

## SEVEN

### THE PTOLEMAIC PERIOD (332–30 BCE)

The Ptolemaic Period began when Alexander the Great defeated the Persians in Egypt in 332 BCE. After he died in 323 BCE, his generals divided up his empire and Ptolemy took Egypt. Initially the generals ruled in the name of Alexander's heirs, but Ptolemy proclaimed himself king in 305 BCE. He and his successors continued to rule Egypt until the Romans conquered it in 30 BCE, suppressing several revolts including one in Upper Egypt, 205–186 BCE. The Ptolemies initially ruled from Memphis but soon moved the royal court to Alexandria, which Alexander the Great had founded on the northwest coast of Egypt. They also introduced Greek as an administrative language alongside Egyptian. (See Map 7.1 and Table 7.1).

#### CRIMINAL JUSTICE

In the Ptolemaic Period, as in earlier periods, interference with royal revenues was handled by the criminal justice system, which applied a body of law established by royal decrees. The king was the head of the criminal justice system, and indeed of the entire judicial administration, and could and did hear cases himself. In earlier periods, however, kings usually distanced themselves from the routine activities of the judicial administration by delegating them to a vizier and a high court. In contrast, the Ptolemaic kings presented themselves as personally responsible for the judicial administration, without the formal

MAP 7.1. Egypt in the Ptolemaic Period



assistance of a vizier or a high court. In doing so, the Ptolemies acted in accordance with the Macedonian model of kingship, in which the king embodied the state in his own person.<sup>1</sup>

As in earlier periods, subjects could air their grievances with a letter of complaint to the king or one of his officials. However, the Macedonian model of kingship encouraged subjects to approach their king for justice, and

TABLE 7.1. *The Ptolemaic Period***The Ptolemaic Period (332–30 BCE)***Macedonian Dynasty (332–305 BCE)*

Alexander “the Great” (332–323 BCE)

Philip Arrhidaeus (323–317 BCE)

Alexander IV (317–310/305 BCE) – Died in 310 BCE, nominal ruler until 305 BCE

*Ptolemaic Dynasty (305–30 BCE)*

Ptolemy I (305–285 BCE)

Ptolemy II (285–246 BCE)

Ptolemy III (246–221 BCE)

Ptolemy IV (221–205 BCE)

Ptolemy V (205–180 BCE) – Revolt of Haronnophris (205–199 BCE), and

Chaonnophris (199–186 BCE)

Ptolemy VI (180–145 BCE) – Joint reign with Ptolemy VIII (170–163 BCE)

Ptolemy VIII (145–116 BCE) – Joint reign with Cleopatra II (131–116 BCE)

and Cleopatra III (124–116 BCE)

Cleopatra III and Ptolemy IX (116–107 BCE)

Ptolemy X (107–88 BCE) – Joint reign with Cleopatra III (107–101 BCE)

Ptolemy IX (88–80 BCE)

Ptolemy XII (80–51 BCE)

Cleopatra VII (51–30 BCE)

*Source:* Dates after Ian Shaw (ed.), *The Oxford History of Ancient Egypt* (Oxford: University Press, 2000), pp. 479–483.

consequently just under half of all letters of complaint were addressed to the king (173 out of 402 examples).<sup>2</sup> Letters to the king were known as petitions (*enteuxeis*), and were written in Greek. The address was not always a formality, because petitioners could and sometimes did personally deliver petitions directly to the king, if they happened to be near the place where the king was.<sup>3</sup> Furthermore, the king did at least sometimes personally read the petitions that were personally delivered to him, even if he then delegated the cases to one of his agents, such as the local provincial governor (*stratēgos*).<sup>4</sup> More often, however, petitioners addressed their petitions to the king but delivered them to one of his local agents, usually a provincial governor, who dealt with it on his behalf.<sup>5</sup>

Beneath the king, the Ptolemaic state administration was divided into three sections. One section was concerned with maintaining order and enforcing the law, and consisted of the regional governor (*epistratēgos*), the provincial governors (*stratēgoi*) and their local commissioners (*epistatai*), and the provincial police commissioners (*epistatai phylakitōn*) and their local chiefs of police (*archiphylakitai*) and policemen (*phylakitai*).<sup>6</sup> Another section was concerned with economic documentation. The royal scribes (*basilikoi grammateis*, Egyptian *sh pr-ꜥ3*) in each province, and the district scribes (*topogrammateis*, Egyptian *sh mꜥ3*) and village scribes (*kōmogrammateis*, Egyptian *sh tmy*) under them, made

cadasters of land and censuses of people and livestock, and calculated the harvest and money taxes that they owed the state. The royal scribes and their auditors or checking scribes (*antigraphais*) also checked the books of tax collectors, and supervised payments subsequently made by royal granaries and banks.<sup>7</sup> The third section was concerned with economic management. The provincial managers (*oikonomoi*, Egyptian *shn*) in each province auctioned off the rights to collect money taxes to tax collectors on the basis of the censuses and cadasters. The sections concerned with economic documentation and management both reported to the chief finance minister (*dioikētēs*, Egyptian *snty*) and to the under finance ministers (*hypodioikētai*), who in turn reported to the king.<sup>8</sup> It was the section concerned with maintaining law and order that received petitions to the king and dealt with them on his behalf. The provincial governors could give decisions or delegate cases to the courts, and they could order their subordinates to enforce the decisions.

In earlier periods of Egyptian history, subjects often approached the vizier and other officials for justice, rather than the king, and this practice continued under the Ptolemies. Letters addressed directly to agents of the king account for just over half of all letters of complaint (229 out of 402 examples). To distinguish them from petitions to the king (*enteuxeis*), these letters were known either as memoranda or reminders (*hypomnēmata*, Egyptian *mkmk*) or short reports or declarations (*prosangelmata*). Most were written in Greek (196 examples), but some were written in Demotic (33 examples).<sup>9</sup> Memoranda or reminders were submitted to higher-ranking officials, while short reports or declarations were directed at lower-ranking officials. In the late Ptolemaic Period, the distinction between petitions and memoranda began to fade, and the distinction between memoranda and reports as well, ultimately giving rise to the more uniform Roman petitions.<sup>10</sup> Most memoranda and reports were addressed to officials primarily concerned with maintaining law and order, such as the regional governor (*epistatēgos*), the provincial governors (*stratēgoi*) and their local commissioners (*epistatai*), and the provincial police commissioners (*epistatai phylakitōn*) and their local chiefs of police (*archiphylakitai*). Nonetheless, a significant number were also addressed to officials in other sections of the state administration, such as the chief finance minister (*dioikētēs*), the under finance ministers (*hypodioikētai*), the provincial managers (*oikonomoi*), and the village scribe (*kōmogrammateis*), presumably because the complaints were thought to fall under their purview.<sup>11</sup>

Higher officials who received petitions often delegated responsibility to lower officials, who frequently engaged the local police (*phylakitai*). Local police could also investigate suspected criminal activity on their own initiative, as well as at the request of their superiors. They conducted searches, seized property, and interrogated and arrested suspects. Suspects were then brought

or summoned to examinations (*episkepseis*) before one or more officials who delivered judgment.<sup>12</sup> Officials also assigned local police, wayfarers (*ephodoi*), and various kinds of guards (*phylakes*) to protect state fiscal interests, violation of which was clearly considered criminal. They guarded crops before and during the harvest, as well as harvest taxes afterward. They were present at state auctions of property and tax farming contracts, and assisted tax farmers with the collection of money taxes. They also patrolled the river, canals, paths, and deserts, and helped collect tolls at guard posts.<sup>13</sup> Local police and wayfarers were state agents, who received a salary or sometimes a grant of land.<sup>14</sup> Guards were often part-time state agents or private employees.<sup>15</sup>

#### PROPERTY DISPUTE RESOLUTION

In the Ptolemaic Period, private property disputes that did not involve royal revenues were usually handled by the court system, which applied traditional Egyptian and Greek property laws. There were in fact two sets of courts in Ptolemaic Egypt. The provincial Houses of Judgment (*ἡ σύγκλητος*) were linked to local Egyptian temples, and remained the primary courts of Egyptian judges (*laokritai*) through the Ptolemaic Period. The Ptolemies also established courts of Greek judges (*chrēmatistai*) for the benefit of Greek immigrants, alongside the courts of Egyptian judges. The relationship between these two sets of courts is discussed in one of a set of royal decrees issued in 118 BCE after the civil wars among Ptolemy VIII, Cleopatra II, and Cleopatra III. Official copies of the decrees were circulated throughout the country, and one official in Tebtynis made a personal copy that became *P. Tebt. I, 5*. The copy seems to be corrupt, because the phrase “Egyptians against Greeks” is repeated twice in the first paragraph. If the second occurrence of the phrase is corrected to “or Egyptians against <Egyptians, and Greeks> against Greeks,” the decree can be read to state that disputes arising from notarized contracts written in Demotic should be judged by the Egyptian judges (*laokritai*), while disputes arising from contracts written in Greek should be judged by the Greek judges (*chrēmatistai*), and that the ethnicity of the parties involved was irrelevant. This reading of the decree would provide for a return to earlier practice after irregularities during the civil wars, rather than introducing a new practice.<sup>16</sup>

***P. Tebt. I, 5, re-edited as Corp. Ord. Ptol. 53, lines 207–220:***

(207) And they have decreed, both concerning suits brought by Egyptians against Greeks, and concerning (suits) by Greeks against Egyptians, or Egyptians against Greeks, of all classes

(210) – with the exception of those who farm royal land and those who lease royal monopolies, and the others who are involved with the state revenues –

that the Egyptians who have made contracts in Greek with Greeks shall give and receive satisfaction before the Greek judges (*chrēmatistai*), while the Greeks (215) who have concluded contracts in Egyptian (sc. with Egyptians) shall give satisfaction before the Egyptian judges (*laokritai*) in accordance with the laws of the country (i.e. Egyptian laws).

The suits of Egyptians against Egyptians shall not be taken by the Greek judges (*chrēmatistai*) to their own courts, but they shall allow them to be decided before the Egyptian judges (*laokritai*) in accordance with the (220) laws of the country.

**Egyptian Courts:** Ptolemaic Egyptian courts are relatively well known, thanks to a family archive from Assiut, which contains thirteen Demotic papyri, including a record of a court trial.<sup>17</sup> In 170 BCE, the woman Chratianch sued her brother-in-law Tefhape to obtain his share of his father's property. The Demotic Papyrus British Museum 10591 records the composition of the court, the written arguments and documents submitted to the court, and the court's decision in favor of Tefhape, who received the court record. The papyrus describes the composition of the court as the judges (*n3 wpty.w*) of the priests (*n3 w<sup>c</sup>b.w*) of the god Wepwawet and the deified Ptolemies, being three men who sat in the House of Judgment of Assiut (*p3 <sup>c</sup>.wy wpy n Sywt*). A Greek state representative called the introducer (*eisagōgeus*, Egyptian *p3 3ysus*) sat with them, and brought the lawsuit before them.<sup>18</sup>

Egyptian courts judged property disputes arising from Egyptian documents according to Egyptian property law. Several papyri from the Ptolemaic Period preserve fragments of Egyptian property law codes, including the Legal Code of Hermopolis West, dated to the third century BCE;<sup>19</sup> the Zivilprozeßordnung from Hermopolis, dated to the third or second century BCE;<sup>20</sup> P. Berlin P. 23757 recto from Akhmim, dated to the third century BCE;<sup>21</sup> P. Florence Istituto Papirologico "G. Vitelli" + P. Carlsberg 301 from Tebtynis, dated to the first century BCE;<sup>22</sup> and P. Berlin P. 23890 and P. Carlsberg 628.<sup>23</sup> The texts on these papyri may be much older than the papyri themselves, however, dating back at least to the Saite Period,<sup>24</sup> if not earlier.<sup>25</sup> These law codes are phrased as a series of prescriptive if-then statements that describe hypothetical situations, and then the legal procedures and formulae to be used in these situations. This has led some scholars to suggest that they were legal manuals rather than law codes, but such a distinction seems unlikely. The ancient Egyptians regularly expressed mathematical, medical, and even philosophical principles as prescriptive or didactic if-then statements, and thus would probably have expressed law codes in the same way. This seems to be confirmed by the lawsuit of Chratianch, which also cites laws in the form of prescriptive if-then statements,<sup>26</sup> suggesting that this was indeed the manner in which the ancient Egyptians codified their laws.

The largest, best preserved and best studied fragment of an Egyptian law code is the so-called Legal Code of Hermopolis West.<sup>27</sup> It was found during excavations at Tuna el-Gebel, a necropolis of Hermopolis, and probably dates to the third century BCE. It preserves several groups of hypothetical situations and prescriptions, which display a thematic organization.

**Legal Code of Hermopolis West:**

Lines 1,1-2,11: Rules for leases of fields.

Lines 2,12-22: Rules for using a public protest to prevent someone from obtaining clear title.

Lines 2,23-3,2: Rules for using leases to obtain clear title.

Lines 3,2-4,6: Rules for leases other than fields.

Lines 4,6-5,31: Rules for annuity contracts.

Lines 6,1-7,17: Rules for establishing proof of title.

Lines 7,18-8,29: Rules for construction.

Lines 8,30-9,26: Rules for intestate inheritance.

Lines 9,26-29: Additional rules for using leases to obtain clear title.

Another important fragment of an Egyptian law code is the so-called Zivilprozeßordnung, probably from Hermopolis, and probably dating to the third or second century BCE.<sup>28</sup> It contains at least two groups of hypothetical situations and prescriptions. The best preserved group concerns disputes about transactions, thereby giving the Zivilprozeßordnung its name.

**P. Berlin 13621 + P. Giessen UB 101.3 recto, column 2, lines 1-18:**

(1) [...] (2) Number 13. Concerning a document, which one will take.

(3) Makes 43 its year.

(4) [The] person who writes concerning something, and [the] person for whom he makes the *sh*-document: writes concerning something (means) he will be far from the law of the *sh*-document, which he has made for him.

(5) [The] person, who complains [against a man, saying] “he has seized a house, agricultural land, or cattle/an office belonging to me”: If one of the people brings a *sh*-document concerning it, saying: “He has written concerning [the thing ...]” (6) one will cause that he is far from him. [If he says]: “I have not written,” one will cause that he swears after his statement upon it (the *sh*-document), “I am after you [...]” (7) upon it [...]

(8) If a person complains [against a person] saying: “he made for me a *sc.t*-document ... money for me. He has not given it to me.” If the person against whom he complains [says: ...] (9) If he says: “I have not made it for him,” one will cause that he swears. The *sc.t*-document possesses no witness. If it happens that it possesses witnesses [...] (10) the one who will do it.

(11) The person who complains verbally, gives to them an oath, the one that they will make him, according to their words.

(12) The person who complains against a person, and whose law is drawn up, if it happens that they are before the judges, if it happens that they read [...]

(13) [The person] who complains against his companion, saying: “He seized something belonging to me until Year 20 before today,” one will not listen to him. If it happens that ...

(14) If a person complains against a person concerning money, while he says: “I will give it to him in such-and-such a town.” If the person against whom he complains [...] (15) in the town in which he complained against him.

(16) If [a person] complains against a person, saying: “he has seized such-and-such a document belonging to me,” while he says “I have not taken it,” one will cause that he swears, saying: [“the document which he says ‘you have taken it from me,’] (17) I have not taken it, I have not caused that one take it, I have not done anything on the earth to cause that one take it, I have not destroyed it, [I have not caused that one destroy it, I have not done anything on the earth to cause] (18) that one destroy [it, I have not erased it, I have not] caused that one erased [it, I have not done] anything [on the earth to cause that one erased it ...”]

The *Zivilprozeßordnung* suggests that provincial Houses of Judgment could hear cases arising from all kinds of Demotic documents, and not just contracts authenticated by temple scribes and witnesses and state notaries. However, the *Zivilprozeßordnung* and the lawsuit of Chratianch suggest that such contracts were given precedence over other Demotic documents, and all documents were given precedence over oral testimony. The same preference for written over oral testimony appears in the expanded title guarantee in Demotic contracts. The *Zivilprozeßordnung* suggests that provincial Houses of Judgment required oaths to support unauthenticated documents and oral testimony. Failure to take an oath discredited such documents and testimonies, giving the oaths a decisive character. Such decisive oaths were often used to resolve accusations of adultery or theft during marriage.

**Greek Courts:** By the third century BCE, the Ptolemaic kings organized a series of state courts (*kritēria*) in the provinces consisting of three Greek judges (*chrēmataistai*), to which the state representative called the introducer (*eisagōgeus*) could bring cases involving Greek contracts.<sup>29</sup> It has been argued that these state courts gradually superseded a series of locally organized courts (*dikastēria*), composed of local Greek judges (*dikastai*) for Greek cases and Egyptian judges (*laokritai*) for Egyptian cases, and mixed courts (*koinodikia*) for cases involving both Greeks and Egyptians, which disappeared in the second century BCE.<sup>30</sup> This interpretation should be rejected, however, because



it erroneously privileges distinctions in Greek terminology over similarities in usage, because the state introducer (*eisagōgeus*) also brought cases before the “local” Greek judges (*dikastai*) and the Egyptian judges (*laokritai*). The “local” courts (*dikastēria*) and “local” Greek judges (*dikastai*) were probably just the generic terms for the state courts (*kritēria*) and Greek judges (*chrēmatistai*). The generic terms probably gradually dropped out of use as the technical terms came into more general use.

**Private Social Control:** Individuals frequently turned to private social networks to document and enforce agreements and to resolve disputes, as well as to agents of the king and local Greek and Egyptian courts. Most individuals participated in at least one horizontal social network, such as their extended family or their local community, and usually they belonged to several. Members of such networks could serve as witnesses to verbal or written agreements, and they could apply social pressure to fellow members to enforce the agreements, and to resolve disputes arising from them.

Private associations were a more formalized form of horizontal social network. Private associations in Ptolemaic Egypt typically drew up rules regulating the behavior of their members for one year, after which time the associations drew up new rules and could change members. These rules required members to pay annual dues, to participate in and make contributions for periodic religious ceremonies and social drinking, and to aid fellow members in need and behave civilly toward each other. The rules also required members to pay fines when they transgressed any of the rules.<sup>31</sup> Some of these rules and fines were clearly intended to help the association enforce agreements and resolve disputes among members, as in *P.Assoc. Cairo 30605*, lines 19–20, from Tebtynis dating to 145 BCE.<sup>32</sup> These rules fined members who disputed with other members before consulting with the association, and fined them more if they continued to dispute after consulting the association.

***P.Assoc. Cairo 30605, lines 19–20:***

(19) The man among us who will give trouble to a man among us before the military or civil authorities, (who) will interfere, (who) has not complained before the members of the association previously, his fine will be 50 deben.

The man among us who will complain ..., after the law has been made for him (20) in the association, after he has complained about it in it, his fine will be 100 deben.

Monson has suggested that the members of private associations were relatively well off, because the dues and fines sometimes exceeded the annual income of average farmers.<sup>33</sup> He notes that the membership of associations sometimes included priests, but did not exclusively consist of them.<sup>34</sup> He also argues that the dues and fines were high to encourage commitment to the associations

and to thereby help build trust, much like the mandatory joint participation in religious ceremonies and social drinking. He emphasizes that the resulting trust would have enhanced the ability of private associations to enforce agreements and resolve disputes among members, beyond the rules and the fines.<sup>35</sup>

Some individuals also participated in vertical social networks that created bonds of mutual obligation that can be described as patronage.<sup>36</sup> The officials or institutions providing this patronage were expected to protect their clients from other authorities.<sup>37</sup> Officials did so by using their authority to intervene on behalf of their clients in disputes,<sup>38</sup> while temples provided asylum to their clients.<sup>39</sup> Some royal decrees grant the right of asylum to specific temples, while other royal decrees prohibit officials and temples from giving protection to specific categories of individuals, suggesting that the state recognized patronage as a formal relationship.<sup>40</sup>

#### DOCUMENTATION OF OBJECTS OF TAXATION

As previously noted, one of the three sections of the Ptolemaic state administration was primarily concerned with economic documentation. This section of the administration consisted of village scribes (*kōmogrammateis*), who collected information locally and reported it to district scribes (*topogrammateis*), who summarized it and reported it to the royal scribes (*basilikoi grammateis*) in each province. The royal scribes then further summarized the information and reported it to the chief finance minister (*dioikētēs*) and under finance ministers (*hypodioikētai*) in Alexandria.<sup>41</sup> In some form, this section of the administration probably dates back to the Saite and Persian Periods. The office of chief finance minister is attested in both the late Saite and Persian Periods,<sup>42</sup> and the family that held the office of royal scribe in the Thebaid in the early Ptolemaic Period performed some of the same functions prior to the conquest of Egypt by Alexander the Great.<sup>43</sup> In the Ptolemaic Period, one of the tasks of this section of the administration was the documentation of objects of taxation, such as people, animals, and fields. As in earlier periods, the Ptolemaic documentation of objects of taxation took two main forms, a survey of fields, and censuses of people and animals.<sup>44</sup>

**Field Surveys:** Fragmentary Demotic and Greek papyri preserve portions of several Ptolemaic field surveys and related documents dating to the third and second centuries BCE. The field surveys were used to calculate harvest taxes, as in earlier periods. There were two surveys each year. The village scribes conducted the first survey after the Nile inundation had subsided in the Nile Valley, or in September in the Fayum, but in either case before the fields were sown. They measured all of the land in each village, cultivated or not, and recorded its owners and its category or use. The village scribes conducted the second

survey in February, a couple of months before the harvest. They measured all of the cultivated land in each village, and recorded its owners and category or use.<sup>45</sup> In Upper Egypt, they sometimes also issued a receipt of measurement (*r-rh̄=w* text) to the landowners. The second survey was used to calculate the harvest taxes on the fields, which were collected during the harvest in April or May. The amount of taxes was proportional to the amount of land cultivated at the time of survey, rather than the actual amount of the harvest. This protected the state from the risks of bad harvests and harvest fraud. Some receipts of measurement also include a calculation of the taxes owed.<sup>46</sup>

In previous periods, the state took responsibility for surveying and collecting harvest taxes from state agricultural lands, and assigned to temples the responsibility for surveying and collecting harvest taxes on temple lands. Initially, the early Ptolemies continued this arrangement. On the one hand, the state directly administered and taxed the grain-producing agricultural land known as royal land (*basilikē gē*), and taxed other grain-producing agricultural land that had been entrusted to officials as gift estates (*dōreat*), and to reserve soldiers or cleruchs (*klērouchoi*) as cleruchic land (*klerouchikē gē*). It also taxed orchards and vineyards on private land (*idiōtikē gē*). On the other hand, the temples continued to administer and tax the grain-producing agricultural land as well as orchards and vineyards classified as temple land (*hiera gē*).<sup>47</sup>

In the course of the Ptolemaic Period, however, the state assumed responsibility for surveying and collecting harvest taxes from temple as well as state lands. Papyrus Revenue Laws, columns 24–38, reveals that the state began administering and taxing orchards and vineyards on temple land in Year 23 of Ptolemy II (263 BCE). It indicates that responsibility for surveying orchards and vineyards on temple as well as state lands was assigned to the royal scribe (*basilikos grammateus*) in each nome or province (columns 33 and 36–37). The responsibility for collecting the one-sixth or one-tenth harvest tax on wine produced from orchards and vineyards was assigned to the provincial manager (*oikonomos*) (columns 31 and 33). The tax could be paid either in wine or in money, but the provincial manager auctioned off any wine that was collected so that the money value of the entire tax could be subject to tax farming. The revenues from this tax were then dedicated to the cult of the deceased and deified Queen Arsinoe II Philadelphus, which was carried out in the temples. This no doubt made the state diversion of these revenues more acceptable to the temples.<sup>48</sup>

**Papyrus Revenue Laws, column 33:**<sup>49</sup>

(33) The [provincial manager (*oikonomos*)] shall examine the [wine], as much as remains, and taking with him the tax-farmer, the checking-scribe (*antigraphus*) and his agent, shall jointly with them sell the wine, giving the [tax-farmers (?)] time in which to settle their accounts, and exacting

payment of the [amounts] he shall put them down in the account of the tax-contract to the credit of the tax-farmers.

The royal scribes (*basilikoi grammateis*) shall, within ten days from the day on which they proclaim the auction, notify to the tax-farmers how many vineyards or orchards there are in each nome, with the number of arou-ras (which they contain), and how many vineyards or orchards belonging to persons on the tribute list paid the tax to the temples before the twenty-second year. If they fail to make out the list, or if they are discovered to have made it out incorrectly, if convicted in a suit, they shall pay to the tax-farmers for every mistake of which they are convicted 600 drachmas and twice the amount of the loss (incurred by them). All owners of vineyards or gardens on the tribute list who paid the sixth to the temples before the twenty-first year, shall henceforth pay it [to (Arsinoe) Philadelphos (?)]

In the course of the late third and early second centuries BCE, the state also assumed responsibility for surveying grain-bearing lands belonging to temples, and for collecting their harvest taxes at state rather than temple granaries. In exchange, the state granted an allowance (*syntaxis*) to the temples. This process began in the late third century BCE, around 223 BCE under Ptolemy III, when the state began confiscating temple land entrusted to private individuals who owed the state taxes. This land was then sold at royal auction, and henceforth was administered by the state rather than the temple. The revolt of Upper Egypt in 205 BCE, and its subsequent suppression in 186 BCE under Ptolemy V, may have allowed the state to assume administration of still more temple land. The results of this process can be seen in the Memphis Decree of Ptolemy V dated to 196 BCE, which contains the first mention of the allowance (*syntaxis*).<sup>50</sup> The decree purports to confirm the endowments of the temples, but it no longer describes them as land that produced revenues for the gods and their temples, but rather as allowances that were given to the temples by the king, and the gods' shares of the revenues from vineyards and orchards collected by the state.

**The Memphis Decree of Year 9 of Ptolemy V (196 BCE), Rosetta lines 8–9:**<sup>51</sup>

He ordered concerning the endowments of the gods, and the money and the grain that are given as allowances to their (9) [temples] each year, and the shares that belong to the gods from the vineyards, the orchards, and all of the rest of the property which they possessed under his father, that they should remain in their possession.

The state assumption of responsibility for collecting harvest taxes from vineyards, orchards, and grain-bearing lands belonging to temples in exchange for subventions to the temples in theory could mean that the state assumed the risk of poor harvests. In practice, however, the state and its agents might not

pay the subvention, thereby shifting the risk back to the temples. The latter is attested on a red granite stela erected by the priests of Khnum on Elephantine, recording a royal letter from Cleopatra III and Ptolemy IX dated to 115 BCE ordering the provincial governor (*stratēgos*) Phommous to give the priests of Khnum their subvention, in response to the priests' petition.<sup>52</sup>

**Censuses:** Portions of several Ptolemaic censuses and other documents related to censuses have survived on fragmentary Demotic and Greek papyri, mostly from the third century BCE.<sup>53</sup> The Ptolemaic census of people took two forms, a census according to household (*kat' oikian*) and a census according to the occupation of the heads of household (*kat' ethnos*).<sup>54</sup> The census of animals was separate from those of people.<sup>55</sup> Village scribes compiled the censuses with the assistance of written declarations (Gk. *apographai*) submitted to the authorities by heads of households.<sup>56</sup>

The Ptolemies continued to use the censuses of people to collect compulsory labor requirements for men, as in earlier periods.<sup>57</sup> Men were required to move thirty *naubia*-measures (Gk. *naubia*, Dem. *nby*) of earth a year, and received Demotic and Greek receipts on ostraca confirming that they had fulfilled their requirements. Those who could not or did not want to perform this duty could pay a compulsory labor tax (Gk. *leitourgikon*, Dem. *ḥd ʿrt*) of two kite or four drachmas, for which they also received a receipt.<sup>58</sup> Ptolemaic censuses organized according to the occupations of the heads of households (Gr. *kat' ethnos*) were also used to collect trade or occupational taxes. In contrast to the Third Intermediate Period, however, the Ptolemaic trade taxes were probably imposed on each of the members of a trade or profession at a fixed rate per individual.<sup>59</sup>

The Ptolemies also used the censuses of people to collect new capitation taxes in money. Numerous Demotic receipts on ostraca reveal that from Year 1 to Year 21 of Ptolemy II (285–263 BCE), a new capitation tax known as the yoke tax (*ḥd nhb*) was levied on men, paralleling the old compulsory labor requirement. Men paid up to four kite or eight drachmas annually,<sup>60</sup> possibly in monthly installments.<sup>61</sup> In Year 22 of Ptolemy II (263 BCE), the capitation taxes in money were reformed, and the revenues therefrom were subject to tax farming, like the one-sixth or one-tenth harvest tax on wine. The yoke tax was replaced by a new capitation tax known as the salt tax (Gk. *halikē*, Dem. *ḥd ḥm3*), which was levied on both men and women. Demotic and Greek receipts on ostraca show that it was initially levied at an annual rate of three-quarter kite or one drachma three obols for men, and a half kite or one drachma for women, payable in semiannual installments. Then in Year 31 of Ptolemy II (254 BCE) the annual rate was lowered to a half kite or one drachma for men, and one-fourth kite or three obols for women. Finally, in Year 5 of Ptolemy III (243 BCE) the annual rate was lowered again to one-third kite or four obols for

men, and one-eighth kite or one and a half obols for women, until Year 5 of Ptolemy IV (217 BCE) when the salt tax ceases to be attested.<sup>62</sup>

After the capitation taxes were reformed, the Ptolemies also used the censuses to collect the income of a server tax (Dem. *ḥk rmt iw=f šms*), the guard tax (*ḥk rsy*), and other taxes on some men, and the wool tax (Gk. *erea*, Dem. *ḥd inw*) on some women alongside the salt tax. Receipts on ostraca indicate that the income of a server tax appeared in Year 23 of Ptolemy II (262 BCE) at a rate of three obols, and from Year 27 (258 BCE) at three and three-quarter obols. The guard tax appeared in Year 33 of Ptolemy II (253 BCE) at a rate of one obol, and from Year 38 (248 BCE) it began to be collected together with the income of a server tax and other taxes at a rate of five and three-eighth obols. Combined receipts for the salt, income of a server, guard and other taxes appear in Year 5 of Ptolemy III (243 BCE).<sup>63</sup> The wool tax was introduced in Year 31 of Ptolemy II (254 BCE) at a rate of three and three-quarter obols. Combined receipts for the salt and wool taxes appear in Year 5 of Ptolemy III (243 BCE).<sup>64</sup>

After Year 5 of Ptolemy IV (217 BCE), Greek and Demotic receipts for capitation taxes in money ceased to be issued, though these or similar taxes were undoubtedly still collected, because censuses and tax registers continued to be compiled into the second century BCE.<sup>65</sup> By the first century BCE, the capitation taxes had certainly changed. Censuses or tax registers (*laographia*) from Theogonis near Tebtynis in the southern Fayum record monthly installment payments by individuals for two capitation taxes called the contribution (*syntaxis*) and the police tax (*epistatikon*).<sup>66</sup> Tax accounts and petitions to the governor of the Herakleopolite province mention two more capitation taxes, a grain levy tax (*sitonion*) and a stater tax (*statērismos*), assessed in money on each village as a lump sum that was then divided among the populations.<sup>67</sup> And ostraca from Karanis in the northeastern Fayum contain tax receipts for installment payments by individuals for the contribution, the police tax, and the grain levy tax.<sup>68</sup>

#### DOCUMENTATION OF BOTTLENECK TAXATION

In the Ptolemaic Period, the state and the temples continued to collect taxes in money at bottlenecks, alongside the taxes in money and kind collected from sources measured with field surveys and counted by censuses.

**Sales Taxes:** At the beginning of the Ptolemaic Period, as in the Saite and Persian Periods, temple notaries documented property transfers in the Egyptian language and Demotic script and collected a property transfer tax known as the tenth of scribes and representatives, which was 10 percent of the value of the property being transferred. Temple notaries sometimes incorporated a

statement in contracts that payment of the tenth was the responsibility of the purchaser, and sometimes separate Demotic receipts on papyrus were issued to the buyer. The state began to collect an additional transfer tax of two and a half kite or five drachmas on each property transfer from the reign of Alexander IV onward. Separate Demotic receipts on papyrus were issued for this tax, and Demotic receipts on ostraca for the house tax (*ḥd c.wy*) may represent partial payments for this tax.<sup>69</sup>

In the reign of Ptolemy II, a fragmentary tax law papyrus reveals that sales and other transfers of slaves in the Greek language had to be registered at the state registry (*agoranomion*), and a transfer tax had to be paid to a royal bank. Also about this time, starting in Year 21 of Ptolemy II (264 BCE), Demotic contracts began to receive Greek subscriptions indicating that they had been received (*peptōken*) and registered (*echrēmatisen*), in some cases by a tax farmer (*telōnēs*).<sup>70</sup>

Near the end of the third century BCE, the tenth of scribes and representatives and the two and a half kite tax on Demotic property transfers disappeared, and were replaced in Year 12 of Ptolemy IV (210 BCE) by the enrollment tax (Gr. *enkyklion*, Dem. *ḡgryn*) levied at a rate of eight drachmas two and a quarter obols per 100 drachmas (8.375 percent), and the copper tax (Gr. *chalkiaia*) at a rate of four drachmas one and one-eighth obols per 100 drachmas (4.188 percent). In one case a Demotic receipt was subscribed on a contract, in another case a Greek receipt was subscribed, and in a third case a separate Greek receipt was issued. The new taxes had to be paid at a tax office (*telōnion*) or a royal bank, and thus the state took control of the revenues from taxes on Demotic property transfers away from the temples, though the temples may have still received a share of the revenues.<sup>71</sup>

**Burial Taxes:** In the Ptolemaic Period, temples continued to administer and control access to cemeteries in the deserts. Burial plots had to be purchased from temples, and a money tax had to be paid on the burial of the dead in these cemeteries. The burial tax or tax of the overseer of the necropolis (*ḥd/tny mr ḥst*) is attested from numerous Demotic receipts on ostraca from Thebes. It was collected at a rate of half silver kite or one drachma per burial from Year 2 of Alexander IV (315 BCE) through Year 6 of Ptolemy III (241 BCE). By Year 13 of Ptolemy III (234 BCE) until the beginning of the reign of Ptolemy IV (222 BCE), however, the rate was raised to half silver kite and one obol or seven obols per burial.<sup>72</sup>

The burial plot tax or price of a burial plot is also attested from Demotic receipts on ostraca from Thebes, and was collected at a rate of two and a half kite or five drachmas per burial plot from Year 2 of Alexander IV (315 BCE) until the beginning of the reign of Ptolemy IV (222 BCE).<sup>73</sup> The earliest of these receipts, from Years 2 and 7 of Alexander IV (315 and 310 BCE) and on



papyri rather than ostraca, refer instead to the tax of the tomb-chapel (*tny β s.t* or *tny β šβ*), which is reminiscent of the house tax (*ḥd c.wy*). This suggests that the burial plot tax may have been viewed as a transfer tax on tombs.<sup>74</sup> Support for this interpretation may be found in Demotic receipts on ostraca from Edfu from the second century BCE, which give permission for burials because the payment of the one-tenth has been received. These are clearly burial tax or burial plot tax receipts, but the one-tenth is the traditional name for the transfer tax exacted by temples. Similar Demotic receipts occur from Thebes from the second or first century BCE, but omit the reference to the one-tenth.<sup>75</sup>

The Theban mortuary priests usually paid the burial tax and the burial plot tax to the temple on behalf of their clients, and at least sometimes they also contracted with the temple to farm the taxes as well. Demotic Papyrus British Museum 10528 (Glanville), from Thebes and dated to Year 14 of Ptolemy I (291 BCE), is a promissory contract in which a mortuary priest writes that he has promised to pay five deben (or fifty kite) in exchange for the money of the overseer of the necropolis and the two and a half kite that are given for tombs, and that he will not bother the other mortuary priests or the temple manager (*mr-šn*) for this money.<sup>76</sup> A series of Demotic receipts on ostraca for the money or monies of document (*ḥd/ḥd.w n bšk*) may represent partial payment for the farmed taxes. The temple at Edfu collected similar taxes already in the third century BCE, called the tax of the necropolis (*tny ḥβst*) or the mummification tax (Gr. *taricheia*), and these appear to have been farmed by temple priests. A series of Demotic receipts on ostraca appear to record payments by the tax-farming priests to the temple, and a Greek letter on papyrus (P. Eleph. gr. 8) from the archive of Milon appears to be a promise by the tax-farming priests to make payments that were in arrears.<sup>77</sup>

**Customs Duties:** The Ptolemaic state exacted customs duties on goods imported into Egypt, as had been done in the preceding Persian Period. The duties had to be paid on the cargoes of ships arriving at Alexandria and Pelusium before the cargoes were offloaded. Papyrus Tebtunis I 5, lines 22–333, from Tebtynis, preserves a copy of an amnesty and regulation decree of Year 52 of Ptolemy VIII, Cleopatra II, and Cleopatra III (118 BCE), which specifies that goods may not be seized unless the officials of the customs-house (*pylē*) find something on the wharf at the harbors of Alexandria, on which the duty has not been paid, or of which the importation is forbidden. It also specifies that the seized goods should be brought to the chief finance minister (*dioikētēs*).<sup>78</sup>

The Ptolemaic duties were calculated as a percentage of the declared value of the goods and were paid in money, in contrast to the Persian practice of collecting some duties in kind as a percentage of the cargo. Fortunately, one papyrus happens to preserve the percentage rates of customs duties on a small selection of goods. Papyri Cairo CG (P.Cair.Zen. I) 59012–59014 date to Year 27 of Ptolemy II (259 BCE), and are from the archive of Zenon, the



estate manager of the chief finance minister (*dioikētēs*) Apollonios. They form a dossier concerning goods imported into Egypt for Apollonios and others on ships captained by Patron and Herakleides. Papyrus Cairo CG 59012 is a copy of the declared valuation (*timēsis*) and the calculated customs duties and other taxes paid at Pelusium on the goods carried by the two ships,<sup>79</sup> while Papyrus Cairo CG 59013 records the portage (*phorettron*) for Apollonios' goods on Herakleides' ship, and Papyrus Cairo CG 59014 the portage for those on Patron's ship.<sup>80</sup> The customs duties in Papyrus Cairo CG 59012 were calculated at 50 percent (*hēmisi*) for sweet wine (*glykys*), filtered wine (*sēstos*), vinegar (*oxos*), and white oil; at 33 percent (*tritē*) for Chian and Thasian jars of wine and dried figs; at 25 percent (*tetartē*) for honey, cheese, salt fish and meats, and nuts; and at 20 percent (*pemptē*) for washed wool.<sup>81</sup>

Ptolemaic customs duties were particularly heavy on commodities produced in Egypt under monopolies, such as oil, presumably to protect the commodity monopolies from foreign competition. Papyrus Revenue Laws, dated to Year 27 of Ptolemy II (259 BCE), forbade the importation of oil to Egypt for sale, and levied a duty on oil imported for personal use.<sup>82</sup>

**Papyrus Revenue Laws, col. 52:**

[It shall not be lawful] to bring [foreign oil] into the country for sale, either from Alexandria or Pelusium or any other place. Whoever does so shall be deprived of the oil, and shall in addition pay a fine of 100 drachmas for each *metrētēs*, and for more or less in proportion. If any persons carry with them foreign oil for their personal use, those who bring it from Alexandria shall declare it in Alexandria, and shall pay down 12 drachmas for each *metrētēs*, and for more or less in proportion, and shall obtain a receipt before they bring it inland. Those who bring it from Pelusium shall pay the tax in Pelusium and obtain a receipt. The collectors in Alexandria and Pelusium shall place the tax to the credit of the province to which the oil is brought.

The Ptolemaic state probably also exacted tolls on goods transported within Egypt that passed by strategically located guard posts (*phylakai*), one of which was located at Memphis.<sup>83</sup>

DOCUMENTATION OF PROPERTY TRANSFERS

Two institutions participated in the documentation of property transfers, semiautonomous local notaries, and state registries. Initially, when Alexander the Great arrived in Egypt, notaries associated with Egyptian temples documented property transfers and collected transfer taxes. Then under Ptolemy I, Greek immigrants to Egypt also began drawing up property transfers in Greek. Ptolemy II therefore instituted a state registry (*agoranomion*) to register and collect transfer taxes on Greek property transfers. These state registries

then slowly took over ever more tasks from the Egyptian temple notaries and Greek scribes, until the latter were finally abolished shortly after the Roman conquest.

***Egyptian Documentation:*** As in the preceding periods, Ptolemaic contract scribes attached to temples continued to transcribe the verbal statements of one of the contracting parties, and several literate witnesses attached to the same temples continued to certify that the written transcripts agreed with the verbal statements. The witnesses usually only signed the transcripts, though in the Early Ptolemaic Period some of the witnesses also recopied the transcripts. The first contracting parties continued to give the resulting contracts to the second contracting parties as an authenticated record of the agreement, and the second contracting parties continued to assent to agreements by accepting the transcripts of them. These transcripts written by contract scribes attached to temples may have been known in Demotic as *sh*-contracts.<sup>84</sup>

Temple contract scribes did not document all transactions, however. Some minor transactions consisted of letter contracts, which the first contracting party wrote for the second contracting party. These letter contracts may have been known in Demotic as *st*-contracts.<sup>85</sup> Other minor transactions consisted of verbal agreements witnessed by community members, and relied on social pressure for enforcement. Evidence for such verbal agreements can be found in memoranda not unlike those from Deir el-Medina in the New Kingdom. Occasionally these verbal agreements were transcribed with the names of the witnesses, and may have been known in Demotic as *hm*-agreements.<sup>86</sup>

***Greek Documentation:*** The Greeks who settled in Ptolemaic Egypt introduced the six-witness contract or double document, which contained two copies of the same contract on the same papyrus, one above the other. The upper copy (*scriptura interior*) was rolled up and sealed with the signatures of six witnesses written around the seals, while the lower copy (*scriptura exterior*) was left exposed. The contract was deposited with a private individual (*syngrophylax*), who guarded it until it needed to be consulted during a dispute.<sup>87</sup>

Starting in the early second century BCE, however, the state registry (*agoranomion*) began to function as a notary as well as a registry for some Greek contracts. The state registry produced agoranomic contracts, which also had a *scriptura interior* and a *scriptura exterior*, but unlike the six-witness contract or double document, the two were not copies. Instead, the *scriptura interior* was an abstract of the contract in the *scriptura exterior*, which was copied into the archives of the state registry. The abstract in the state registry served to authenticate the agoranomic contract, and consequently it needed no witnesses. The agoranomic contract did not however replace the older double document, which coexisted alongside it.<sup>88</sup>

**State Registration:** At the very beginning of the Ptolemaic Period, as in the preceding periods, there is no evidence of state registration. Temple notaries documented property transfers in Demotic, and collected the tenth of scribes and representatives, while the state collected an additional transfer tax of two and a half kite or five drachmas on each property transfer.<sup>89</sup> Early Greek immigrants to Egypt documented agreements in the Greek language with “six-witness” contracts that they themselves drew up and kept, and presumably they paid no property transfer taxes on these entirely private agreements.

In the reign of Ptolemy II, however, a fragmentary tax law papyrus reveals that sales and other transfers of slaves in the Greek language had to be registered at the state registry (*agoranomion*), and a transfer tax had to be paid to a royal bank.<sup>90</sup> Several registers containing summaries of Greek six-witness contracts or double documents are attested in the early Ptolemaic Period.<sup>91</sup> At the same time, temple notaries may also have been required to register the documents that they drew up with the state registry, because Egyptian contracts begin to receive Greek registration subscriptions in the reign of Ptolemy II.<sup>92</sup> A register containing summaries of Demotic contracts is also attested in the early Ptolemaic Period, but it is unclear whether a temple notary or a state registry produced it.<sup>93</sup>

Starting in the early second century BCE, the state registry (*agoranomion*) began to function as a notary for Greek agoranomic contracts. Perhaps for this reason, by the mid-second century BCE it became known as the writing office (*grapheion*) as well as the state registry (*agoranomion*).<sup>94</sup> Ptolemy VIII then introduced a new state registration requirement for Egyptian contracts at the very beginning of his sole reign in 145 BCE. The requirement survives in copy of a royal decree circulated to state registry officials. The writing offices (*grapheia*) were ordered to make abstracts of Egyptian contracts, before giving them Greek subscriptions and returning them to the contractors.<sup>95</sup> The results of this decree are preserved in a group of documents from Tebtynis in the early first century BCE, which contain registers of summaries of Demotic contracts, along with the separate abstracts of contracts ordained by the decree.<sup>96</sup>

Ptolemy VIII or Cleopatra III also introduced another new state registration requirement for Greek contracts sometime between 130 and 113 BCE. Previously, Greeks could draw up their own Greek six-witness contracts and subsequently register them at the state registries, or they could have the state registry draw up agoranomic contracts for them. Now Greeks had to let the state registries draw up the six-witness contracts as well as the agoranomic contracts, and to make abstracts of them, before giving them Greek subscriptions and returning them to the contractors. As a result, the upper copy (*scriptura interior*) of the six-witness contract became an abstract rather than a copy, as in the agoranomic contract; but the six-witness contract retained its witness

signatures, thereby remaining distinct from the agoranomic contracts.<sup>97</sup> There is a register of copies of Greek agoranomic contracts from the state registry (*agoranomion*) in Pathyris (Gebelein) from 111–110 BCE.<sup>98</sup>

#### MEDIA OF EXCHANGE AND REDISTRIBUTION

In the Ptolemaic Period, weights of silver continued to be the standard measures of value, alongside volumes of hard wheat used for harvest taxes in kind. At the same time, coins minted in silver and bronze rapidly replaced weights of lump silver as media of exchange. Coins were, however, equated with specific weights of silver, thereby preserving the partial unity of measures of value and media of exchange achieved in the preceding Saite and Persian Periods. Silver was probably even more widely available in the Ptolemaic Period than in the Saite and Persian Periods, because the numbers of hoards of silver coins used as stores of wealth continued to increase. The increased availability of silver in turn allowed the state to use censuses to collect capitation taxes in silver, in addition to the sales taxes, customs duties, and surcharges on occupational activities already collected in the Saite and Persian Periods.

**Measures of Value:** In the early Ptolemaic Period, the standard measures of value in official accounts were weights of silver or copper, and occasionally volumes of hard wheat. Payments in gold or copper were usually reckoned into silver in early Ptolemaic official accounts, and payments in gold or silver were reckoned into copper in late Ptolemaic official accounts. Payments in various grains and legumes were usually reckoned into hard wheat in official accounts, but silver or copper was the standard measure of value for virtually all other commodities and purposes. In Egyptian texts, weights of silver or copper were measured in deben, kite, and fractions of kite, while in Greek texts weights of silver or copper were measured in drachmas, obols, and chalkoi. Egyptian texts measured grain in artabas, chous, and hin, while Greek texts measured grain in artabas, chous, and choinixes.<sup>99</sup>

There seems to have been an increase in the amount of silver in Egypt during the Third Intermediate, Saite, and Persian Periods. In New Kingdom Egypt, the value of a weight of gold relative to the same weight of silver was usually about 2:1.<sup>100</sup> After Alexander the Great conquered Egypt in 332 BCE, however, he minted gold coins in Egypt that were valued at 10:1 against silver coins.<sup>101</sup> This suggests that the value of gold in Egypt had increased relative to silver during the Third Intermediate, Saite, and Persian Periods. This could have occurred through a decrease in the amount of gold, making it scarcer and more valuable; but is more likely to be the result of an increase in the amount of silver, making it more common and less valuable. There is evidence for an increase in the silver supply in the many hoards of predominantly Greek silver coins dating to the Saite and Persian Periods that have been found in Egypt, presumably as result of trade with Greece.

**Media of Exchange:** Gold, silver, and bronze coins were minted in Ptolemaic Egypt, and silver and bronze coins were certainly used as media of exchange, probably to the exclusion of the lumps of silver used in the Saite and Persian Periods. Stray silver and copper coins are frequently found in archaeological excavations, suggesting that they were used as media of exchange in day-to-day transactions rather than as stores of wealth, and the small denominations of some silver and copper coins suggests the same. The supply of coinage undoubtedly increased during the Ptolemaic Period, but the demand for payment in coinage by the state also increased, and Von Reden has argued persuasively that the coinage supply was unable to keep pace, requiring the use of many different kinds of credit to stretch the coinage supply. Hard wheat, emmer wheat, barley, and vetch were also accepted media of exchange, but primarily for payment of agricultural taxes, and for repayment of grain loans. The state sometimes paid nominally money salaries partly in kind, and the temples regularly paid salaries in kind.

**Stores of Wealth:** Egyptian coin hoards again illustrate the use of coins as stores of wealth in Ptolemaic Egypt. Sixteen coin hoards containing more than 16,329 coins are known from the beginning of the early Ptolemaic Period (332–264 BCE).<sup>102</sup> Twenty coin hoards containing more than 1,295 coins are known from the end of the early Ptolemaic Period (264–200 BCE).<sup>103</sup> Seven coin hoards containing more than 539 coins are known from the middle Ptolemaic Period (200–118 BCE).<sup>104</sup> Sixteen coin hoards containing 2,210 coins are known from the late Ptolemaic Period (118–30 BCE).<sup>105</sup> This is a total of fifty-nine coin hoards containing over 20,373 coins, a considerable increase over the preceding Saite and Persian Periods, from which thirty-one coin hoards are known containing over 8,412 coins. However, the vast majority of these hoards date to the early Ptolemaic Period, suggesting that there may have been a decrease in the availability of coinage in the late Ptolemaic Period.

Again, the very existence of these hoards suggests that one use of these coins was passive storage of wealth. In contrast to the hoards, however, increasing numbers of stray coins found in archaeological excavations argues for their increasing circulation in exchange for commodities and services. The denominations of coins available in Ptolemaic Egypt also give some insight into the use of coinage. There was a full range of gold coins, large denomination silver tetradrachms, small denomination silver coins, and bronze coins. This suggests that the economy was more monetized than in the Saite and Persian Periods, and that coinage was used for a wide range of transactions by all levels of society.

**Credit:** Some scholars have distinguished between credit for investment and credit for consumption, and have argued that only the former is evidence for economic rationality.<sup>106</sup> In fact, credit for investment and credit for

consumption are both perfectly economically rational responses to a lack of liquidity or a shortage of coinage. Indeed, outside of subsistence economies, some sort of credit for consumption is virtually required for occupations with cyclical variations in income, such as agriculture. However, Von Reden has argued persuasively that shortage of coinage was endemic in Ptolemaic Egypt. The Ptolemies did increase the supply of coinage in Egypt, but they also increased the demand for payment in coinage, requiring the extensive use of a wide variety of credit to free up the limited supplies of coinage.<sup>107</sup>

Formal loans of both grain and money are well attested in Ptolemaic Egypt. Von Reden argues that the Ptolemies developed a legal infrastructure that protected creditors by expediting execution, and protected debtors by limiting interest on cash loans, and thus encouraged formal lending by lowering transaction costs.<sup>108</sup> The interest rate for grain loans was 50 percent due after the next harvest, the same as in the preceding Late Third Intermediate, Saite, and Persian Periods. The maximum interest rate for money loans seems to have been 30 percent per year (2.5 percent per month) until the end of the reign of Ptolemy II, and 24 percent per year (2 percent per month) thereafter.<sup>109</sup> Both rates were a considerable decrease from 100 percent per year (in one case)<sup>110</sup> or 100 percent per six months (in one case)<sup>111</sup> in the Late Third Intermediate, Saite, and Persian Periods. Higher value formal loans were usually based on written contracts, and were often secured by mortgaging real estate. Lower value formal loans were probably often based on oral agreements, and were secured by pledges or by third party guarantees.<sup>112</sup>

Many formal loans, however, were actually embedded in other transactions, and may have been intended to generate liquidity. Formal loans that were secured by sales of mortgaged real estate could become prepayments for purchase of the real estate. Formal loans could also be combined with leases of real estate to provide prepayments of rent (often called *prodomatic* or *antichretic* leases). Formal loans could also be combined with future commodity sales to provide prepayments for the commodities.<sup>113</sup> Furthermore, many transactions involved credit without formal loans. Sales of commodities on credit and prepayment for commodities were common.<sup>114</sup> Many labor contracts also involved prepayment of salaries, so that the contractors could in turn prepay subcontractors.<sup>115</sup> These informal credit transactions often took place in patronage relationships, which served to secure them.<sup>116</sup>

Finally, Von Reden has argued that while the Ptolemaic system of royal banks and their local branches was meant to collect taxes on behalf of the royal treasury, it was also meant to keep coinage in circulation locally, and not simply to siphon it all off to Alexandria. The annual tax payments to royal banks and their branches were underwritten and guaranteed by tax farmers, so that the banks could pay salaries in advance of the tax payments, thereby allowing individuals to pay their taxes.<sup>117</sup> Ptolemaic banks did not, however, become

independent sources of credit for private individuals. Royal banks and private banks did hold individual deposits and accounts, and did make loans and payments to individuals, but these individuals were often state officials and their clients, or tax farmers and their employees.<sup>118</sup>

#### REDISTRIBUTIVE NETWORKS

The Ptolemies used royal granaries and banks to receive and disburse state revenues in kind and in money, and a variety of high officials were responsible for authorizing and tracking outpayments. Disbursements often provided salaries for local officials, soldiers, and police. The state, however, increasingly contracted out to private entrepreneurs much processing and transportation of commodities that previously would have been done by gangs and crews directly salaried by the state institutions. Temples continued to manage redistributive networks, though they were increasingly dependent on the state for revenue collection. The Ptolemies were able to do this with the help of improved documentation, discussed previously, which gave them greater accountability and control over their local agents.<sup>119</sup>

**Royal Granaries:** The Ptolemies inherited from the Saïtes and Persians a system for documenting and transporting harvest taxes in grain, which kept track of grain deposited in local granaries so that surpluses could be transported as needed. The lack of detailed information about the Saïte and Persian system, however, makes it difficult to determine the degree to which the Ptolemies modified it. In the Ptolemaic Period, one or more grain accountants (*sitologoi*) and a checking scribe (*antigraphheus*) representing the royal scribe usually administered a granary (Gk. *thēsauros*, Dem. *πῆ β*). These officials held long-term appointments typical of state officials.<sup>120</sup> In the Fayum, several village granaries (*thēsauroi*) were often treated as branches of a district granary (*ergastērion*). The grain accountants (*sitologoi*) and checking scribe (*antigraphheus*) were attached to the district granary (*ergastērion*), rather than to the individual village granaries (*thēsauroi*).<sup>121</sup> A provincial grain accountant (*sitologos*) kept track of grain stocks in the village and district granaries, and determined from which ones outpayments and transfers should be made, including the annual transfer of a portion of the harvest tax to Alexandria.<sup>122</sup> Local granaries thus could apparently serve as branches of district and provincial granaries, and ultimately also of a single dispersed royal granary, both for tax collection and other inpayments, and for outpayments.

The local granaries were filled primarily through the collection of harvest taxes. The grain accountants often issued tax receipts to taxpayers in Upper Egypt, and occasionally in the Fayum as well.<sup>123</sup> The grain received as harvest taxes could then be paid out locally, as loans of seed grain for local farmers,



as the grain or bread portions (*sitometria*) of salaries for local officials, garrison soldiers, and police, or as subventions (*syntaxeis*) for local temples. Grain could also be transferred from one local granary to another, if local outpayments exceeded local inpayments, or more often from local granaries to the royal granaries in Alexandria. Most transfers were made by ship. Such outpayments and transfers usually required a provincial official, either a manager (*oikonomos*) or later a governor (*stratēgos*), to issue orders for payment to the provincial and local granary accountants, and to the royal and local checking scribes who countersigned the orders.<sup>124</sup> In the case of transfers by ship, the person in charge of the ship (*nauklēros*) also issued a kind of written loading receipt known as a *nauklēros*-receipt to the delivering grain accountant. The delivering grain accountant retained these orders and receipts, to adjust their accounts.<sup>125</sup> Such transfers probably also required the delivering grain accountant to issue a written loading receipt for the receiving grain accountant, and sometimes a duplicate receipt for a superior. The receiving grain accountant and his superior kept these receipts, to adjust their accounts, and consequently they are never found together with the orders and receipts for the delivering grain accountant.<sup>126</sup>

A few ancient references hint at the quantity of harvest tax revenues in kind collected in Egypt.<sup>127</sup> Jerome gave Ptolemy II's annual income as 1.5 million artabas of grain,<sup>128</sup> which is usually thought to be too low. Aurelius Victor wrote that Egypt supplied 6 million artabas of grain under the Emperor Augustus,<sup>129</sup> while the Emperor Justinian gave the annual wheat assessment of Egypt as 8 million artabas.<sup>130</sup>

**Royal Banks:** The Ptolemies also inherited a system for documenting and transporting taxes in money from the Saïtes and Persians, though in the Saïte and Persian Periods money taxes were limited to sales taxes and burial taxes collected by temples and customs duties collected by the state. In contrast, the Ptolemies introduced widespread state taxes in money,<sup>131</sup> and therefore they greatly modified the Saïte and Persian system. The Ptolemies initially used a network of local treasury or tax offices (*logutēria*) to collect taxes in money. These were probably later integrated into a network of royal banks that appeared around the middle of the reign of Ptolemy II. The royal banks in each province functioned as dispersed branches of the royal treasury. State taxes and other revenues were deposited into separate treasury accounts, and state employees were paid out of these accounts.<sup>132</sup> In addition, however, many royal banks also accepted private accounts, deposits, and withdrawals, made transfers from one account to another, and provided credit or loans.<sup>133</sup>

It is usually assumed that the institutional models for the Ptolemaic royal banks were Classical Greek public chests or treasuries and private banks. Claire Préaux and Jean Bingen argued that Ptolemies must have introduced



banking from Greece to Egypt, because they believed that banking required coinage and that the Egyptians had no coinage before Alexander.<sup>134</sup> Raymond Bogaert also maintained that Ptolemaic royal banks were based on Greek models, though he admitted that the Egyptians used imported Greek coins, locally produced imitations, and some local issues already in the fifth and fourth centuries BCE.<sup>135</sup> In the previous chapter, however, it was argued that weighed silver bullion and scrap or *Hacksilber* functioned much like coinage long before and after the first Greek coins were imported and imitated in Egypt. It was also argued that the Saites and the Persians had a system for collecting some taxes and paying some salaries in silver, as well as a network of branch granaries, which could also have inspired the Ptolemaic royal banks. Indeed, Friedrich Preisigke has observed that the administrative systems of the royal and later public banks in Ptolemaic and Roman Egypt showed many similarities to the administrative systems of royal and later public granaries.<sup>136</sup> If Ptolemaic royal banks were a purely Greek institution transplanted to Egypt, one might not expect to find such similarities to traditional Egyptian institutions like granaries.

There were three types of royal banks in Ptolemaic Egypt, those located in provincial capitals, local banks, and tax offices (*logeutēria*) located in villages. A royal banker (*trapezitēs*, rarely *basilikos trapezitēs*) administered the royal bank (*basilikē trapeza*) located in each provincial capital. There were also local banks in some villages that served as branches of royal banks. Such banks could be called the bank (*trapeza*) of a named village, and their bankers could be described as the subordinate of (*ho para*) a royal banker. In addition to local banks, there were also tax offices (*logeutēria*) in some villages, which served as local branches of royal banks purely for tax collection purposes. The directors of tax offices (*logeutēria*) were also called bankers (*trapezitai*), and were also described as subordinates of (*ho para*) a royal banker or of a local banker.<sup>137</sup> In addition to royal banks, the Ptolemies also leased out the right to operate concessionary banks, and tolerated private banks. Concessionary banks were granted a monopoly on money-changing, and they flourished while the state demanded payment of taxes in silver rather than copper. However, private banks drove them out of business after the silver standard was abandoned in 210 BCE. These banks also accepted private accounts, deposits, and withdrawals, made transfers from one account to another, and provided credit or loans.<sup>138</sup>

The royal banks probably received most money tax payments. State officials associated with early treasury or tax offices (*logeutēria*) may have issued receipts for payments of the yoke tax, the capitation tax introduced at the end of the reign of Ptolemy I or at the beginning of the reign of Ptolemy II (c. 285 BCE). The receipts do not indicate the institutions at which the payments were made, but the scribes who signed them held long-term appointments, which were typical of state officials.<sup>139</sup> State officials associated with tax offices (*logeutēria*),

local banks and royal banks probably received payments of the salt tax, the capitation tax that replaced the yoke tax in the middle of the reign of Ptolemy II (c. 263 BCE). Occasionally these officials issued receipts for the payment of these and other taxes.<sup>140</sup> More often, however, the state required the tax farmers who farmed these taxes to hire scribes to issue receipts, and these scribes held short-term annual appointments corresponding to the tax farming lease.<sup>141</sup> The money received by tax offices, local banks, and royal banks could be paid out locally, as the cash portions (*opsōnia*) of salaries for local officials, garrison soldiers, and police.<sup>142</sup> Money could also be transferred from tax offices and local banks to royal banks and from there to the royal treasury in Alexandria.<sup>143</sup> As with grain, these money outpayments and transfers required a provincial official, either a manager (*oikonomos*) or later a governor (*stratēgos*), to issue an order for payment to a banker,<sup>144</sup> and to a royal scribe who countersigned the order.<sup>145</sup> In some cases, the bankers required the recipients of outpayments to write receipts, perhaps because there was no order for payment.<sup>146</sup>

A few ancient sources provide figures for the money revenues of the Ptolemies, some or all of which may ultimately derive from records kept by the Ptolemies.<sup>147</sup> Jerome gave Ptolemy II's annual income from Egypt as 14,800 Ptolemaic talents or 12,000 Attic talents of silver, in addition to 1.5 million artabas of grain.<sup>148</sup> Diodorus wrote that the annual income of Ptolemy XII was 6,000 talents of silver,<sup>149</sup> while Strabo gave it as 12,500 talents according to a lost oration of Cicero.<sup>150</sup> The ancient sources do not specify what these numbers represent, however, so it is possible that both figures given for Ptolemy XII are correct. Preaux speculated that Diodorus omitted revenues from Alexandria, while Rostovtzeff suggested that Strabo gave the revenues in debased currency, and Diodorus their real value.<sup>151</sup>

**Palaces, Officials, and Commodity Monopolies:** In earlier periods, state salaries were predominantly paid in kind rather than in money, and consequently royal palaces and officials commissioned dependent institutions, gangs, crews, and individuals to process and transport commodities for future redistribution to state employees. In the Ptolemaic Period, however, state salaries were increasingly paid in money rather than in kind, and palaces no longer served as institutional state agents. Nonetheless, the state and its officials continued to commission individuals to process and transport commodities, now for sale as well as for redistribution to state employees. Sometimes there may have been little distinction between sale and redistribution, however, when the state provided employees with commodities instead of wages: it would have been easy for the state to book the distribution simultaneously as payment of wages and as payment for commodities.

State production and distribution of many commodities were subject to so-called monopolies, such as the oil monopoly (*elaike*) described in Papyrus

Revenue Laws cols. 38–72, or the cloth monopoly (*othoniēra*) apparently described in cols. 87–107. The revenues generated by the sale of such commodities were farmed out at auction to the highest bidders in each district, much like taxes. The winning contractors then assumed the risk that revenues might be less than their bid, and any profit from revenues greater than their bid.<sup>152</sup>

The state and its officials, however, were heavily involved in the actual production and sale of the commodities. For example, the rules for the oil monopoly in Papyrus Revenue Laws specify that the oil seed harvest be bought from farmers at fixed prices (col. 39), and that the resulting oil be sold at fixed prices (col. 40). It indicates that the provincial manager pay set wages to the oil makers and set payments to the contractors according to the quantity of oil produced (col. 45), that he lock up the oil presses and other tools when not in use by the oil makers (col. 46), and that he make arrangements with the dealers and retailers to distribute and sell the oil produced (cols. 47–48). Finally, each month an auditor appointed by the provincial managers would balance the amounts paid for oil seed, the wages of the oil makers, the costs of jars, and transportation of the oil against the amounts received for the oil produced, and the contractors would receive their payments from the profits (cols. 54–55). All of these payments were presumably made to and from the account of the oil monopoly contract at a royal bank.<sup>153</sup>

The state and its officials were also heavily involved in the distribution of the commodities. Demotic papyri Cairo CG 31219 and 31225, from Tebtynis and dated to Years 17 and 24 of Ptolemy III (230 and 223 BCE), are letters from oil dealers to provincial managers confirming receipt of quantities of oil to sell, and promising payment to a royal bank of the price of the oil within five days of request.<sup>154</sup> Demotic papyri Lille II 50 and 51, from Ghoran and dated to Year 24 of Ptolemy III (223 BCE), are letters from individuals to provincial managers providing payment surety bonds for oil dealers, promising to pay part of the price of the oil to a royal bank if the oil dealers failed to do so.<sup>155</sup> Finally, numerous Demotic ostraca from Thebes in the third century BCE contain receipts for the price of oil paid by consumers, presumably issued by oil dealers.<sup>156</sup>

The rules for the cloth monopoly in Papyrus Revenue Laws are poorly preserved, but other sources indicate that the state was involved in cloth production and distribution in a manner similar to the oil monopoly. Greek papyri Hibeh I 67 and 68, from El-Hiba and dated circa 228 BCE, are orders to a royal banker to pay weavers at Ankyronpolis (El-Hiba) fixed prices in money for the cloth that they had woven.<sup>157</sup> Greek papyrus Tebtunis III 703, from Tebtynis and dated to the late third century BCE, contains instructions from a chief finance minister to a provincial manager, and lines 87–117 concern the cloth monopoly.<sup>158</sup> The provincial manager is told that the weavers should meet their

quotas, that they should be charged fixed prices for any shortfalls, and that the looms should be locked up when not in use. Finally, Demotic papyri Cairo CG 31161, 31216, and 31246–31248, from Tebtynis and dated to Year 22 of Ptolemy III (225 BCE), are letters from cloth dealers confirming receipt of quantities of cloth, with subscriptions confirming payment in money.<sup>159</sup>

**Royal Dockyards:** The Ptolemies built a massive fleet after Ptolemy II's defeats in the First Syrian War (274–271 BCE), and subsequently Ptolemy II and III were able to successfully contest with the Seleucids and the Macedonians for control of the Eastern Mediterranean and the Aegean. Athenaeus records that Ptolemy II possessed a fleet of 336 warships, which were rated according to the number of banks of oars they possessed. It included 112 larger warships including two “thirties,” one “twenty,” four “thirteens,” two “twelves,” fourteen “elevens,” thirty “nines,” thirty-seven “sevens,” five “sixes,” and seventeen “fives.” There were also 224 “fours,” “threes,” and *triemioliai*. Athenaeus states that Ptolemy II also sent more than 4,000 ships to the islands and the other cities that he ruled and Libya, so the 336 warships appear to have been the Alexandrian fleet, exclusive of ships stationed elsewhere or belonging to allies.<sup>160</sup> The cost of maintaining this fleet would have been enormous. If the 112 larger warships employed 300 men each, and the 224 smaller warships 200 men each, this fleet would have required at least 78,400 crewmen, and possibly many more. Assuming that they were paid one drachma a day, they would have cost at least 4,800 talents a year just in salaries. Alternatively, if each ship cost approximately 10,000 drachmas a month (an attested figure), the fleet would have cost 6,700 talents a year.<sup>161</sup> These figures are comparable to those required for the Ptolemaic army, and together the fleet and army would have consumed much of the Ptolemies' money revenues during the reigns of Ptolemy II and III.<sup>162</sup> This level of spending was not sustainable, however, and was not maintained after Ptolemy III's victories in the Third Syrian War (246–241 BCE). The Ptolemaic fleet was probably built and maintained at least in part in the royal dockyards at Alexandria. Consequently, these dockyards must have been a major source of redistributed revenues to shipwrights, sailors, and oarsmen during the reigns of Ptolemy II and III,<sup>163</sup> which probably contributed significantly to the spectacular growth of the then young city, together with redistributed revenues from the royal court and palaces established there under Ptolemy I.

**Military and Police:** During the Ptolemaic Period, much of the army still consisted of reserve soldiers who supported themselves when off duty by cultivating plots of land received as rewards or inheritances. An increasingly large proportion of the army, however, consisted of standing soldiers who regularly received state redistribution, which was largely paid in money rather than in kind.

The Ptolemies maintained a number of standing soldiers as elite troops and bodyguards at the royal court.<sup>164</sup> The royal *agēma*-infantry (*agēma para tois basileusin*) numbered 3,000 at the Battle of Raphia (217 BCE). The household infantry (*therapeia*), the guard at the court (*phylakeia peri tēn aulēn*), and the picked *machimoi* at the court (*epilektoi machimoi peri tēn aulēn*) were probably comparable in number to the royal *agēma*-infantry. Their officers were known as chief bodyguards (*archisōmatophylakes*) and bodyguards (*sōmatophylakes*), and they included swordbearers (*machairophoroi*) and spearbearers (*lonchophoroi*). The cavalry at the court (*hippeis peri tēn aulēn*) numbered 700 at the Battle of Raphia. Together these elite troops and bodyguards may have represented as much as a tenth of all of the soldiers available to the Ptolemies.

The Ptolemies also maintained a number of standing soldiers at garrisons. In the early Ptolemaic Period, the main garrisons were located at Alexandria, Pelusium, and Elephantine. In the late Ptolemaic Period, however, after the Great Theban Revolt (205–186 BCE), garrisons were located throughout Middle and Upper Egypt. These garrisons were probably manned with recently recruited mercenaries and reserve soldiers who served in rotation.<sup>165</sup> The early Ptolemies preferred to recruit Macedonian and Greek veterans with international experience, but the later Ptolemies increasingly preferred to recruit untrained Egyptians. Before the Battle of Raphia (217 BCE), Ptolemy IV recruited 11,000 Greek, Thracian, and Galatian infantry mercenaries from abroad, and 2,000 Greek cavalry mercenaries. He also locally recruited 23,000 Egyptian and Libyan infantry, and 2,300 Libyan cavalry. Together, these recent recruits represented half of the Ptolemaic army at Raphia.

Much of the Ptolemaic army consisted of reserve soldiers who supported themselves when off duty. These were usually former standing soldiers and mercenaries and their descendants. When they were demobilized, they were often rewarded with hereditary land allotments (*klēroi*) to buy their loyalty, to give them a means of support, and to make them reserve soldiers or cleruchs (*klērouchoi*).<sup>166</sup> The early Ptolemies offered Macedonian and Greek veterans large land allotments to obtain and retain their loyalty as reserve soldiers. Cavalry received allotments of one hundred, eighty, or seventy arouras, while infantry received thirty or twenty-five arouras. In contrast, they offered Egyptian infantry small allotments of ten, seven, or five arouras, because there was little competition for their services. Terminology reflected these ethnic distinctions. Foreign holders of allotments (*klēroi*) were called cleruchs (*klērouchoi*), while Egyptian holders were called *machimoi*. The later Ptolemies, however, increasingly recruited untrained Egyptians, including many of Greek descent, and offered them medium-sized land allotments as reserve soldiers, in part because they were less likely to transfer their loyalty, and in part because there was less land to give. New cavalry recruits were offered between seventy and ten arouras depending on their status, new infantry recruits between ten and five

arouras, and policemen between twenty-four and ten arouras. Terminology increasingly reflected status rather than ethnic distinctions. Privileged cavalry were called *katoikoi hippeis* and unprivileged cavalry *machimoi hippeis*, while *machimoi* became a term for infantry.<sup>167</sup> At the Battle of Raphia (217 BCE), Ptolemy IV had 36,000 infantry cleruchs, including 3,000 *agēma*-infantry, and 700 cavalry cleruchs, consisting of the cavalry at the court. Together, these cleruchs represented just under half of the Ptolemaic army at Raphia.

All of these soldiers received state redistribution while on duty, so the cost of maintaining an army on campaign would have been enormous. Polybius records that Ptolemy IV's army at the Battle of Raphia (217 BCE) consisted of 75,000 men. There were 70,000 infantry, including 11,000 recently hired Greek, Thracian, and Galatian mercenaries and 23,000 Egyptians and Libyans, as well as 36,000 cleruchs. There were also 5,000 cavalry, including 2,000 recently hired Greek mercenaries and 2,300 Libyans, and 700 cleruchs.<sup>168</sup> If each infantryman was paid one drachma a day, each cavalryman two drachmas, and their officers (about 1 percent of the troops) ten drachmas, this army would have cost at least 5,300 talents a year just in salaries. The Ptolemies did not conduct major land campaigns every year, however, so normally the cost of the military would have been less. Most cleruchs did not have to be paid except for elite troops and bodyguards, and there would have been fewer recent recruits except to serve in garrisons, so the annual cost may have been around 2,000 talents a year in salaries.<sup>169</sup>

**State Employees:** The Ptolemaic state supported large numbers of personnel through redistribution, in the form of salaries and wages for state officials, soldiers on duty, workers in commodity monopolies, and other employees. The Ptolemaic state typically paid salaries and wages in a combination of money (*opsōnia* or *misthoi*) and grain or bread (*sitometria*), and frequently also in oil (*elaiometria*), clothing (*himatismos*), and wine. Payments in kind were often accounted in money and deducted from money wages, however, blurring the distinction between sale and redistribution of commodities.<sup>170</sup> State officials were expected to support themselves and their immediate subordinates from their salaries, as well as purchase office supplies such as papyri.<sup>171</sup> Apparently they were subject to audits, because they frequently kept records of payments and expenses in both money and kind.<sup>172</sup> Soldiers received salaries only when on duty, but they usually received grants of land to support themselves off duty after their first tour of duty. Workers in commodity monopolies were paid only during their contracts for the commodities that they produced. Some workers were paid in advance and shortfalls in production were treated as debts.<sup>173</sup>

State officials, from the chief finance minister (*dioikētēs*) to royal scribes (*basilikoi grammateis*) and village scribes (*kōmogrammateis*), were also frequently assigned vacant lands to bring under cultivation and provide the state with

their harvest taxes. Payment of these harvest taxes was a condition of holding office.<sup>174</sup> In the third century BCE, the Ptolemies frequently assigned large gift estates (*dōreai*) to high officials for the duration of their service,<sup>175</sup> and to “ten-thousand aroura men” (*myriarouroi*, Egyptian  $\text{C}_3\text{-n-10,000}$ ).<sup>176</sup> These officials were expected to develop their estates through irrigation projects, by founding and building towns to attract and house settlers, by hiring agricultural labor to work the newly cultivable land or by renting it to tenant farmers, and by organizing state monopolies to supply the settlers with various commodities, so that when the state reclaimed the gift estates at the end of their recipients’ careers, they would be more valuable than when they were assigned. The recipients of these large gift estates tended to employ existing state redistributive networks. State taxes and other revenues were paid into the local branches of the state granaries and royal banks, and the estate holders used them for irrigation and construction projects, for seed loans to tenant farmers, and for the salaries of local officials, hired agricultural labor, and workers in commodity monopolies,<sup>177</sup> both in money (*opsōnia*) and in kind (*sitometria*).<sup>178</sup> Such large gift estates became much less common after the third century BCE, however, presumably because most of the land that could be developed in this way already had been.<sup>179</sup>

**Temples:** As in previous periods, the Ptolemies continued to use temples as their institutional agents in the redistributive economy, particularly for older revenue sources such as sales taxes in money and harvest taxes in kind. Admittedly, the Ptolemies transferred responsibility for collecting some revenues away from the temples to the state, but they usually compensated the temples with similar revenues from the state. For example, they initially allowed the temples to survey and collect the harvest taxes from agricultural lands in their temple endowments, in return for giving the state a share of the harvest taxes. Later, however, they assigned to state agents the responsibility for surveying and collecting harvest taxes from temple lands, from which a share was given to the temples. Similarly, they initially allowed the temples and their associated notaries to collect the sales taxes on property transfers, but later required the sales taxes to be paid to the state banking system. Furthermore, the Ptolemies allowed the temples to retain responsibility for collecting some revenues. For example, the temples managed the necropoles, and collected fees from mortuary priests in return for allowing them to build tombs and inter individuals there. Thus the Ptolemies appear to have been primarily interested in controlling revenue collection, rather than in suppressing the temple redistributive networks.

Indeed, the Ptolemies had several reasons to maintain the temple redistributive networks. Perhaps most importantly, temple revenues provided offerings to the gods of the temples, which then reverted to the temples and their priests



to serve as their incomes. Maintenance of these offerings was one of the ideological justifications for Egyptian kingship, and maintenance of the incomes of the priests ensured their continued ideological support for the Ptolemaic monarchy. In contrast to state salaries, however, priestly incomes seem to have been paid primarily in kind. The state therefore permitted the temples to continue to produce a number of commodities for redistribution to priests and temple employees, such as linen, oil, and beer. The state forbade anyone to sell these commodities, however, presumably to avoid competition with the state commodity monopolies.

**Papyrus Revenue Laws, cols. 51–52:**<sup>180</sup>

When they wish to manufacture sesame oil in the temples, they shall call in the manager of the contract and the agent of the provincial manager (*oikonomos*) and the checking-scribe (*antigraphēus*) and make the oil in their presence; and they shall manufacture within two months the amount which they declared that they would consume in the year. But the castor oil which they use they shall obtain from the contractors at the fixed price.

The provincial manager and the checking-scribe shall write down the amounts of castor oil and sesame oil used by each temple and send the list to the king, and shall also give one to the chief finance minister (*dioikētēs*). It shall not be lawful to sell to any person any of (52) the oil manufactured for the temples; whoever does so shall be deprived [of the oil], and shall in addition forfeit [100 drachmas] for each *metrētēs*, and for more or less in proportion.

Despite this regulation, priests often leased their positions and their incomes for cash payments, especially in the second and first centuries BCE.<sup>181</sup> The Ptolemies also continued to exact some levies on temple commodity production. This can be seen in the Memphis Decree of Ptolemy V dated to 196 BCE, which capped or abolished some of these levies and remitted back payments, primarily for the state's share of linen produced by temple personnel. Curiously, the decree also remitted the back payments of the state share of harvest taxes from temple lands, for which the state was now responsible for collecting.

**The Memphis Decree of Year 9 of Ptolemy V (196 BCE), Rosetta, lines 9–10:**<sup>182</sup>

Moreover, he ordered concerning the priests that they should not pay their tax on becoming priests above what they used to pay up to Year 1 under his father; he released the people (10) [who hold] the offices of the temples from the voyage they used to make to the Residence of Alexandria each year; he ordered that no rower should be impressed into service; and he renounced the two-thirds share of the fine linen that used to be made in the temples for the Treasury.



**The Memphis Decree of Year 9 of Ptolemy V (196 BCE), Rosetta, lines 16–18:**<sup>183</sup>

He remitted the arrears (17) that were due to the King from the temples up to Year 9, and amounted to a large total of money and grain; likewise the value of the fine linen that was due from the temples from what is made for the Treasury, and the verification fees(?) of what had been made up to that time; moreover, he ordered concerning the artaba of wheat per aroura of land, which used to be collected from the fields of the endowment, and likewise (18) for the wine per aroura of land from the vineyards of the god's endowments, he renounced them.

The Ptolemies thus had multiple incentives to encourage efficient management of the temple redistributive networks. The temple manager (*mr-šn*, Gr. *lesōnis*) was now held personally responsible for managing temple activities and revenues, if that was not already the case in earlier periods. If the temple failed to raise enough revenues to make the requisite offerings to the gods and subsequently fully pay the incomes of the priests, and to deliver the required revenues to the king, then the temple manager was expected to make up the difference from his own possessions. This can be seen in the Archive of Milon from Elephantine, consisting of twenty-two Greek and ten Demotic papyri dating from 225 to 222 BCE. Previously, several members of the same priestly family had served as temple manager of the temple of Horus in Edfu, during which time there had been deficits in the collection of land taxes and linen production. The archive reveals that the Greek official Milon then began to auction off the property of the priestly family in order to recover the shortfalls in revenue.<sup>184</sup>

**Private Funerary Endowments:** In the Ptolemaic Period, numerous private funerary endowments are known from the private archives of mortuary priests. These archives frequently refer to inheriting and even buying and selling tombs and mummies, which was shorthand for transferring the funerary cult service obligations for these tombs and mummies as well as the rations and incomes received for performing said service obligations.

The private archives of mortuary priests do occasionally refer explicitly to the rations and incomes associated with tombs and mummies. The inheritance contract Papyrus BM 10827 (Andrews 14), line 4, from Thebes, dated to Year 13 of Ptolemy II (270 BCE), donates a number of tombs and mummies “and their rations of Osiris.”<sup>185</sup> The account Ostrakon Universität Zürich 1869 (*O. Taxes* 2, 156), from Thebes, dated to the third century BCE, is a list of rations or loaves of bread given to several mortuary priests.<sup>186</sup>

The private archives of mortuary priests never refer to the actual revenue sources, however. Presumably revenue sources were now exclusively donated to temples, and were no longer placed directly in the care of the mortuary

priests, as was frequently done in the preceding Saite and Persian Periods. Records of private donations of revenue sources to temples to establish such funerary cults have not survived, however. Donation stelae were no longer used, and temple archives are rare.

The private archives of mortuary priests do occasionally preserve contracts appointing the mortuary priests to serve a particular tomb. Prior to the Ptolemaic Period, labor or service contracts were rarely governed by written contracts, so these service contracts usually adapt traditional property transfer contracts with additional clauses governing the mortuary priests' service of the tomb in question. Different types of property transfer contracts were adapted, depending on who supplied the tomb, and how.

Papyrus BM 10240 (Reich), from Thebes, dated to Year 20 of Ptolemy III (228 BCE), is one such appointment of choachyte contract, in which the choachyte supplied the tomb and retained ownership.<sup>187</sup> The initial clause is "You are my choachyte of this tomb," followed by the identification of the tomb by specifying its neighbors, and the fact that the choachyte had previously purchased it. The second contractor is then said to be the choachyte of the aforementioned tomb for ninety-nine years, along with his children and grandchildren until eternity. The second contractor may not place another mummy in the tomb without the permission of the first contractor, while the first contractor may not appoint another choachyte to the tomb, subject to a penalty of twenty silver deben or 100 staters. There is other evidence that choachytes sometimes supplied the tombs for their clients. The burial plot receipt O. BM 66383 (Andrews 13), was issued to one Harsiesis son of Amenotes, who is known from P. BM 10240 (Reich) to have been a choachyte. The burial plot receipt says "that he built for the exalted one Psenthotēs," presumably a client of his.<sup>188</sup>

Papyrus Philadelphia 24, from Thebes, dated to Year 21 of Ptolemy III (227 BCE), is another appointment of choachyte contract, adapted from a traditional lease contract, in which the choachyte's client supplied the tomb by leasing it to the choachyte.<sup>189</sup> The initial clause is "I have leased to you this chapel upon the necropolis of Djeme in the west of Thebes," followed by the identification of the tomb by specifying its neighbors and the fact that the choachyte's client had previously purchased it from the manager (*mr-šn*) of the temple of Amun, who made him a lease (*šhn*) for it. Then, instead of the regular series of clauses giving the rights and obligations of the contractors as lessor and lessee, there are a series of clauses giving the rights and obligations of the contractors as choachyte and client, similar to those in Papyrus BM 10240 (Reich), except that the penalty is ten silver deben or fifty staters. There is evidence that many contracts between choachytes and their clients were leases. In P. Louvre 2429bis (*Schreibertradition* 5), dated to Egyptian year 13 of Ptolemy I, Pchorchonsis son of Panas sells all of his

property to his wife Neschonsis daughter of Teos, including “my occupation of choachyte of Hermonthis, concerning which the priests of Mont lord of Hermonthis of the 4 phyles made a lease for me.”<sup>190</sup> Similarly, in P. Louvre 2428 (*Schreibertradition* 108), dated to Egyptian year 8 of Ptolemy II, the same Pchorchonsis son of Panas gives up claim to all of his property in favor of his wife Neschonsis daughter of Teos, including “my occupation (as) choachyte of Hermonthis and the leases which were made for me in the temple (and) the town.”<sup>191</sup>

Papyrus BM 10388 (Andrews 2), from Thebes, dated to Year 24 of Ptolemy III (223 BCE), is yet another appointment of choachyte contract, adapted from a traditional sales contract, in which the choachyte supplied the tomb and sold it to the client.<sup>192</sup> The initial clause is “You have satisfied my heart with the money of the price of ...,” followed by the identification of the plot by specifying its neighbors, and the fact that the choachyte had previously purchased the plot from the god Amun. Then comes the regular series of clauses giving the rights and obligations of the contractors as buyer and seller, followed by a series of clauses giving the rights and obligations of the contractors as choachyte and client, similar to those in Papyrus BM 10240 (Reich), except that the penalty is ten silver deben or fifty staters.

#### EXCHANGES

Rostovtzeff and Preaux once argued largely on the basis of Greek papyri from the Ptolemaic Fayum such as the Papyrus Revenue Laws, the Menches Archive, or the Zenon Archive, that the Ptolemaic kings claimed ownership of all agricultural land in Egypt. They granted the temporary use of some land to temples as temple land (*hiera gē*), some to officials as gift estates (*dōreaî*), some to cleruchs (*klērouchoi*) as cleruchic land (*klērouchikē gē*), and leased the rest as royal land (*basilikē gē*) to the predominantly Egyptian population, which became known as royal farmers (*basilikoi geōrgoi*). However, as the true owners of the agricultural land, the Ptolemaic kings decided which crops would be sown where, and received a considerable share of the harvest as taxes.<sup>193</sup>

It is now believed, however, because of Demotic papyri from the Nile Valley, that outside of the Fayum the proportion of royal land (*basilikē gē*) was relatively small, and the proportion of temple land (*hiera gē*) relatively large. These papyri also show that temple land was usually treated as private property with a tax obligation to the temples, rather than as institutionally cultivated land. Furthermore, reexamination of Greek papyri from the Fayum and elsewhere have revealed that cleruchic land (*klērouchikē gē*) was effectively also treated as private property with a tax obligation to the state, and only rarely reverted to the state. Consequently, a very significant proportion of agricultural land in Ptolemaic Egypt was effectively private property over which the state had

relatively little direct control.<sup>194</sup> As long as the effective owners of such property fulfilled their harvest tax and service obligations to the state or temples, the effective owners were free to dispose of their property or its surplus agricultural produce as they wished, either through redistribution or through market exchange. Similarly, individuals owed personal and occupational taxes and service obligations to the state, but once they paid them they were free to dispose of their surplus labor as they liked.

At least some of this privately owned property and labor was distributed through exchange rather than redistribution. Redistributive networks rarely distribute goods and services exactly where they are desired, in precisely the quantities desired. Consequently, there is a general tendency for redistributive networks to generate or feed into exchange networks, which further redistribute the goods and services. Furthermore, in Ptolemaic Egypt redistributive networks frequently operated in money rather than in kind. This would have increased the interdependence of redistribution and exchange, because individuals had to exchange goods and services to obtain money for taxes to the state, and they had to exchange state payments in money to obtain desired goods and services. There is less direct evidence from Ptolemaic Egypt for exchange than for redistribution, however, because the state did not document exchanges as thoroughly as redistribution. There is very little direct evidence for relatively low value property transfers, because such transfers were rarely documented, but there is some direct evidence for relatively high value property transfers, because the state encouraged local documentation and helped enforce the transfers.

**Marketplaces:** Marketplaces are convenient locations for exchanges, because they bring together potential buyers and sellers, and allow them to compare wares and exchange offers. Riverbanks probably continued to serve as marketplaces in the Ptolemaic Period, as they had in the New Kingdom, though there are no tomb scenes or ship's logs to confirm this. There are, however, numerous references to ships owned by institutions such as temples or by royal family members,<sup>195</sup> as well as to privately owned ships.<sup>196</sup> Most of the references concern the transportation of grain taxes and monopolized commodities,<sup>197</sup> but the ships could also have carried private goods, especially outside of the harvest tax season. This is supported by receipts for freight charges or transportation fees (Greek *porthmis*, *porthmika*, or *diagōgē*; Demotic *hm.t*),<sup>198</sup> which suggest that ships transported cargos for exchange and not just for redistribution, since taxes on the transportation of taxes would be redundant even by Ptolemaic standards.

Exchanges do not have to take place in marketplaces, however. For example, the Ptolemaic state usually used auctions to sell confiscated properties,<sup>199</sup> tax-farming contracts, and the products of production monopolies of commodities like oil or cloth. In contrast, the operators of retail monopolies of

oil and cloth employed itinerant retailers to take small quantities directly to potential buyers, rather than wait for them to visit a market place. Operators of combined production and retail monopolies of bulky commodities like beer, however, sold their wares at their breweries due to the cost of transportation. Likewise, real estate markets existed without a physical marketplace.

**Land:** Evidence for land ownership and transfer in the Ptolemaic Period (332–30 BCE) primarily comes from two sources, namely the Fayum and Upper Egypt. Early studies of the Ptolemaic economy, notably those of Preaux and Rostovtzeff, relied heavily on Greek textual evidence from the Fayum, and particularly from the archive of Zenon, manager of the large gift-estate of Apollonios, who was probably the architect of Ptolemy II's tax reforms.<sup>200</sup> They were also influenced by the rhetoric of Classical Greek authors such as Herodotos and Isocrates, who claimed that Near Eastern monarchs treated their kingdoms as their personal property and their subjects as slaves, in contrast to free private-property owning Greek citizens. Extrapolating from these sources, Preaux and Rostovtzeff argued that the early Ptolemies, like the Persians and the Egyptian kings before them, treated Egypt as their personal property. The native Egyptians were reduced to landless tenants on royal land, while Greek cleruchs and officials were generously granted the use but not the ownership of their cleruchic land and gift-estates during their lifetimes. Only the weakness of the later Ptolemies led to the emergence of effectively private property in Egypt, which in turn led to the rise of a bourgeois middle class, free markets, and market forces, based on the models developed earlier in Greece.<sup>201</sup>

Subsequent studies of the economy of Ptolemaic Egypt, notably by Manning, have used the Egyptian sources from Upper Egypt to complement the picture provided by Greek textual sources from the Fayum. These Egyptian sources show that the land held by traditional Egyptian temples could in fact be inherited, bought, and sold by private individuals, and should be considered as effectively private property, albeit with tax obligations to temples. Similarly, cleruchic land should also be considered as effectively private property, with an obligation to serve in the army when called up, and restrictions on the inheritance and transfer of the land to those unable to serve. Thus only holders of royal land should be described as landless tenant farmers. Consequently, Manning has argued that there was a much lower proportion of royal land and much higher proportion of temple land in the Nile Valley than in the Fayum.<sup>202</sup> Unfortunately, the only quantitative source for the proportion of private land (including both clerouchic land and temple land) to royal land in the Ptolemaic Period comes from the Fayum, where it was approximately 1:1. However, in the succeeding Roman Period there are quantitative sources for both the Nile Valley and the Fayum, and the proportion of private land to royal or public land was between 4:1 and 3:1 in the Nile Valley, and 1:1 in the Fayum.<sup>203</sup>

Monson has argued that at least some royal land in Ptolemaic Egypt was actually managed locally and semicommunally by villages, rather than centrally by the state as Rostovtzeff had assumed. Monson also suggested that there was more private land relative to semicommunal royal land in the Nile Valley than in the Fayum because the Nile Valley had been settled much longer than the recently reclaimed Fayum, and was consequently more densely populated, discouraging semicommunal land-holding.<sup>204</sup>

**Houses:** Evidence for house ownership and transfer in Ptolemaic Egypt is provided by numerous Demotic and Greek sale and inheritance contracts concerning houses and shares of houses. Partible inheritance frequently fragmented ownership of houses, resulting either in physical division of properties or in shared ownership of undivided properties. Both outcomes encouraged sales and other transfers as well as strategic marriages in order to reunite divided portions or dispersed shares of houses.<sup>205</sup> Some transfers and marriages probably required little or no money, but the sales taxes paid on some house sales suggest that they were cash transactions.<sup>206</sup>

**Priestly Positions or Prebends:** Shares of appointments in temples were sometimes transferred in the Ptolemaic Period, but the form of payment is rarely specified. For example, the Demotic and Greek archive of Totoes son of Smanres, dating from 194 BCE to 100 BCE, records several transfers of days of service in the temple of Hathor at Deir el-Medina and other chapels in western Thebes, together with their corresponding revenues.<sup>207</sup> Similarly, a group of Demotic papyri from Soknopaiou Nesos records four transfers of shares of service days in a chapel of Harpsenesis, dating between 122 BCE and 42 BCE.<sup>208</sup> Other documents that appear to record transfers of chapels or parts thereof may implicitly include their priestly appointments and revenues.<sup>209</sup> The archive of Amenotnes called Zoilos son of Horos, dated from 198 BCE to 176 BCE, documents several transfers of parts of a sacred ibis catacomb in western Thebes,<sup>210</sup> while three Greek and Demotic wooden tags dating to 255 BCE may record an earlier state sale of a half share of the same sacred ibis catacomb for cash.<sup>211</sup> Temple priests sometimes also leased their days of service and their corresponding incomes in kind in return for cash payments.<sup>212</sup> Transfers of shares of appointments in private mortuary cults also occurred frequently. Such transfers were often described as donations, sales, and cessions of tombs or mummies, but there was an obligation to perform their cult in return for their revenues or incomes, usually implicit but sometimes explicit.<sup>213</sup>

#### ENTREPRENEURIAL ACTIVITIES

Goods and services may be redistributed or exchanged, but they may also be invested as capital and labor to produce other more desirable goods and

services. The state engaged in a variety of entrepreneurial activities. There were military campaigns and paramilitary expeditions. There were also numerous infrastructure projects, and the production and sale of various commodities. The Ptolemies restricted the roles of temples in entrepreneurial activities, however, which were usually limited to production and distribution of commodities. Private entrepreneurs, on the other hand, were encouraged to share the risks of state production and distribution of commodities for a share of the potential profits.

**Expeditions:** The Ptolemies conducted major military campaigns, both by land in the Levant, and by sea in the Eastern Mediterranean. Initiating these military campaigns incurred additional costs beyond the regular redistributive costs of maintaining an army or navy. For example, cleruchs (*klērouchoi*) and salaried soldiers (*misthophoroi*) formed the core of Ptolemaic armies, but the Ptolemies always supplemented them with newly recruited mercenaries, and all of these had to be paid and supplied during the campaign.<sup>214</sup> In contrast, impressed merchant ships served primarily as transports, while the core of the Ptolemaic navies consisted of warships that had to be built or refitted specifically for a campaign, and whose crews had to be paid and supplied during the campaign.<sup>215</sup> These campaigns were therefore expensive, but if they were successful they also brought in revenues, both in the short and in the long term. Short-term revenues consisted of booty, as much as 1,500 silver talents after the capture of Seleucia and the sack of Antioch by Ptolemy III. Long-term revenues included taxes from provinces added to the Ptolemaic Empire, such as Cyprus, Cyrenaica, and Syro-Palestine, estimated to have been between 4,000 and 8,000 talents annually. It is these revenues that allow military campaigns to be considered “entrepreneurial.”<sup>216</sup> The early Ptolemies also mounted paramilitary expeditions to the southern coast of the Red Sea to capture elephants for their armies. These expeditions required the construction of special ships (*elephantigoi*) to transport captured elephants back to ports on the Egyptian coast of the Red Sea.<sup>217</sup>

**Foundations:** The Ptolemies and their agents founded and refounded many settlements. I would argue that they frequently did so by establishing one or more redistributive institutions in the new settlements, such as garrisons of salaried soldiers (*misthophoroi*), or Egyptian temples, or even the royal court and dockyards in Alexandria. Such redistributive institutions guaranteed that the new settlements would have had an initial group of inhabitants with disposable incomes that could then attract other settlers. The foundations of some settlements may have also included land grants, particularly those in the Fayum, which would have attracted further agrarian settlers. Other settlements included harbor facilities, as at Alexandria and the Red Sea ports, which would have attracted merchant settlers. Most of these settlements, if successful, would



have generated revenues for the state, which meant that the initial assignment of state revenues to redistributive institutions and infrastructural projects was a state entrepreneurial activity.

**Alexandria:** Alexander the Great is usually credited with founding Alexandria, though there is growing evidence that there were already some harbor facilities there before he arrived. The foundation flourished in part due to the establishment of the Ptolemaic court and royal dockyards there, and their redistributive networks. However, Alexandria also benefitted from several early Ptolemaic infrastructure projects, such as the breakwaters, the heptastadion linking Pharos Island with the city, and the harbors that they formed, not to mention the Pharos lighthouse, which together with the royal court made Alexandria a focus of international trade.<sup>218</sup>

**The Fayum:** The early Ptolemies are credited with reclaiming large amounts of land in the Fayum basin. They presumably built dikes to prevent the annual Nile flood from reaching the Fayum basin, in order to allow the level of Lake Moeris to fall to expose more cultivable land. They presumably also dug canals around the rim of the Fayum basin, to supply water that no longer arrived with the annual Nile flood. The Ptolemies then assigned the reclaimed land to various agents, either nomarchs or myriarourai, who were expected to develop it.<sup>219</sup> The Ptolemies then gave the land to officials as gift estates (*dōreai*) and to cleruchs (*klērouchoi*) as allotments (*klēroi*), or leased it to royal farmers (*basilikoi geōrgoi*). However, they may also have assigned some of the land as endowments for older temples, such as that of Isis–Hermouthis at Narmouthis (Medinet Madi), or to establish new temples to serve as nuclei for new settlements in reclaimed areas where there were no older settlements.<sup>220</sup>

**The Nile Valley:** Middle and Upper Egypt were densely populated in the Ptolemaic Period, so there was less scope for new foundations there than in other areas. Nonetheless, in Upper Egypt, Ptolemy I is credited with founding the city of Ptolemais Hermiou,<sup>221</sup> and the provincial governor (*stratēgos*) Boethos founded the city of Euergetis in the mid-second century BCE.<sup>222</sup> Furthermore, the Ptolemies also rebuilt or enlarged a number of temples in Upper Egypt, and after the Upper Egyptian Revolt of 205–186 BCE they established several garrisons of salaried soldiers there, of which Pathyris (Gebelein) is the best known.

**Nubia:** The Ptolemies conquered and controlled the northern portions of Lower Nubia known as the Dodekaschoinos or the Triakontaschoinos, though they lost control of them during the Upper Egyptian Revolt of 205–186 BCE, and possibly again toward the end of the Ptolemaic Period.<sup>223</sup> The Ptolemies founded several temples in Lower Nubia, at Debod, Talmis (Kalabsha), Pselkis (Dakka), and Primis (Qasr Ibrim), and probably a garrison at Primis as well, which may have served as nuclei for new settlements.<sup>224</sup> A Greek honorific decree on Sehel Island dedicated to Ptolemy VI and the provincial governor



(*stratēgos*) Boethos records that the latter founded two such new settlements, Philometoris and Kleopatra, somewhere in the Lower Nubia.<sup>225</sup>

**The Red Sea:** The early Ptolemies and their agents built roads and wells in the Eastern Desert in order to supply mining expeditions in the Eastern Desert with food and water. They also established several harbors on the Egyptian coast of the Red Sea, of which Berenike was the most successful, in order to supply elephant hunting expeditions to the southern Red Sea. They extended the roads and wells to reach these harbors, and they even restored a canal through the Wadi Tumilat to the harbor of Arsinoe/Cleopatra in the Gulf of Suez. The early Ptolemies also established harbors and inland hunting bases farther south nearer to the elephant hunting grounds proper, but these were more ephemeral because the hunting grounds were regularly exhausted and new ones had to be found. After the elephant hunts ceased, the later Ptolemies used Berenike to support trade with South Arabia, and later with India after the monsoon winds were discovered.<sup>226</sup>

**State Production and Sale of Commodities:** The early Ptolemies also sponsored entrepreneurial production and sale of certain commodities like vegetable oil, cloth, papyrus, beer, and so forth, through a system of commodity monopolies. In theory, the state auctioned the right to produce and sell specific commodities in specific districts to private entrepreneurs. In practice, however, the private entrepreneurs merely underwrote the state production and sale of these commodities. Some commodities, such as oil and cloth, were divided into separate production and sale monopolies; while others, such as beer, combined the two. In production monopolies, the state usually sold the raw materials to the entrepreneurs at a fixed price, such as vegetable seeds for oil, or flax for linen. The state also provided machinery to the entrepreneurs, such as oil presses or weaving looms. The state also fixed the wages that the entrepreneurs paid to laborers, and required the laborers to produce bonds ensuring their presence at work. The only variable left to the entrepreneurs was the number of laborers that they hired. The point of this was to allow entrepreneurs to closely calculate their costs, and thereby encourage relatively high bids for the commodity monopolies. In sale monopolies, the state provided commodities to merchants, who had to produce bonds guaranteeing that they would not abscond with the valuable commodities. The merchants then sold these commodities.

**Private Entrepreneurial Activities:** Private entrepreneurial activities took many forms. A few wealthy and powerful individuals like the chief finance minister (*dioikētēs*) Apollonios and the provincial governors (*stratēgoi*) Boethos and Kallimachos undertook infrastructure projects such as founding cities and temples. However, these individuals all held important state offices, and can be seen as state agents. Much private entrepreneurial activity probably took the form of underwriting the state collection of taxes through tax farming; or underwriting the state production and sale of monopolies through commodity

monopolies; or underwriting state administrative activities by leasing banks and registries. Lesoneis appear to have similarly underwritten temple economies,<sup>227</sup> but there may have been fewer opportunities to make a profit and more opportunities to incur a loss, judging from the difficulties in finding individuals to undertake the task in the Persian Period. Priestly households received much of their salaries from the temples in kind, and thus they frequently sold their surplus scribal labor,<sup>228</sup> or even leased their positions and their revenues in return for money.<sup>229</sup> The majority of Egyptian households probably engaged in agricultural activities that primarily produced revenues in kind, and consequently the need to pay capitation taxes in money must have forced many of them to sell their surplus labor or to engage in small scale entrepreneurial activities.

### CONCLUSIONS

In the Ptolemaic Period, the state prosecuted interference with royal revenues throughout Egypt, and cooperated with local Egyptian temple courts and Greek provincial courts to adjudicate disputed private property transfers. Enforcement relied heavily on written documentation. The state continued to document harvest taxes for individual fields, but reclaimed from temples the responsibility for documenting harvest taxes on temple endowments. The state continued to document labor obligations for individual people, to which were added capitation taxes in money. Local temple notaries remained responsible for documenting private property transfers and associated sales taxes, but the state began registering such property transfers and sales taxes as well, as it began to take back responsibility for documentation from temples. Temples continued to document burial taxes, however, while the state continued to document customs duties.

Written documentation and the increased use of coinage reduced transaction costs for both redistribution and exchange, but state enforcement of royal redistribution had a longer reach than local temple or provincial court enforcement of exchanges. The state encouraged the use of coinage, but limited supplies required the use of various forms of money credit, and helped preserve redistribution and exchange in kind. Donations of land continued to be used as royal rewards for officials and soldiers for service, but salaries were increasingly paid in coin rather than kind. Higher value exchanges frequently involved coinage, and many were documented with written contracts. Many low value exchanges probably took place in markets, but most of these were not documented in writing. Short-term employment for payment in coinage appears for the first time alongside short-term compulsory labor for the state, but long-term employment with state and temple organizations was still common.