “tribute”, these designations are intended to distinguish the economy from a “market” economy. This distinction appears to be rooted in the idea that the “market” did not serve to allocate goods. This is based on assumptions that “trade” and “commerce” served only to supply essential commodities and luxuries in a world which was primarily autarkic. The “market” in the world of early antiquity is thus assumed not to have been the fundamental factor organizing economic life, presumably because of (a) the presumed importance of the state

155) Hicks 1973, p. 23; Rider 1995, p. 3.
organization and (b) the assumption of economic autarky. This argument is usually employed to identify the development of the market as a European Mediterranean phenomenon.\(^{158}\)

For ancient Egypt, Eyre has however concluded that “The market is detectable, if only it is looked for”.\(^{159}\) “Market” could describe this economy without doing injustice to either the Egyptian economy or the term “market”. Both the market and market forces may have existed—but they did not “work”. At least not the way we would expect it to.

This opens up a new field of questions, because both Polanyi and Finley\(^{160}\) were clearly correct in noting that the ancient market failed to function as the market has in recent centuries. Polanyi’s system served a useful purpose, because it drew attention to this issue. Polanyi’s basic contention was ultimately that the market failed to function because of behavioral patterns and attitudes.

The markets of the Near East and the Mediaeval world seem to have been dominated by the desire to acquire goods as well as profits, as in the modern world where consumers seek commodities and entrepreneurs profits. Jongman has emphasized that the debate around the existence of markets and the social standing of traders has directed attention away from the real issue.\(^{161}\) Although the markets of the ancient Near East used prices as regulating mechanisms for the allocation of goods, and market forces actually shifted production, it must be admitted that markets of the second millennium B.C. did not function as the market has in the last five centuries.

North assumed that economic history represented a process of reducing “transaction costs”.\(^{162}\) His interpretation of the restrictions on “transaction costs” in early antiquity assumed that “redistribution” and a corresponding lack of property rights were early impediments to exchange. This assumption is frequently repeated.\(^{163}\) Property rights have however been recognized in both Egypt and Mesopotamia, from the earliest times.\(^{164}\) In ancient Egypt, the mere phrase “The Law of Pharaoh” was an abbreviated form understood as meaning the right to property through inheritance.\(^{165}\) The fact that this particular phrase had this specific meaning suggests that property was fundamental.

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158) See e.g., Cameron 1997, pp. 29ff.
162) North 1981.
163) E.g., Cameron 1997, p. 30.
These “transaction costs” did not therefore impede the market, but this market obviously did not have the same effect as the market did after 1600 A.D.

Polanyi’s system was largely based on psychological speculation, and scholars now emphasize relative “embeddedness”\(^{166}\) rather than the market itself. The term “embedded” applies to economic activity dominated by social circumstances more than “rational” calculation dedicated to profit. People supposedly gave “gifts” or “tribute” to the king in exchange for the king’s guaranteeing justice.\(^{167}\)

It could be alleged that certain thinking was culturally “embedded” in the entire Middle East. Many ancient Near Eastern kings boasted of having captured a city and “carried away” the wealth of its palaces, as Thutmosis III did. It is however difficult to reconcile this type of “embedded” behavior with the positive connotations suggested above, but equally plausible—and remarkably modern. Although determined by the same desire to expand and employ its power, modern American foreign policy is largely influenced by desires to (a) prevent American military casualties, (b) reduce domestic unemployment and (c) limit domestic drug consumption; none of these goals is “rational” in economic terms, but considered socially important. Embedded social values have always affected policy, making state “redistribution” more common today than it ever could have been in antiquity. The modern system is nevertheless embedded in the market.

Values are however also affected by the market, and the market can determine the system’s response. Ugarit paid the Hittites because Ugarit obviously perceived that it was advantageous to pay tribute in gold rather than to militarily support the Hittites. The Hittites obviously considered the arrangement to be to their advantage as well. Both proved to be wrong and the collapse of the Hittite Empire was simultaneous with the collapse of Ugarit. It can be argued that avarice was responsible for the downfall of both, with Ugarit wanting to leave itself free to make more money and the Hittites intent on the easy acquisition of money. The failure is not relevant, as the mere existence of commercial motivation and commercial cities in early antiquity demonstrates the existence of an international market, through which commodities were funneled from producers to consumers.

Another part of the argument against markets has been to contend that the social status of traders was low and not itself a source of prestige. The result was that traders were either low or high in the social hierarchy. The actual

\(^{166}\) Cf. e.g., Haring 1997, p. 13.

\(^{167}\) Bleiberg 1996.
“traders” will have been itinerants dependent upon employers or relatives as well as their income.\textsuperscript{168)} The highest members of the social hierarchy were not dependent upon prestige or profits drawn from commerce, but in a position to “enjoy” their wealth.\textsuperscript{169)} While this scheme may apply to the ruling houses in Egypt or the Hittite Empire, it should be clear that the merchant rulers of the Aegean and Levantine trading cities were dependent upon trade for their wealth, and that their concerns were consciously commercial rather than political.

The Levantine commercial cities did not generate wealth: they exchanged commodities and accumulated wealth, but they did not create it. The Assyrians clearly paid their way through to the markets of Anatolia. The princes of Ugarit used their commercial income to pay off Amurru and the Hittites rather than build up military defenses. Their behavior closely resembles that of the merchants of Amsterdam who did not hesitate to trade with Spain during their war of independence. The similarity between the ruling families in the Levantine commercial cities and those controlling the emerging Dutch economy is too striking to be denied. It can hardly be contended that different psychological attitudes prevailed.

The market of the Levantine commercial states may have dictated commercial terms, but it certainly did not increase prosperity the way the modern Dutch market did. What was the difference?

\textit{The Voyages of Discovery and the Industrial Revolution}

In the last five centuries the market has been driven by competition and technological change. While the economies of the ancient world seem to have had markets, they do not seem to have responded in the same fashion. There can be no doubt that this changed decisively with the advent of Wallerstein’s “long sixteenth century” from 1450-1650. The first modern European economy developed in the centuries after 1500 A.D.\textsuperscript{170)} which began when the European voyages of discovery reached the Americas and Asia. The importance of economic events in the 500 years which followed does not bear comparison with economic history in the five thousand years which preceded the European voyages of discovery.

Europe definitely profited from the experience. What happened is however not entirely clear. The change was not immediate: the industrial revolution only followed in the centuries after the first successful voyages. Landes suggests that

\textsuperscript{168)} Bickel 1998.
\textsuperscript{169)} Caminos 1954, p. 138; Jongman 1988, pp. 37ff.
\textsuperscript{170)} Vries & Woude 1997.
the market was the decisive force which gave Europe superiority.\textsuperscript{171}) The Europeans did not however bring the market with them: they sought and found the markets of Asia overflowing with commodities.\textsuperscript{172}) North suggests that advanced European financial mechanisms contributed to world economic development.\textsuperscript{173}) The Europeans discovered more advanced instruments in Asia. In China there was even paper money, invented centuries earlier, in response to the scarcity of silver.\textsuperscript{174}) Nor was European technology decisively superior. The compass came from the East, and an Arab pilot took the Portuguese to India\textsuperscript{175}) after the Ming admiral Cheng He had reached East Africa.\textsuperscript{176})

The world that the Europeans encountered was thus technologically, economically and financially equal or superior to that of contemporary Europe. The markets of the East existed. We have traced them back to before the second millennium B.C., and it was—after all—the splendors of the Orient which brought the voyagers out to sea in the first place. That neither the Chinese nor the Arabs transformed these markets as the Portuguese and Dutch were to do is however indisputable. To treat the discovery of the Asian markets as an accident and ascribe the economic revolution of the last five hundred years to a gradual evolution out of the European feudal system would however be difficult, although this is tacitly assumed by many authors.\textsuperscript{177}) The willingness to use force in support of commercial ventures can be assigned a higher level of importance, but cannot alone explain the success of the “market” (and certainly contradicts the idea that the “market” rather than the armed force of the state was responsible for success).

The origins of the development lay in the voyages of Prince Henry the Navigator in the middle of the 15th century A.D. It culminated in passing the Cape and entering the Indian Ocean, where the Portuguese found the markets of the East. Although they had a great appetite for the commodities of Asia, the Europeans had little to offer the Orient. The accidental discovery of America meant however that they had access to silver. The initial advantages therefore lay with the Portuguese and the Spanish, for their American colonies guaranteed the supplies of bullion required to purchase commodities in Asia.

This led to a global transfer of silver bullion centered on the Iberian Peninsula, but based on global trade. Although the Portuguese and Spanish Empires

\begin{itemize}
\item Landes 1999, p. 59.
\item Chaudhuri 1985, 1990.
\item Gernet 1996, pp. 324ff.
\item Cf. Tibbetts 1971.
\item Gernet 1996, pp. 398ff.
\item E.g., Hicks 1973, North 1981, Landes 1999, etc.
\end{itemize}
merged, the Iberian powers were slowly edged out by competition from the Dutch and the English. In contrast to the Iberian powers, their colonies did not produce large quantities of bullion. The Dutch and the English were obliged to seek commodities through trade. The foundation of the city of Manila in 1571 can be identified as the birth of the era of global trade, based on the global flow of silver bullion.\(^{178}\) The foundation of Cape Town in 1652 can be associated with the birth of the era of global trade based on commodities.

In order to acquire commodities in Asia, the English and the Dutch required both bullion and commodities which they could use to exchange for tea, spices, textiles, etc. Their desire for silver was greater than their access.

Fortunately however, the Spanish conquests were not restricted to the Iberian peninsula, Asia and America: they also waged a war in the Netherlands. This was a costly affair. The forces in the Netherlands cost more than 11 million ducats in the years 1571-77, before the fall of Antwerp in 1585. This was a third more than the cost of the Mediterranean fleet, and the costs escalated dramatically in the years after the fall of Antwerp, reaching “60,000 ducats a day” in 1587-88.\(^{179}\) These are vast sums, yet “Spanish financial difficulties provoked frequent mutinies”\(^{180}\) and thus—combined with military incapacity—led to the loss of the war. The Spanish were suffering from a liquidity crisis. This particular cloud necessarily had a rather substantial silver lining for Philip’s opponents.

During the early years of the war large quantities of silver were flowing into the Spanish Netherlands, fueling the commerce of the merchants in the city of Antwerp. Some of this silver doubtless reached Holland as well and—in any case—the Spanish were never successful in severing trade with the Dutch either.\(^{181}\) The supply increased significantly after 1585: at the conquest of Antwerp, Parma allowed the protestant merchants to take their wealth with them to Holland.\(^{182}\)

Long before the exodus from Antwerp, Dutch merchants dominated the Baltic grain trade. They were thus active at sea and able to dump surplus grain on the markets of western Europe. Combined with the physical lack of farmland in Holland, this left little incentive for agricultural investment in the Netherlands itself. Under the circumstances, it is hardly surprising that the exiles continued to ply their commercial pursuits, and chose to seek out new markets rather than those already dominated by their hosts. They were however unable to pursue

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\(^{178}\) Flynn & Giráldez 1995.
\(^{179}\) Parker 1994, pp. 131ff.
\(^{180}\) Rothenburg 1986, p. 40.
\(^{182}\) Boxer 1973, p. 20.
their innovative commercial practices in Holland.\textsuperscript{183}) Being wealthy, experienced in trade and having few options, the merchants of Antwerp were thus important investors when the Dutch United East India Company (VOC) was founded in 1602.\textsuperscript{184})

Like its sister, the English East India Company, the VOC was dedicated to breaking into the markets of the Indian Ocean, and like its sister lacked the silver bullion which eased the way for the Portuguese and Spanish mercantilists. Both companies were dependent upon trade for making profits. This became more important after Japanese restrictions reduced Dutch direct access to Japanese specie after the first quarter of the seventeenth century (Vries & Woude 1997, pp. 434-435). Acquiring this specie meant trading in silks and cotton with China and Bengal, as well as in their own colonies. The profits were magnified in the limited Dutch context because many of the expenses were ultimately covered by these exchanges in Asia and thus Dutch capital continued to grow.

Until the end of the 17th century, there was no local shortage of funds in the restricted economy of the Netherlands: the Bank of Amsterdam even violated its charter by advancing funds to the VOC.\textsuperscript{185}) This resulted in the creation of credit which exceeded deposits, an innovation which (a) went beyond banking practices in Italy and (b) was dependent upon the increased supplies of silver bullion in circulation due the Iberian American silver supplies and the mercenaries in the Spanish Netherlands. It was less adventurous than the innovative lending policies of Antwerp, but apparently secure. At the same time, the VOC itself inadvertently became the first joint stock company in world history, its shares being traded on the bourse.\textsuperscript{186})

\textit{Interest Rates}

All of this increased money supply and economic activity in the Netherlands. The influx of silver via the war in the Spanish Netherlands and the migration of the merchants of Antwerp meant a significant increase in the money supply which exceeded structural changes in the economy, and thus led to a fall in interest rates.

Abundant capital and consistently low interest rates after the first quarter of the seventeenth century proved to be of great benefit not only for trade but also for many industrial activities.\textsuperscript{187})

\begin{flushleft}
\textsuperscript{183)} Vries & Woude 1997, pp. 130-131.  \\
\textsuperscript{184)} Bruijn et al. 1987, p. 2 n. 7.  \\
\textsuperscript{185)} Vries & Woude 1997, p. 133.  \\
\textsuperscript{186)} Vries & Woude 1997, p. 385.  \\
\textsuperscript{187)} Vries & Woude 1997, p. 338.
\end{flushleft}
While identifying the key factor, Vries & Woude have reversed the importance of the development. The low interest rates meant that for the first time in world history it was possible to invest in manufacturing using borrowed money. The low interest rates were made possible by the sustained supplies of silver and the lending policies of the Bank of Amsterdam which lent more than it had on deposit, and thus created even more money than that circulating thanks to the Iberian powers. During the 17th century A.D. Dutch interest rates fell from 6-12% to 1.75-4.5%.¹⁸⁸)

Usury laws were unknown in Holland, but interest rates there were the lowest in Europe. . . As the seventeenth century ended, the Dutch stadtholder became king of England. “Dutch finance” was soon practiced by the English government.¹⁸⁹)

Not only were Dutch interest rates the lowest in Europe: they were the lowest in the world, and the lowest the world had ever seen. The implications of the transfer of “Dutch finance” to England just prior to the industrial revolution cannot be underestimated.

The effect was to increase both consumer and investor demand significantly.¹⁹⁰) Sir John Hicks has linked the fall of interest rates to increased liquidity, and the liquidity—available through advanced financial instruments and markets—to the industrial revolution.¹⁹¹) North has suggested that

The expansion of trade and commerce was the prime mover of the Dutch economy. The expansion of trade led to improvements in the efficiency with which Dutch markets operated. Markets, which develop to reduce transaction costs, are subject to economies of scale . . . A thriving capital market developed alongside commerce and produced innovations of its own. Gradually the existing letter obligatory was transformed into a bill of exchange allowing merchants an expanded means of payment.¹⁹²)

This assumption follows from North’s emphasis on both the recognition of property rights and the emergence of markets as crucial to economic development. This is based on the assumption that modern capitalism emerged out of a European feudal context. It is true that property rights in Europe were limited and that European markets were inefficient. We have tried to show above that property rights and markets had existed earlier in the ancient Near East if not in Rome and feudal Europe. In searching for the origins of modern economic development from the remains of European feudalism, North has neglected the markets of Asia, which were the prime mover in economic developments.

¹⁹⁰) Hancock 1994, with literature.
It was those markets which attracted the European merchants, and not the Baltic where the bill of exchange was uncommon “as late as the mid-sixteenth century”.\textsuperscript{193} The European bill of exchange had appeared in the Mediterranean spice trade, and its expansion into northern Europe accompanied the growth of silver supplies in the Spanish Netherlands.\textsuperscript{194} North attempts to suggest that the efficiency of the markets created the banking mechanisms. It was however not the Dutch markets which had created the most advanced banking mechanisms, as theirs were actually retrograde in comparison to those of 16th century Antwerp, before the exile of that banking community.\textsuperscript{195}

The bill of exchange moved into the Baltic grain trade from Italy and the Asiatic spice trade. The bill of exchange had however been invented centuries earlier in China. Bills of exchange, certificates of deposit, checks and paper money began to appear from around the 9th century in China.\textsuperscript{196}

All of this had appeared—along with numerous inventions—without leading to an industrial revolution.\textsuperscript{197} Evidently the combination of the bill of exchange and technological development was insufficient to change the market mechanism radically. Since the development of sophisticated banking mechanisms is assigned such an important role by North, their failure to have the same consequences in Europe and China is significant.

The fact that the Chinese system emerged as a response to a shortage of funds while the Dutch system grew out of a financial overhang is probably the key to understanding the difference between the two systems. It is evident that both the abundance of labor and the scarcity of silver in China reduced (1) the incentive to exploit labor saving devices and (2) the chances of a fall in interest rates. Interest rates did not fall evenly across the earth: outside Holland they remained high for some time. Even towards the beginning of the 20th century A.D. Chinese entrepreneurs were still inclined towards “banking and speculation” rather than industrial investment.\textsuperscript{198} The abundance of silver and the scarcity of labor had symmetrically opposite effects in the Dutch economy.\textsuperscript{199}

The key was therefore neither the emergence of property rights nor innovative credit, but rather the fall in interest rates, resulting from the increased money supply spurring demand. Hicks argued that the financial liquidity changed

\textsuperscript{193} Vries & Woude 1997, p. 130.
\textsuperscript{194} Vries & Woude 1997, pp. 130ff.
\textsuperscript{195} Vries & Woude 1997, pp. 131-132.
\textsuperscript{197} See Landes 1999, pp. 55-59.
\textsuperscript{198} Gernet 1996, p. 623.
\textsuperscript{199} This therefore falsifies North’s claim. Establishing theories of economic history relies heavily on the principle of falsification, as emphasized by R. Fogel, see, Siegenthaler 1993.
the markets, but it was ultimately the supply of bullion which changed the markets: the failure of the market to cope with the supply of silver forced the interest rates down, rather than the increased liquidity. This development reduced the importance of specie, precisely because it was no longer scarce, and caused a chain reaction through the entire financial system. Until the 17th century A.D., interest rates had been consistently high, frequently determined by the level of rents available from agricultural fields, and thus 30% or so, as was known in the ancient Near East and the European Middle Ages. Until interest rates fell below 3% in 17th century Holland, they had never fallen below 5%, and were usually above 6%. Borrowing money for manufacturing was therefore virtually unknown. Those with access to raw materials could manufacture. Those with access to commodities could realize profits through trade. Manufacturing could not promise profits in the way that trade, agricultural production or money lending did. Investment in manufacturing required capital, and capital was usually quickly transformed into landed property which could guarantee income and respectability. Commerce and manufacturing were not “respectable” professions and thus the property-owners who possessed capital would have little motivation to engage in either, and only commerce promised sufficient profits to justify borrowing.

Money could be borrowed to trade and the incentive existed because of the vast profits it was possible to realize. Lending was only reasonable for agricultural and borrowing for commercial purposes. Commercial exchanges promising trading profits guaranteed high returns, despite the risks. The only way to make a profit was to invest in commodities and then exchange them elsewhere at a profit. The profit could only be secured by shifting the commodities from one place to another, as the Assyrian merchants had moved textiles from Babylonia to secure a profit. In principle, the goals of the Portuguese Empire and the VOC did not differ from those of the Assyrian merchants in Anatolia: all aspired to acquire commodities which could be sold elsewhere at a profit. The difference was that the Portuguese had silver which they could cycle through the economy. The Assyrian merchants had to import tin and textiles and re-export them to get the Antolian silver; the Dutch likewise lacked direct access to silver and were forced to acquire it via the market. The VOC was however able to borrow money in advance to finance its voyages. With few commodities to offer the markets of Asia, the VOC needed to procure commodities which it could sell.

The possibility of borrowing cheaply put the Dutch in an economic position which was unique in history.

Jongman argues that the role of traders and commodities as such was not crucial: the elite had considerable purchasing power in ancient Rome. One of the limits was that manufacturing rarely went beyond local markets, leading to the “consumer cities” with

the road to further growth . . . blocked precisely by the mechanisms which had allowed it to get where it got.  

The drop in 17th century Dutch interest rates made it possible to borrow money in Holland to invest in industry, as Vries and Woude remarked. Since merchants could also borrow cheaply, the risks attending lending for trade made lending to producers more interesting, especially as world commodity trade simultaneously increased. This spurred manufacturing to produce commodities the VOC could sell on the markets of Asia, allowing them to secure profits both at home and abroad. Cheap money was the grease fueling the first modern economy, and manufacturing increased employment and investment at home. As one of the largest employers in the world, the VOC represented a significant fraction of economic activity in the Dutch zone. The proportion of the economy influenced by the VOC did not however only exceed the company’s direct demand and exports, but also provided the crucial outlet which allowed for consumption and production to exceed local demand. The VOC not only supported local manufacturing for exports, but also exported a large proportion of the imports, increasing trade and demand enormously.

The interest rate revolution allowed production to increase, but the increased demand and growing geographical coverage guaranteed that the markets were not saturated and pulled the economy upwards. The world markets available through the ships of the VOC meant that Dutch manufacturers did not need to establish new operations, expanding production in the local markets themselves as the Roman terra sigillata producers had done: trade meant that demand exceeded the local market.

Even with the fall in interest rates, increased trade was not however able to maintain the economy at a high rate of growth. The virtual Dutch monopoly on Japanese silver required trade, and this trade was likewise reduced to commodity exchange after the Japanese progressively forbade the export of gold and silver bullion, in the course of the seventeenth century. The money supply had

once again become inelastic, and thus the growth of demand was limited. The inability to increase—or even maintain—the rates of profit drove the Dutch economy into stagnation. Lethargy and decadence put an end to the prosperity and the “VOC had long ceased being a profitable enterprise” before being nationalized and liquidated at the end of the 18th century.\textsuperscript{206} The Dutch economy faltered after a few centuries, just as the Roman Empire was incapable of sustained growth.\textsuperscript{207}

The industrial revolution can be dated to the 18th century:\textsuperscript{208} beginning just decades after “Dutch finance” was transferred to England. It was a significant development in human history, regardless of whether developments surrounding the industrial revolution itself can be isolated.\textsuperscript{209} For both England and Holland, the increased circulation of silver preceded the revolution,\textsuperscript{210} and in both cases, the desire for trading profits led to investment in manufacturing. The rise in growth rates associated with the actual industrial revolution only followed more than a century after the commercial revolution however. The constraints on the Dutch market also meant that it was only the transfer of “Dutch finance” to England which rendered the transformation possible.

\textit{The Egyptian Development}

Until the 17th century A.D., the money supply was limited by the quantity of silver in circulation, and this restricted demand. Ancient Egypt was effectively exempted because it was partially on the grain standard. Until the creation of paper money and uncovered bank lending, the silver supply had thus limited economic growth, rather than a scarcity of goods. Egypt had overcome the barrier through tax-based demand stimulus. The roles of the market and the state are not entirely compatible, but the complete dependence of a functioning market on a functioning state demands that the role of the state be taken into account in terms of the market, both positively and negatively.

Brumfiel has pointed out that the logic of power and the logic of the market are not the same.\textsuperscript{211} We can consciously distinguish them, but the ancients may not have been aware of abstract—but very real—market forces to the same extent that they admired concrete military power. The state can exploit the

\textsuperscript{206} Vries & Woude 1997, p. 456.
\textsuperscript{207} Cf. Jongman 1988, pp. 23ff.
\textsuperscript{208} Landes 1999, p. 186.
\textsuperscript{209} Greasley & Oxley 1994; Crafts & Mills 1994.
\textsuperscript{210} Ward 1994.
\textsuperscript{211} Brumfiel 1994, p. 2.
market for its own purposes, but only the entrepreneur—not the market—can consciously exploit the state. It is however difficult for the one to function without the other, and thus a symbiotic relationship must be posited. In an era where economic consciousness was less widespread than today, the Egyptian state may have unwittingly lost its power by failing to restrict Syrians from access to its permeable markets. The undisputed power of the Egyptian Middle Kingdom was unconscious of the threats of market forces. It was also noted that market forces were as potent as military ones in reducing uncompetitive actors such as Arad or producing new powers, such as Cyprus.

The market has existed since before the dawn of history. The problem has always been “effective demand”. In conditions of relative poverty, “effective demand” remains stable at a low level. The Egyptian state was able to stimulate demand through taxation, but the system had several constraints. (a) The agricultural basis of the economy guaranteed Egypt a success unequalled in modern Europe, but (b) state managed sales on the markets discouraged Egyptian entrepreneurs from making significant profits through trade, and (c) high agricultural yields will have influenced any private lending and thus maintained interest rates at a high level. This guaranteed a certain level of price stability and prosperity, but the limits were defined by the resulting demand structure.

Three stages of structural change can be traced.

The first was the emergence of the state with an aggressive policy of taxation. This was the only possible means of creating wealth given the overwhelming and prevailing poverty. This policy was successful (except for the interruptions of the First and Second Intermediate Periods) until Ramesses III abdicated responsibility for fiscal policy by transferring substantial income to the temples without transferring responsibility for construction. This led to a transformation in taxation and then of land ownership as private individuals likewise relinquished ownership rights, in order to pay rent in grain rather than taxes in silver.

This first period was accompanied by the growth of the market and Egypt’s integration into the Near Eastern market. The increasing number of foreigners settling in the Egyptian Delta from the late Old Kingdom (late Early Bronze, ca. 2200 B.C.) onwards can be associated with both the growth of the market and the growth of the state. Despite the growth of the market, the agrarian economy remained anchored in the tax policies of the state, and when the state faltered, the economy ceased to grow.

The second structural change therefore emerged at the end of the Bronze Age when property ownership was transferred from the royal and private sectors to the temples. Investment did not automatically follow from increased income, and thus taxation and rent worked as a brake rather than an economic acceler-
ator and the economy thus stagnated. Although the level of wealth was far above the situation two millennia earlier and higher than in many regions of the contemporary Iron Age, the adjustment must be judged unsuccessful, as it did not lead to an increase in wealth. The same constraints kept the market under control while the demand policy did lead to an increase because of the shift in responsibilities. 212)

The third structural change came when the Egyptian state pursued an aggressive policy of intervention to secure the grain markets of the eastern Mediterranean. This policy was initially extremely successful, but the mercantilist policy backfired when Egypt was conquered by militarily active neighbors who exploited Egyptian grain for their own benefit. Egyptian grain played an important role in the growth of trade in the Mediterranean throughout the Hellenistic and Roman periods.

Although technologically backward, Egyptian fiscal policy was the most successful form of economic macro-management until the industrial revolution. The origins of the industrial revolution lie in 17th century Holland when interest rates fell and the need for commodities made investment in manufacturing a profitable way of life. The increased demand for products sold in Asia transformed economic structures around the world, but it was only the increase in money supplies which gave the demand its effective character.

**Demand, Supply, Trade, Markets & Growth Theory**

The key to economic development is thus increasing effective demand. Increasing effective demand was possible in Egypt through taxation and in Holland through borrowing. The quantitative leap in Holland was accompanied by many other

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212) The responsibilities of the temples to guarantee employment is naturally a *non sequitur*, because philosophically the kings had to provide the temples, the temples were not responsible for construction. This imbalance resulted in underused resources. There were other difficulties with “responsibilities” however. It is—of course—not accidental that the eminently adequate Bronze Age “militia” system was not up to demands of the Iron Age—from the Sea Peoples through Darius and Alexander to Caesar. The fact of repeated conquest during the Iron Age does not negate the fact of security during the Bronze Age (with the exception of the Hyksos period, which was brief and incomparable to the disasters of the Iron Age). The relationship may not be either technological or behavioral however. It is possible that the inadequacy of the system can also be sought in concepts of property-ownership. During the Bronze Age, the soldiers were conscious of the relationship between profession and reward. The end of the Bronze Age system and the concurrent transformation of ownership patterns may have led to soldiers to either (a) assume that they were owners without obligations or (b) that their tax-payments were sufficient and thus service not necessary.
phenomena, but the gradual incremental growth can be traced back to economic developments created by the Egyptian and Mesopotamian states thousands of years earlier, through taxation which increased wealth. The creation of credit was as important as Keynes’s later exploitation of credit in the General Theory. Egyptian wealth creation through taxation was the only available form of demand stimulus possible. The effects in the 17th and 20th centuries A.D. of credit based stimulation suggest that demand may be the single most important factor in economic growth.

It is striking that modern economic theory assumes that demand is only decisive in the short term, and that supply is decisive in the long run. This seems to be premised on the belief that economic analysis must assume scarcity as the dominant variable. The evidence from Egypt suggests otherwise, and is particularly striking given the lack of technological innovation, which modern theory assumes to be the very engine of growth. The economy increased significantly, yet the technology employed in Egypt in 1200 B.C. will not have differed significantly from that employed in 3200 B.C.

The only significant difference was the Keynesian policy. The absence of existing wealth left the ancient Egyptian government of the First Dynasty no alternative means of satisfying its own avarice except wealth creation through taxation. They were just as unconscious of the economic significance of their actions as were the Dutch entrepreneurs a few thousand years later. The decisive growth of the modern Dutch economy was however funded through the increases in the supply of silver and credit; the decisive growth in the 20th century A.D. has been made possible by deficit spending and increased demand through injections of credit and investment from outside. Existing technological innovations are exploited when demand arises, and development continues if demand continues.

Demand and thus credit are the decisive features of economic growth. All economic growth reflects the market, as the market is the only means of distributing goods efficiently. Keynes demonstrated theoretically that the market alone could not solve the problem of demand. The ancient Egyptians and the modern Dutch practically altered demand through financial mechanisms. Where the increased demand does not lead to increased supply, the economy falters. Where increased supply exceeds demand, the economy falters.

Polanyi suggested that the market was perfect and therefore transformed

214) E.g., Cameron 1997, pp. 10-11.
215) Schenkel’s (1978) suggestion that irrigation was introduced at the beginning of the Middle Bronze Age (ca. 2000 B.C.) is hypothetical.
society. The evidence suggests however that markets—past and present—are far from perfect, as the markets in antiquity did not function any better than the markets of the West in the Great Depression or the crises of the Far East since 1997. Polanyi was mistaken and Keynes correct: the market alone is insufficient. Demand is not inevitable, and supply is not the limiting factor.

Modern economic theory is dominated by the intersections of the IS-LM Curves. The variables are the GDP (Gross Domestic Product, the total of goods and services in an economy) on the horizontal axis and the interest rate on the vertical axis, with the two curves defining demand for goods (the Investment Savings IS-Curve) and demand for money (the Liquidity Money LM-Curve). Equilibrium is the point of intersection, and thus the equilibrium will be prosperous if on the right or impoverished if on the left. Various factors mean that the two curves can slide up and down, right and left, allowing different levels of equilibria.

The tendency to invest or save depends upon the decision to consume by spending or postpone consumption by saving. The demand for goods declines as the price increases (i.e., fewer people will buy if things cost more), and more will save, and therefore be ready to lend money. The demand for money decreases however as the interest rate rises (i.e., fewer people will borrow if

borrowing is expensive). Lenders will always seek the highest price, but can find that they have priced themselves out of the market. Borrowers will always seek the lowest price, but no one will lend money without interest, and therefore the price of money changes according to demand. The same criteria determine the demand for goods. Money must be borrowed in order to manufacture and sell goods, and spent to acquire them. The two curves must therefore cross one another. The equilibrium point is where people can borrow and lend money and buy and sell goods. The equilibrium changes with changes in expectations, demand and supply.

These two curves therefore define demand. Keynes’s equilibrium with zero savings as the natural state of equilibrium means that the Investment Saving IS-Curve is concave and shallow with a tendency to approach the zero at the lower left corner, meaning the state of poverty. Lowered interest rates diminish the propensity to hold wealth in money, and thus decrease savings and increase the quantity of goods purchased, sliding the equilibrium point down the IS-Curve: people shift money into goods. This can lead to short-term price adjustments, but cannot increase supply by itself, as a lag must precede changes in investment. The shift reduces investment because lending is pointless at low rates of interest, leading to a diminished increase in output through diminished investment. This should induce producers to produce more, and take advantage of low interest rates to increase capacity. This should drive up the interest rate and thus reactivate demand for money, etc., but only if demand continues on an equilibrium growth trajectory. Keynes demonstrated that it did not. The IS-LM model means that the interest rates determine both growth and the rate of growth. The principal assumption of the validity of the IS-LM curve is a market equilibrium based on competition without interference.

The principal effect of this is that a drop in interest rates is a disincentive to investment and production in a \textit{laisser-faire} economy. Keynes remarked that this would lead to poverty. The market is the most efficient method of distributing goods, by compelling rationalization. It should be apparent however that the market cannot create demand: it can only rationalize distribution.

The fundamental clash happens where equilibrium production is limited as investment in productive capacity falls while consumption rises. Income thus fails to rise, or even falls. Under the circumstances, forcing demand up is impossible as supply and income are falling. In modern economic terminology, government spending demand stimulus means shifting the IS-Curve to the right which automatically increases income.\textsuperscript{217} This explicit assumption is not regarded as an essential feature of the equations, but the impact on the interest

\textsuperscript{217} Dornbusch, et al. 1998, p. 222.
rate structure is: government demand will either increase interest rates or inflation or both. The positive and negative features thus balance out, meaning that modern economic theory assumes that the role of the state can be averaged out of the equations leaving development to the markets. Keynes noted that theoretically a laissez-faire economy would be dominated by poverty. Both theoretically and in practice the importance of the state is clear, but the actual significance is not.

Fig. 2. The vertical scale represents investment, savings and consumption with income (Y) on the horizontal scale. Unstimulated investment (I) is constant at a low level; even gradually rising consumption (C) leaves consumption and investment (C + I) rising at a low rate. An increase in investment (I’) leads to a higher level of consumption and investment. This also allows an increase in savings (S) to appear. The ideal level of equilibrium growth would have investment equal to income, guaranteeing infinite growth (E). The discussion in the text suggests that modern economic systems do not explain how demand appears which would increase investment to I’, let alone to E, although the ancient Egyptian state may have come close to succeeding. (After Warburton 1997, p. 113; Screpanti & Zamagni 1993, p. 233)
The ancient Egyptians increased wealth by raising demand to equal supply, meaning that income equaled expenditure. In the modern world, this would necessarily alter both the rate of inflation and the interest rate structure. In ancient Egypt the irrelevance of interest rates meant that the restrictions of the IS-Curve did not apply, i.e., Egyptian fiscal policy was literally infinitely elastic in demand. Rather than turning the IS-Curve from shallow concave to hyperbolic convex, they effectively abolished it, replacing it with an arrow of 45°, making the IS-Curve identical to the optimal LM-“Curve”. It is not entirely a jest to suggest that this optimum E-Equilibrium curve is where the “Keynesian” and “Quantity of Money Theory” Schools effectively meet. Given the poverty of ancient Egypt and the low level of technology, this resulted in the construction of pyramids and temples. This restriction is however essential to grasping the meaning of Egyptian fiscal policy.

Modern industrial economics are dominated by the assumption that a scarcity of goods is the dominant feature of economic life. The Egyptian economy did not face a mere scarcity of goods: there was poverty, underemployment and no credit system whatsoever. By administrative decrees recognizing and assigning land ownership, the government assumed the right to levy taxes. The same was applied to commercial commodity production, and services such as hunting. The very existence of these taxes increased production simply by virtue of the tax itself. Scarcity of goods was banished by administrative decree, but only demand could sustain it: if demand flagged, the system faltered. While the economic implications of the IS-LM Curve are both comprehensive, consistent and compelling, it will be noted that Keynes contended that a pure laissez-faire society would be a state of poverty where investment and savings were near zero. The internal logic of the IS-LM Curve does not therefore square with growth. Most modern economic theory also assumes that supply (rather than demand) is the long term constraint on growth.

The long-run behavior of the economy is the domain of growth theory, which focuses on the growth of productive capacity.

It follows that in the long run output is determined by aggregate supply alone and prices are determined by both aggregate supply and aggregate demand.

The assumption is thus that productive capacity and supply are the limiting factors, and that demand—in the long-term—only determines prices. Growth is therefore linked to supply.

It is possible to throw some doubt on this assumption. The American GNP has grown enormously in the last century, yet

Alan Greenspan, chairman of the Federal Reserve, has suggested that, despite huge increases in America’s GDP, its national output weighs barely any more than it did 100 years ago.\(^{221}\)

If this is true, not only does demand determine supply, but increasing demand alone increases prosperity without altering supply. It is the demand for services (demand *par excellence*) which has increased wealth. Marshall noted that increased capacity produced increased demand, and that the cyclical action was mutual.\(^{222}\) Keynes had gone one step further and suggested that problems arose when demand did not rise to meet supply, and thus identified the crucial feature as demand, not supply.

Modern industry does not suffer from scarcity but overcapacity. This means that as long as producers anticipate increased demand later, the production of goods does not respond to short-term changes in interest rates or demand.\(^{223}\) Employment and supply are thus not dependent upon either investment or demand. Only when inventories cannot be sold does the stockpiling cease, leading to a drop in employment and production long after demand had changed. This can even occur when interest rates are falling and thus creating a more positive investment climate. Expansion of capacity ceases and production actually diminishes only when demand fails to meet the available supply. Superficially this is not always apparent because when (a) productive capacity exceeds demand, banks can (b) lend funds which do not exist to assure continued production, and (c) the largest producers have access to cheap money through the stock market. The result is that the link between demand and supply is severed and that economic downturns only become apparent when stocks are unsold: supply exceeds demand.

In the modern world this severance has two twin bases. (a) Economies across the world are constrained by an “embedded” dislike of unemployment, which impedes economically rational decision-making. (b) This irrational position is supported by the capacity of financial institutions to lend money which does not exist meaning that the money supply can be artificially manipulated to decrease unemployment by financing economically unviable forms of employment. This second feature is further undermined by the fact that interest rates are not controlled by market rules dominating the desire for a limited resource, but rather

\(^{221}\) “A raw deal for commodities.” *The Economist* 17 April 1999, p. 95.
\(^{222}\) Marshall 1920, pp. 89-90.
by administrative decrees of the authorities responsible for the money supply. Ultimately, however, production ceases when demand falls. Capacity outpaces demand because the financial limits on production have been abolished, as in Ancient Egypt, but demand is limited because consumer financial limits still prevail: the problem is demand and not supply. J. Robinson argued that the free operation of market forces leads to an economic structure in which unsatisfied consumers’ needs and excess capacity of firms can coexist.\textsuperscript{224)}

This produces an imbalance exacerbated by scarcity of paid employment (which guarantees the capacity to purchase), not scarcity of goods or demand. In Bronze Age Egypt, employment and demand were intimately linked, and contributed to prosperity, as goods production, investment and employment were all indissolubly linked, based on government demand which was infinitely elastic.\textsuperscript{225)}

The problem for modern economic analysis is highlighted by the treatment of supply in the economics textbook cited above.\textsuperscript{226)} The authors assume that the aggregate supply curve is vertical in the long run and horizontal in the short run, with the demand curve at 45° moving downwards to the right as the price drops and income increases in both cases. In a \textit{laissez-faire} economy, the demand curve would behave this way, and the supply would drop to zero when the price drops to zero: even though demand rose, supply would fall because of the lack of incentives. The supply constraint does not enter into the IS-LM Curve: it is an external assumption, neglecting demand. Some economists assume that demand and supply act autonomously, by arguing that the supply curve flips wildly from vertical to horizontal, so that

When high aggregate demand pushes output above the level sustainable according to the very long term model, firms start to raise prices and the aggregate supply curve begins to move upward.\textsuperscript{227)}

It should be clear that the IS-LM Curve cannot produce demand which should push up the supply curve on its own. Low interest rates encourage in-

\textsuperscript{224)} Screpanti \& Zamagni 1993, p. 255.  
\textsuperscript{225)} The Economist recently noted that the information economy seemed to defy the existing rules (“How real is the new Economy?”; “The New Economy.” The Economist, 24 July 1999, pp. 15-16 & 19-21). Part of their disbelief is based on the premise that productivity should increase if the information economy is to be a credible source of growth. As will be noted, production and supply are not the problems. The difficulty remains demand, and the information economy seems to have created new demand which did not previously exist. The information economy is also characterized by intense competition which results in job and wealth creation rather than shedding jobs and lowering wages. As Keynes pointed out, lowering wages increases a single firm’s competitiveness, but diminishes overall demand.\textsuperscript{226)} Dornbusch, et al. 1998, pp. 8-11.  
\textsuperscript{227)} Dornbusch, et al. 1998, p. 11.
vestment, but discourage the lending upon which the investment is dependent: the market alone cannot create demand. Modern theory would thus explain the lack of growth in antiquity, but not growth in the modern world. Growth is thus inexplicable, both in the modern world and the ancient world; supplies continue to increase although the IS-LM-Curve says that demand should falter.

This would be true—except for the fact that the very existence of the state has increased growth since the third millennium on a scale which was unparallelled in human history. The state is part of the system, but “money” is another. The Dutch economy grew when it released itself from the constraints of monetary scarcity. Römer points out that money in the form of currency facilitates exchange because the currency is accepted as a circulating medium and a store of value. Unbacked paper money can increase demand by encouraging people to accept money which has no intrinsic value in exchange for goods which actually have value. This system was completely logical as long as silver coins served as currency, since the silver had a recognized value. This value was due to its scarcity. The very scarcity that gave silver this role was however also an inhibiting factor, since demand could not significantly exceed the supply of silver. This was true of most economic systems from the middle of the first millennium B.C. until the middle second millennium A.D. During the Bronze Age however, the agricultural taxes collected in grain meant that economic systems were not dominated by the scarcity of silver.

Barter exchange meant that demand was effectively limited by supply, as posited by the authors of the economics textbook cited above. Modern industrial and currency systems have however liberated supply from demand and vice versa. The economic parameters which dominated in the Bronze Age have reappeared with the collapse of Bretton-Woods, since demand is no longer limited by the supply of precious metals. During the Bronze Age this was the result of taxation. In the modern era, it is the result of government guarantees. In both cases the decisive factor was the state.

Conclusions

The paradox is thus complete: modern theory can explain the functioning of ancient markets, yet modern markets do not obey the theoretical constraints of modern economic theory.

The markets in antiquity did not function as markets do in the modern world.

228) Römer 1998.
229) Dornbusch et al. 1998.
It has hitherto been assumed that the early economies were “redistributionist” or “tribute” economies and that this affected the level of supply and demand in a technologically primitive society. This merely attempts to deny the relevance of the market. Markets of the second millennium B.C. functioned much like modern or medieval markets, obeying demand and supply. The attitudes of the participants cannot be contrasted very easily: where demand and supply are constrained by scarcity, the market is the most efficient means of allocating goods, and those prepared to take advantage of this will always be found.

This historical problem has been compounded by the failure of economists, archaeologists and historians to distinguish the relative importance of technological development, financial instruments, demand, supply, growth, trade, prosperity and wealth. The theoretical importance of “scarcity” as a dominant paradigm has therefore resulted in a tendency to seek the origins of growth by identifying an “accumulation of capital”.

It should be evident that the origins of Egyptian wealth were not accumulation, but rather that the accumulation was made possible by the political apparatus capable of enforced demand stimulus. States may encourage the development of prosperity and abundance, but they are not efficient at distribution. The inefficiency of the state as an economic actor is proverbial, as reflected in the failure of the Egyptian state to lift the economy beyond the agrarian, and the commercial failure of the VOC once it had become an arm of the state. The distinction between the most efficient means of creating wealth and the most efficient means of distributing wealth is essential. The market can allocate. It cannot create demand.

The case of the demand stimulus economy in ancient Egypt is the purest example, but indicates that demand is more important than either supply or technology. Demand alone can increase supply in the long run. Where the state interferes in the markets, it changes the demand curve, which alone changes the supply curve. Lowering interest rates has a similar effect. Because of its effects on interest rates and inflation, it has hitherto been assumed that state intervention in a market economy would be negative, irrelevant or of only short-term importance because it was widely assumed that the laissez-faire market system functioned autonomously. Keynes demonstrated that this was not the case in the modern world. The application of Keynesian theory to ancient Egypt is extremely important because this demonstrates that the role of the state was fundamental to the market, and not extraneous to it. Demand changed supply.

The fundamental flaw in modern economic theory is thus the assumption that supply supposedly limits growth. The only explanation for this assumption must lie in a presumed scarcity of goods. Scarcity of goods characterized all economic activity until recently, but industrial over-capacity and unemployment are the primary characteristics of the modern economy: i.e., demand for goods and
demand for employment are the major obstacles to growth, and not a shortage of goods.

The distinction should not therefore be between a “market” and “pre-market” system, but between a “market” system and a “capitalist” system. It is “not an accident” that Karl Marx’s book is entitled Das Kapital and not Der Markt.

The surplus of Chinese and Japanese goods on the American market reflects a lack of effective demand in their home countries and a corresponding demand in the U.S., but not a scarcity of goods in either China or Japan. Local Chinese demand would explode if the consumers were financially empowered. American demand is created by debt: between 1989 and 1997, company debt rose from 29% of GNP to 44%, and the figure for 1998 “was certainly much higher”.230) The increase in debt has created wealth and employment in both the U.S. and the foundering economies of the Far East, suggesting that supply is not an essential feature of economic activity, let alone the fundamental obstacle to economic growth.

In light of the role of credit-induced demand in transforming the modern economy, it is hardly surprising to note that most of the modern “economic” crises are actually “financial” rather than “economic” in character: from the “tulip bust” to the meltdown of the “East Asian Tigers”, the issue has always been demand rather than supply. Joining the chorus of those who abhor the volatility of financial markets, the Financial Times echoes the thoughts of many when stating

Manias, panics and crashes are the nature of the financial beast. . . . The financial storm which started with Thailand’s devaluation in July 1997. . . . was the result of the fickleness of the herd. Investors piled into East Asia at the start of the decade with scant regard for risk. When the mood changed, investors bolted in the opposite direction with equally scant regard for economic fundamentals.231)

As the editors rightly observe, there was little rational reason to invest recklessly in East Asia: but the investment lifted the level of activity in the region. There was equally little reason to withdraw: the result was to diminish economic activity temporarily in the region. The financial input increased the level of activity, and the withdrawal of the means diminished it. Keynes defined the situation quite clearly:

Pyramid-building, earthquakes, even wars may serve to increase wealth if the education of our statesmen on the principles of classical economics stands in the way of anything better. . . . Just as wars have been the only form of large-scale loan expenditure which statesmen have thought justifiable, so gold-mining is the only pretext for digging holes

in the ground which has recommended itself to bankers as sound finance; and each of these has played its part in progress—failing something better.\textsuperscript{235)}

The fundamental problem of economics is the incapacity of the market alone to satisfy needs. The market is the most efficient method of distributing a limited given supply of goods where entrepreneurs are permitted profits as the reward for distribution. Dependent on scarcity, markets alone are however not ideal mechanisms for creating abundance. The entire basis of trade from the time of the Old Assyrian merchant colonies\textsuperscript{233)} to the modern Overseas Chinese communities in East Asia has been the principle of acquiring profits by reducing transaction costs: it is not motivated by a fair distribution of goods or secure employment or economic growth. Consumers require the goods, increasing demand, but their demand is constrained by financial limitations. The market depends upon scarcity, pushing competition.

The scarcity of silver and the absence of uncovered lending before ca. 1600 A.D. kept interest rates high. This kept the supply of goods down. This made it wise and profitable to lend funds to merchants who hoped to realize vast profits by shifting commodities from market to market. The high rates of return combined with the scarcity of silver likewise made it equally inadvisable for manufacturers to borrow money to invest in production, with a mere view to increasing quantities within a single market. The fall in interest rates promised modest profits for manufacturers willing to invest in production, and increased trade simultaneously guaranteed larger markets. This led to increasing abundance of products.

Despite reduced costs however, increased trade alone did not increase profits for the VOC. The impediment was not transaction costs (where the Dutch were particularly gifted in offering lower rates on most routes), but rather balancing supply and demand in a more competitive market, particularly after the Seven Years War. Reducing transaction costs may ease the profit-making process, and the competitive market may make the best choices, but the market alone does not generate demand, without liquidity or credit.

Understanding these developments has been difficult for several reasons. One of them was a lack of communication between economists and students of the ancient world. Janssen argued that use of modern theory was

\begin{flushleft}
obnoxious since it tends to blind [the Egyptologist] to the fundamental difference between the modern Western world and ancient Egypt.\textsuperscript{234)}
\end{flushleft}

\textsuperscript{232)} Keynes 1936, pp. 129-131.  
\textsuperscript{233)} Veenhof 1972; Larsen 1976.  
\textsuperscript{234)} Janssen 1975b, p. 131.
It can now be argued that it was precisely this attitude which prevented an understanding of economic development. Understanding economic theory can (a) aid in understanding effects—as opposed to goals—and (b) help recognize unconscious assumptions about economic activity. An understanding of ancient economic systems promises to contribute significantly to economic theory, rather than merely benefit from it. Many of the arguments about the emergence of the modern world are based on the contention that markets did not exist, rather than recognizing their existence and examining their role.

The development of the state has been associated with the concept of “control” and “administration”, and hence, “tribute”, etc. Failures were ascribed to the absence of a market, rather than a failure to behave as we would expect. This failure to recognize that markets existed in antiquity allows many observers to avoid the issue of why they did not function. The importance of the market in the modern world has led economists to assume that scarcity—as the prime mover of the market—is the basic principle of economics, rather than merely the basic principle of the market, but not economics. An examination of economic parameters may allow processes in both the modern and ancient worlds to be recognized, by understanding them rather than positing them.

Demand stimulus guided by the irrationality of the market has produced substantially more wealth than state intervention, but the significance of state intervention in ancient Egypt cannot be compared to state intervention in the modern world. Debate about the role of the market merely distracts from an understanding of the system in which fiscal policy worked with—rather than against or without—the market. The economy of ancient Egypt appears quite alien to a modern observer because the market alone has never been able to deal with agricultural issues, yet the ancient Egyptian state was more successful here than modern industrial economies.

The efficiency of the market depends upon scarcity. Prosperity depends upon abundance. The market thus does not create prosperity deliberately. Although the state is not efficient at distribution, state demand and spending have contributed to the creation of wealth in the last five thousand years.


236) Markets were probably far more important for even the larger agrarian states of the ancient Near East than they were for ancient Egypt, and thus basing this argument for the economies of early agrarian states on Egypt emphasizes the market less than would need to be the case for other examples. These states were however likewise obliged to seek recourse in the market in order to transform their grain income into silver, as Charpin (1987) has shown for Babylonia in the first half of the second millennium B.C. The Egyptian economy comes closer to the paradigm and can thus better illustrate the general fashion in which these economies functioned.
The ancient Egyptian state transformed the demand structure by denying the parameters. Financially and economically, the prosperity of Bronze Age Egypt can be partially ascribed to unconscious Keynesian demand stimulus based on wealth creation through taxation. Agricultural income was balanced with investment elsewhere, and employment grew in pace with income, production and revenue with an equilibrium of constant growth as long as the government maintained the policy. Where the policy faltered, the economy did not suffer from a shortage of investment or goods, but rather from underemployment and lack of demand. The fundamental strength of the economy when well managed is as clear as its weakness when ill-managed. It was only the abandonment of Keynesian policies which led to ruin, an abandonment which was unintentional as the rulers were unconscious of the economic implications of their actions, which makes the earlier feat all the more remarkable.

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