

The Dark Side of the Coin:

Working Families in Urban Rome

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Abstract:

Roman Economics is a subject area that is fast gaining momentum in the classical world. Although there are numerous studies regarding workers, economics and families, the scholarship is thin when combining all of these aspects to analyse family survival as a whole. With this in mind, we can begin to answer the question, how did urban families survive in the Roman Empire? The thesis revolves around skilled labourers and addresses not only men's financial contributions but women's contribution as well. To discuss these issues, we use material from an array of locations and periods. Any gaps in the evidence are approached using comparative studies.

The discussion begins with an assessment of the costs of living in an urban setting, food, necessities and housing all come into play with these expenses. We then move on to an investigation into the income and daily realities of ordinary Romans, primarily men. After the completion of this section, it is clear that a single income was not enough to support a family. Thus we move on to an investigation on women's contribution to the family income. This discussion focuses on craftswomen and assesses their contribution through a life stages approach. The overall conclusion of this thesis is that families survived through a combination of two incomes, and networks that facilitated their lives, both socially and financially.

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Introduction:¹

The study of ancient economics has seen a rise in popularity in recent years. As a result, there have been numerous publications that have progressed the subject significantly. Some of these studies, such as the 'Oxford Studies on the Roman Economy' have made use of multi-disciplinary approaches to offer a fresh approach to Roman economic life. 'The Oxford Studies' was what inspired the use economics as a way to provide insights into social history. There are aspects of Roman daily life that have little to no evidence. The use of incomes and costs could be used to understand not just financial needs, but personal motivations that influence economic participation. By understanding these motives, we can begin to build a picture of the daily lives of otherwise under-represented groups in our evidence.

This thesis aims to explore economic realities faced by a sector of urban society, best thought of as 'ordinary Romans'—labourers, skilled craftsmen who worked hard in the city to build a life for themselves and their families. Families are an essential aspect of this group. While much of the analysis will concern men and their income, it quickly becomes apparent that we need to consider the economic realities of individuals in the context of working families, paying close attention to the buying power of their wages and the cost of living in urban centres around the empire. In other words, a comprehensive view of the Roman family as an economic unit will be presented to understand how families survived. This involves more than economic analysis; we have to consider society, community and social norms that are an integral part of the financial realities that craftsmen and their families faced. This approach will provide a unique perspective on the Roman family as well as further insight into what it meant to be a skilled labourer in the Roman Empire.

¹ Translations are my own unless otherwise stated

The use of ancient economic theory will enhance the overall assessment, but does not come without difficulties and much scholarly debate. Ancient economic discourse began in the 1890's and focused on individual performance. On one side of the argument, the 'primitivists' believed that the economy was small scale and households were self-sufficient. On the other side, the 'modernists' suggested Greco-Roman economies were similar to fourteenth and fifteenth-century European economies.² The ancient economic debate was revived between 1950 and 1970 when historians saw the limitations of studying ancient economics in the context of individual performance. By the 1970's a consensus was reached with Finley, who claimed social structure and status drove Greco-Roman economics.³ Finley believed Greece and Rome were consumer cities and exploited the countryside and made money through tribute and slavery.⁴ Scholars like Hopkins added to this opinion claiming that Rome was one of five slave societies in recorded history. Hopkins theorised that Rome was absent of a labour market and claimed: "in a society without a market in free labour, recruitment by force (i.e. slavery) was probably the only method of securing large numbers of full-time dependants with particular skills."⁵ However, since the 1990's a new view has taken rise which demonstrates that the Roman economy was a market economy. Peter Temin is at the forefront of this research. He asserts: "the economy of the early Roman Empire was primarily a market economy. The parts of this economy located far from each other were not tied together as tightly as markets often are today, but they still functioned as part of a comprehensive Mediterranean market."⁶ As demonstrated by the years of

² Most famously Karl Bücher, a German classical scholar turned economist. Bücher confronted his 'modernists' colleagues, namely Eduard Meyer. Meyer believed that classical economy developed in the same way that the economy developed from the middle ages to mercantilism in Northern Europe. Bücher disagreed, believing that the economy centred around the household. See Schefold 2016, 18-19 for a full discussion on the history of economic theory.

³ Finley 1973, 60

⁴ Finley 1980, 68; "In early societies, free hired labour (though widely documented) was spasmodic, casual, marginal." Finley maintained this view despite the evidence presented by Brunt (1980) "Free Labour and Public Works at Rome"

⁵ Hopkins 1978, 111

discourse, ancient economic analysis is comprehensive and progressing. However, a factor that must not be excluded from a discussion of ancient economics is the importance of societal influences. An underlying factor to consider alongside all economic modelling is the Roman psyche and class structure that influenced the way Roman's lived their day to day lives.

The advancement of the market economic model and how it applies to Roman economics allows us to look closer into the involvement of ordinary Romans and their contribution to the market economy. By accepting the presence of free Romans in the workforce, we can study those who were performing these jobs, and how their work influenced their lives. Within this study, we look at the economic prosperity (or lack thereof) of ordinary Romans and apply that to their lives in a 'social historic context'. By analysing incomes and outgoings and applying financial data to daily reality, we can answer the question: how do ordinary Roman families survive financially, what impact does their financial reality have on their social lives? By merging these two disciplines, we can identify and investigate the economic issues that individual families had while assessing daily realities that influenced financial prosperity, stability and advancement. These familial, economic issues include; making enough money to buy food, pay for rent, saving enough money in case seasonal work falls through and bettering the financial situation and social standing of the family name. The majority of these issues revolve around surviving, rather than thriving. There would have been a 'middle class'⁷ of people who likely did thrive economically, but our analysis will be on families who worked as skilled labourers—urban families who could survive the urban environment, but at times struggled to find enough money to survive.

This thesis focuses on the survival of families living in urban centres rather than rural workers. Urban workers were more reliant on their income, as their only source

⁶ Temin 2001, 169

⁷ For a discussion on defining the middle class, see Mayer 2012

of food was through paid work or food distributions. This reliance increases the importance of a steady career, opening up more questions on survival and social advancement. Also, concentrating on survival gives us a tool to understand worker's motives. Motives are crucial when assessing aspects of history where evidence is thin, or unreliable. Social expectations change throughout history, but the fundamental motivations remain the same. We all strive to survive, and in a sense, find financial security. These motivations give us a rounded understanding of the realities of family life in the ancient world and help understand gaps left in the evidence.

Any investigation into the socio-economic reality of ancient Rome must also address the nature of the evidence. The majority of the evidence comes from epigraphical and literary material across the empire, spanning different time periods and locations. Particular mention will be given to the use of Egyptian evidence as this is a contested source. Many Roman historians have chosen to ignore papyrological evidence, due to the assumption that Roman Egypt was too far removed from Western Roman society.⁸ However, since the early 2000's numerous studies have emerged that show this is not the case and Egypt ought to be considered as part of the Roman Empire both economically and historically.⁹ Ancient authors did not document Egypt as much as the western empire, but the wealth of archaeological evidence more than makes up for this.¹⁰ Because of the cultural differences between Egypt and the Roman West, we must treat the evidence with care. At the very least it should be used as a comparative analysis would be, that is to say, the use of Egyptian material is not perfect, but when left with a significant gap in evidence from Rome, it is a beneficial source to use. The currencies are easily converted (as we have conversions from both Roman and Egyptian texts), the

⁸ For example, Manning and Morris 2005, look at historiography via the "divided-Mediterranean model". See Keenan 2009, 178-179 for more on this model.

⁹ See Rathbone 2002, Bagnall 2005, and Kennan 2009

¹⁰ Rathbone 2002, 155

political and elite systems were very similar by the Imperial period, and the methods of large-scale crafts were almost identical.¹¹ These reasons combine to show that papyri are an invaluable source and should not be ignored. For this study, papyri provide essential information regarding apprenticeship contracts, giving details unavailable from Italian evidence.

As this thesis centres around the survival of a family unit specifically, it is important to outline a few definitions and assumptions regarding the family that will be used throughout the paper. In Latin, the term *familia* is the most closely related to family. The *familia* has a complicated definition, as outlined by Saller and Shaw in their 1984 work on the *familia* and *domus*, or household.¹² Saller and Shaw concluded that although there was no word for it, the Roman's dominant family structure was similar to the typical nuclear family we are accustomed to today.¹³ Pomeroy and Parkin agree, noting that "It has become increasingly clear over recent decades that the nuclear family structure was the norm among Roman citizens in the classical period."¹⁴ Nevertheless, social obligations could see family units made up of an array of relatives. The term 'nuclear' can be misleading as it often invokes modern conceptions. Therefore, the term 'nuclear' will be avoided to account for an ever-changing family structure. Here, epigraphical evidence helps us to determine family size. An assessment of 4335 Italian commemorations that include children shows that the most common family size was two parents and one child. However, the

¹¹ See Bowman and Rathbone 1992, for full discussion.

¹² Saller and Shaw 1984

¹³ It must be noted that Martin 1996 points out problems with the methodology of Saller and Shaw's study. He points to variations in the 'nuclear family' definition, and how an inscription certainly does not mean co-habitation. Although I am inclined to agree with Martin, his more extensive study still points to the prominence of immediate family members in the inscriptions, and although we do not know if the people mentioned lived together, there is little other evidence that can be used to determine the typical economic family unit.

¹⁴ Parkin and Pomeroy 2007, 74: they came to this conclusion by looking at 666 epitaphs that showed relationships in region XI in Italy. Of the 666, 146 were for husband and wife, 68 for parent to child, 87 child to parent and 30 for siblings. The remaining 89 were for friends, patrons to slave, master to slave, freedman to patron, and twenty commemorated their extended family.

likelihood of two children was also high. Additionally, other relatives can occasionally be included.¹⁵ According to Roman *pietas*, if parents survived to old age, their children would be obliged to care for them.¹⁶ It, therefore, appears that a family group of four people comprised of two adults and two dependants was typical. In this model, dependants can be either children or elderly family members.

The traditional view of a preindustrial family regarded men as the sole wage earner and disregarded other family members, notably women, as participants in the economy.¹⁷ This model, known as 'the family economy' has been criticised in recent years, as being "too static"¹⁸ as it "does not allow for the diversification beyond the household".¹⁹ In other words, a single income family is idealistic but ultimately unrealistic. In reality, able members of the immediate family would contribute to overall income, not just the *paterfamilias*. Moreover, contributors did not necessarily have to live in the same residence, some family members may have lived elsewhere seasonally for work, or children might undergo an apprenticeship away from the family home.²⁰

Accepting a flexible family structure means a versatile model for the 'family economy'. Groen-Vallinga has done some work on this topic and suggests applying Richard Wall's economic model based on early modern English households called the

¹⁵ Huskinson 1997, appendix 1; collates evidence of different sized families. Table 10.1 summarises the families attested with children, 4335 in total, in Italy. She concludes that the majority of families, 71.49%, were attested as having only one child. 19.12% of the families had two children, and the likelihood of a family having three or more children is low.

¹⁶ This was not the case for most of classical Greece. There, children were required by law to care for their parents. In Athens specifically, children only had to care for their parents if they were placed into apprenticeship training. See Vitruvius 6, intro. 3 who states that comic poet Alexis thought the Greeks ought to be praised: "quod omnium Graecorum leges cogunt parentes ai a liberis, Atheniensium non omnes nisi eos qui liberos artibus erudissent." However, there is no evidence of a similar law in Rome, only *pietas*. See Parkin 1997, 128 for full discussion.

¹⁷ Allen 2009, 339, for example

¹⁸ Groen-Vallinga 2013, 301-302

¹⁹ Groen-Vallinga 2013, 302

²⁰ Groen-Vallinga 2013, 301

'adaptive family economy'.²¹ This model is fundamentally based on opportunism, where family members would work in a diverse range of jobs to maximise their income.²² Like the preindustrial 'family economy', the 'adaptive family economy' centres on the *paterfamilias* as the main source of steady income, but introduces the idea of both wage labour, and domestic labour to see an overall picture of household income.²³ The use of the 'adaptive family economy' allows for the changing nature of the Roman family. As children left home and people died and remarried, the family changed. Families were diverse in the Roman Empire, and thus, a changeable economic model needs to be accepted.

The overriding question throughout this thesis regards how skilled Romans lived. This encompasses many social and economic considerations and to model them all is simply not possible in a project this size. The objective is to present a framework concentrating on skilled crafts such as bakers, builders, metal workers and the like. Examples will be given to demonstrate possible scenarios, rather than an exhaustive list. These are crafts that should be considered skilled and necessary in society. As such, many different methods of earning money have been excluded, most notably, prostitution, acting, and other similar professions. These professions are skilled, and it can be argued that they meet some social needs, but they introduce complex societal factors that are not required for the basic model this thesis focuses on. Despite the restrictions, it will become clear that this thesis still has a vast scope. For a start, the evidence used covers an extensive period and place. Of course, this adds another element of uncertainty to the study, but without the use of all the evidence available, a study of this type would not be possible. Many shy away from projects as extensive as this, because of these added complexities. However, by acknowledging the limitations in such an investigation, and weaving our evidence and comparative material together, we can begin building up a broader

²¹ Groen-Vallinga 2013, 302; Wall 1986

²² Wall 1986, 265

²³ Wall 1986, 265

picture of family life in Ancient Rome. In the end, it will become clear that in order to survive financially, families had to work together.

Methodology:

This thesis is divided into three chapters. First, we begin with some economic modelling. Chapter one is an assessment of the restrictions associated with Roman cost analysis and presents a realistic cost of living. This chapter draws heavily on the work of economic historians who focus on the buying power of Roman wages. An estimation of commodities required to live in an urban centre is outlined then an estimated cost of the commodities is determined. The purpose of this chapter is to introduce an economic model that makes the best use of our limited source material. This chapter is therefore highly economical with an emphasis on statistics and data. As such, it will have a different tone to the later chapters. Nevertheless, it provides a necessary basis for the societal analysis that follows.

Chapter two introduces an ordinary, male, skilled labourer in an Imperial Roman urban setting. This section will assess skilled craftsmen by presenting two case studies, one for a baker, and the other a builder. In both cases, we investigate their economic and social lives to establish daily realities. After the presentation of the case studies, the chapter will refocus on how craftsmen's daily reality affected their place in society and in turn, their financial position. We then turn to income projections for different types of crafts to consider how the income of a skilled labourer affected both their family income, and their ability to live comfortably and support their family.

The third and final chapter will look at other forms of income for a family unit. Focusing on women, we assess their 'silent' contribution to the household income.

The thesis will look at the different jobs performed by women, and how a woman's contribution to the income of her family changed throughout the different stages of her life. This exploration also allows us to assess the training of children, and how people moved into skilled labour. The lack of viable evidence means that income projections need to be based on comparative analysis and is thus much more theoretical. Through this analysis, we comment on gender bias, and what effect it had on the family income. A final analysis is made of the overall potential income of a Roman family through different 'life stages', enables a conclusion to be drawn on the economic and social wellbeing of a skilled family.

Chapter One: The Cost of Family Living in an Urban Setting

Determining the cost of living for a family in an Ancient Roman City is a multifaceted matter. First, there is limited source material. It is difficult to find any reliable data points, let alone from the same period. Cross century comparisons are necessary, but this introduces a range of variables, specifically inflation. Second, we must try to ascertain the requirements 'to live' or 'survive'—food, non-food necessities and shelter. Additionally, we can assume a little disposable income was desirable. Finally, we need to consider the urban setting, family size and living spaces. As much as it is possible, the social, cultural and physical environment needs to be included in any economic modelling. At each stage, some variables undermine specific analysis. However, it is possible to reconstruct probable scenarios that add to our understanding of how ordinary Romans lived and survived in the urban centres of the Roman World.

We begin with the numerous studies that attempt to show a full and accurate picture of the cost of living in Ancient Rome. These studies rely heavily on complex figures and data, extrapolated from the limited source material and often supplemented through the use of both comparative analysis and statistical techniques. While the resulting models are informative, we need to be conscious that the implied accuracy of precise figures is treated with care. All figures, including my own, provide indications, and no figures should be read as presenting definitive values.

It is generally accepted that the Roman Empire experienced stable prices for the first two centuries C.E., with inflation ranging between 0 to 1%.²⁴ Wassink put forward an inflation rate of 0.7% for the years between 27 B.C.E. and 249 C.E., based on military payments. This figure seems reasonable. It acts as a midpoint between estimates made by other historians, so will be used as a starting point for our

²⁴ Temin 2009, 4

analysis. This stable period of inflation did not continue through the third century C.E. Instead, inflation began to increase exponentially.²⁵ The likely reasons for this change are the subject of much conjecture, ranging from the over minting of coins to a lack of Imperial economic management.²⁶ Whatever the cause, prices increased significantly in this period. In the years from 293 to 301 C.E., the annual inflation rate is estimated to have been as high as 22.9%, a considerable increase from the 0.7% rate one hundred years earlier.²⁷ Rapidly increasing prices caused the Emperor at the end of the third century, Diocletian, to act; in 301 C.E., Diocletian introduced his “Edict of Maximum Prices”. This edict preserves a comprehensive list of wages and prices, something we do not have for the preceding two centuries. The edict has been used by many economic historians to calculate the cost of living in the Roman Empire.²⁸ We too are reliant on the edict, while recognising its limitations. This was an atypical time in the economic history of Rome to assess prices. Additionally, the edict was a price cap, not necessarily the actual cost of items at the time. Some price variations may have been allowed; we simply do not know. Nevertheless, this is the only period that presents consistent data and, therefore, is a valuable resource.

Using the edict to assess costs and income means we must make every effort to minimise uncertainty due to high inflation. This can be achieved by adjusting the prices in the edict for projected inflation which is then compared to a known price points in the first two centuries C.E. to gauge their accuracy. Using inflations estimates discussed above, we can compare prices in the edict to a known product price from a period with greater financial stability—the first two centuries C.E. Using a simple reverse inflation calculator, we can determine if prices match the inflated rate in Diocletian’s price edict. This process will either confirm or discredit the calculated inflation rates. Take, for example, the price of wheat in Diocletian’s edict

²⁵ Wassink 1991, 467

²⁶ See Temin 2009, 4-5, for more information

²⁷ Wassink 1991, 466

²⁸ See Allen 2009, for example.

of 100 *denarii* per *castrensis modius*. To gauge the accuracy of our inflation rates, we use reverse inflation calculations should give us a figure in the first century C.E. of between 5 to 6 *sesterces* per standard *modius*. To do this, we must first convert the Diocletian wheat measure, *castrensis modius*, to standard *modius*, as this was the typical measure in the first century C.E., this brings the price of wheat to 67 *denarii* per *modius*.²⁹ To order to account for inflation between the first century C.E. and the fourth century C.E., we need to perform three inflation calculations to capture the effect of three varying inflation rates; 0.7% for 27B.C.E. to 249C.E., 3.65% for 250C.E. to 291C.E., and 22.9% for 292C.E. to 301C.E.³⁰ For example, the equation to calculate the cost of wheat in 293 C.E., based on the known price of wheat in 301 C.E. is:

$$\frac{P}{(1 + \frac{IR}{100})^y} = \frac{67}{(1 + 0.229)^8}$$

Where 'P' is the cost of wheat, 'IR' is the inflation rate and 'y' is the number of years that this inflation rate occurred. This equation can be applied to our different inflation periods. Wassink outlines three different inflation rates for three separate time periods, meaning that we cannot calculate the estimated price simply using one rate.³¹ Thus we must use the above formula to calculate the cost of grain at the beginning of each new inflation period and continue that until we reach our desired date. In our case, we have recorded grain prices in 100C.E. and 64C.E. meaning that we need to perform three calculations to account for the three different inflation rates observed between our new dates, and 301C.E.³² Using the reverse inflation formula given above, we can expect the cost of grain in 100C.E. to be 1 *denarii*, or 4 *sesterces* per *modius*, and 0.78 *denarii*, or a little over three *sesterces* per *modius* in

²⁹ See appendix one for conversion figures.

³⁰ Wassink 1991, 465

³¹ That is, 0.7% for 27B.C.E. to 250C.E.; 3.65% for 250C.E. to 293C.E.; 22.9% for 293C.E. to 301C.E.

³² Ibid

64C.E.³³ These calculations match the records for these years with CIL 11.6117 recording of grain price at 1 *denarii* in 100C.E., and Tacitus' recording the price of grain at 3 *sesterces* in 64C.E. This exercise, though tedious, shows that Wassink's inflation figures which were estimated using military wages can also be used on commodities. This enables us to use prices from different times more freely, as we can estimate the inflated, or deflated, cost of the item for the time that we are discussing, allowing us to make comparisons of wages and prices across different points in history.

Another variable to be considered when estimating the cost of living is the proximity to Rome or other urban areas. This is necessary to our study due to the apparent reduction of living costs in areas away from Rome. Take, for example, Temin and Kessler's 2008 survey on prices in the Roman Empire.³⁴ In this study, they used prices of wheat from similar dates, but different locations, so-called 'price pairs', and discussed the price variations. They calculated the price differential between the two prices by subtracting the Roman cost from the 'distant' cost and examined the trend in relation to the distance from Rome. That is to say, Temin and Kessler theorised that the discrepancies in wheat prices were due to transportation costs from the 'distant' location, to Rome.³⁵ They then plotted a graph with these points in relation to the distance from Rome and due to the minimal number of data points, examined their relationship using T-statistics.³⁶ It was shown that the probability of the points being random was unlikely, only a one in twenty chance. The correlation

³³ 100 C.E. grain calculation:

$$301\text{C.E.}-293\text{C.E. } \frac{67}{(1+0.229)^8} = 12.808, 292\text{C.E.}-250\text{C.E. } \frac{12.808}{(1+0.0365)^{42}} = 2.84, 249\text{C.E.}-100\text{C.E.} \\ \frac{2.84}{(1+0.007)^{149}} = 1.00 \text{ denarii}$$

64C.E. grain calculation:

$$301\text{C.E.}-293\text{C.E. } \frac{67}{(1+0.229)^8} = 12.808, 292\text{C.E.}-250\text{C.E. } \frac{12.808}{(1+0.0365)^{42}} = 2.84, 249\text{C.E.}-100\text{C.E.} \\ \frac{2.84}{(1+0.007)^{185}} = 0.78 \text{ denarii}$$

³⁴ Kessler & Temin 2008

³⁵ This was done using straight line distances on a map. Although not a realistic representation of the distance travelled, it does serve as a rough indicator.

³⁶ Kessler & Temin 2008, 147-149

of these prices shows us that the Roman Empire had a unified market economy. Furthermore, it suggests that Diocletian's price freeze would only be useful for the costs of goods in Rome, but not other urban centres around the Mediterranean, and thus, evidence coming from outside of Rome will have to be adjusted accordingly. This, again, gives us more flexibility in using data from different sources around the empire. Like the inflation calculations, we now have a workable model if we wish to use figures from different points around the empire. Although the variation of price points throughout Italy are relatively steady, the prices points from places such as Britain, would not fit into our price models. Thus regions that were far from Rome should either be disregarded or treated with caution with an understanding that the price difference can be roughly estimated using Kessler and Temin's model.

Cost of food:

Now that we have addressed the most significant problems with our evidence, we can begin to look into prices and the cost of living, starting with food. Food is clearly a vital part of survival, and for many families in the Roman Empire, it would have been hard to come by. Our interest, however, is with the ordinary workers and the skilled craftsmen of the Empire, for whom extreme poverty was unlikely.

The first step to calculating the cost of food is to establish how much food was needed to live comfortably or just survive in the Roman Empire. Fortunately, Robert Allen put together different 'baskets' of products that provide us with this information.³⁷ In his 'subsistence basket', Allen compiles a list of necessary food to

³⁷ Allen 2009, table 16.2

Allen also compiles a basket for Northern Europe; Allen 2009, table 16.1

meet both the nutritional and the calorific needs of an adult.³⁸ Prices derived from Diocletian's price edict can be applied to the quantity of food listed, which can be found in appendix two. The resulting cost of food is 194 grams of silver per year for one person or 3675 *denarii* per person per year for food alone.³⁹ Allen undertakes the calculations but reaches different results.⁴⁰ Details on Allen's calculations and corrections made are found in appendix two, where it appears that Allen has made some mathematical errors, including using two different silver measures within the same table. For example, Allen uses a silver conversion rate of 0.053grams of silver per *denarii* while converting the cost of items in his 'basket',⁴¹ but uses 0.032grams of silver per *denarii* when converting the cost of fuel from Roman pounds of wood to M BTU.⁴² The result of Allen's miscalculations is an under-representation of the actual costs of living in Rome, the true cost of the basket is significantly higher, life might have been more difficult than previously thought.

Without a doubt, 3675 *denarii* per person per year for food was beyond the means of many ordinary Romans.⁴³ To allow for those who could not afford subsistence, Allen suggests a "bare bones subsistence"⁴⁴ which removes food either processed by an animal, or humans—meat, bread, wine and dairy. The resulting food basket is significantly more affordable, 1715 *denarii* per person per year for food, and

³⁸ Allen outlines that the required calorie intake for one man per day is 1940. Allen does not state how he reaches this number, however, it does line up with my own calorie intake calculations so I will not alter this number, see appendix 4 for more on calorie intake.

³⁹ See appendix one for a list of conversion rates used.

⁴⁰ Note that we cannot compare our figures to Allen's for food alone, as his calculations do not equate, thus we cannot add up parts of his basket.

⁴¹ Allen uses this conversion rate, despite stating on page 331 that he will use 0.032grams of silver for his *denarii* conversions. According to Diocletian's price edict, there was 323 grams of silver in 6000 *denarii*. Therefore, 0.053grams of silver per *denarii* is the most accurate conversion rate. Regardless, conversions based on uncertain values are not reliable. For Allen's purpose, converting currencies to grams of silver was necessary, but for the study of Roman costs alone, it is best to stick with Roman currencies.

⁴² See Appendix two for full discussion

⁴³ This assertion will become clear when we analyse income, see page 56-58 and appendix four

⁴⁴ Allen 2009, table 16.3

increases the reliance on grain to the extent that up to 82% of calorie intake came from unprocessed grains, likely in the form of boiled grain.⁴⁵

Boiling grain was cheaper than purchasing bread, but with it came a more significant threat of malnutrition. When processed correctly, the nutritional value of wheat is good. The grinding and fermentation process of wheat is essential to ensure that the human body absorbs all of the potential nutrition.⁴⁶ A diet high in unleavened bread and boiled grain leads to nutritional deficiencies.⁴⁷ The effect of relying on unprocessed grain was observed in Iranian villages, where people had higher rates of iron deficiency and anaemia, a frequent contributor to many conditions in the Roman Empire.⁴⁸

Malnutrition caused by an imbalanced diet would have been common during periods of financial insecurity. The act of boiling grain gave temporary relief to those struggling periodically, but those who were in a permanent state of economic hardship, they likely boiled all their grain. This would have made life more perilous, with higher rates of birth defects, and increased levels of fatigue, which could, in turn, lead to death and therefore the loss of income for the family. Malnourished workers, too, would be less likely to perform well, leading to difficulty finding work. The effect of poor nutrition on workers has been studied in a modern context, where we see specific links between iron deficiencies and lower productivity.⁴⁹ A study showed that adults working in heavy labour who were iron deficient had a decrease in

⁴⁵ Galen *De Alimentorum Facultatibus* 1.7: discusses this preparation technique amongst poor Romans.

⁴⁶ The act of grinding and sieving the wheat reduces the amount of phytate in the flour, as the phytate is present in the bran and germ part of the grain. Phytate acid occurs most readily in unleavened bread, and combines with calcium, iron and zinc to form compounds that cannot be absorbed by the body, causing deficiencies. See Garnsey 1998 235ff.

⁴⁷ Garnsey 1998, 235

⁴⁸ An illness that has been identified through the process of bioarchaeology is a bone condition called osteopenia, the precursor to osteoporosis. Data collected in Rome suggests that this condition was most common in young women and is partially caused by a diet rich in phytates. See Garnsey 1998, table 14.5 for more on nutrition and illnesses.

⁴⁹ Horton 2017

productivity by 17%.⁵⁰ This decrease in productivity led to a drop in GDP, that is to say, people with deficiencies made comparatively less money. This demonstrates how labourers working in ancient Rome could become trapped in poverty if they were unable to afford a nutritionally balanced diet. Put simply, the inability to purchase, or make leavened bread permeated through the whole economic position of the entire family, demonstrating the importance of diet for working Romans.

Another way that food costs could be lowered was with the aid of the grain dole. During the Republic, Gaius Gracchus introduced the *lex frumentaria*, a law that regulated the price of grain, setting it initially, at 1 ½ *sesterces* per *modius*. Eligibility for the fixed price grain distribution was men who were citizens and physical attendance at the distribution itself.⁵¹ In 58 B.C.E. the grain began to be distributed for free, and the number of people granted grain distribution was set at 320,000 under Pompey.⁵² The number of people who received the grain fluctuated as power in Rome changed, but by the time of Augustus, between 150,000 to 200,000 were reportedly receiving free grain from the state.⁵³ The amount of grain given to each recipient each month was 5 *modii*. This was enough to maintain three people on a 'bare bones subsistence' diet,⁵⁴ assuming that 75% of their calorie intake came from grain.

The selection process to receive the grain in Rome is unknown. Suetonius tells us that every year, new names were drawn to replace deceased recipients of the grain.⁵⁵ Records from Egypt suggest there was a selection process overseen by the

⁵⁰ Horton 2017, table 2.2

⁵¹ Rickman 1980, 159. We even hear of a story of a rather wealthy consular of Rome receiving the grain, when he was questioned on it, he stated that he was; "against your distributing my goods to every man as you thought proper; but, as you do so, I claim my share." Cicero *tusc. Disp.* 3.20.28, Trans. By Yonge

⁵² Rickman 1980, 176

⁵³ Erdkamp 2005, 241; Suetonius *Caesar*, 41.3: puts the number at 150,000; *Res Gest.* 15: puts the number at just under 200,000

⁵⁴ See Appendix two

⁵⁵ Suetonius *Caesar*, 41.3

secretary of the corn dole (γραμματεὺς σιτηρεσίου).⁵⁶ We learn, for example, that a local Aurilius, requested to be admitted to the distribution after hearing that a local recipient had died.⁵⁷ Whether registration was by lot or application, it appears that need was not the overriding criteria. Aurilius, for example, was in a position where he could afford to pay a scribe to write on his behalf.⁵⁸ This, along with demonstrations of food riots prominent in the late Republic and Empire suggest that the dole did not go to those who needed it most. To receive the dole, the recipient had to prove both citizenship and residence in the city. The requirement of residence rules out anyone who did not have a steady income to pay for lodgings. This rules out the likes of beggars and the homeless, but the majority of skilled craftsmen would meet all the criteria. However, the application letter above shows that not all who were eligible for the dole received it. Due to the enforcement of a *numerous clausus*, the *plebs frumentaria* must be seen as a privileged group within the *plebs urbana*. As a result, we will not assume that the average skilled labourer in the Roman Empire had access to this scheme.

Necessities:

The next cost to consider are necessities, a collection of products that include: soap, fuel, candles, and linen, but exclude food. Once again, amounts used per person per year for each of these items can be found in appendix two as part of Allen's "basket".⁵⁹ The necessities listed in our basket are essential and can be considered as important as food. Soap, for example, was crucial for the health of

⁵⁶ P.Oxy 2892-2922. The equivalent of this position in Rome was the *Praefactus*, who was in charge of distribution. This position was established as a permanent position under Augustus. Previously, the job was performed by an *aedile*.

⁵⁷ P.Oxy 9892

⁵⁸ See Garnsey 1998, 239; Erdkamp 2005, 243, for more on the dole as a political tool, rather than as welfare for the truly poor.

⁵⁹ With these items, we faced the same issues with miscalculations, specifically calculations regarding linen and fuel. For a full discussion, see appendix two

Roman's living in the city. Rome was not a clean city.⁶⁰ Without access to hygiene products, the risk of disease increased. Roman's also needed fuel and candles. Fuel was essential for all but vital to young Roman families. Keeping a family home well heated would have been crucial to the survival of young children in the winter months in Rome. Without adequate fuel, illnesses would take hold spreading in the crowded living environments of the urban centres. Candles were also essential if the family wished to perform activities at night-time, which no doubt would be necessary for domestic tasks. Linen too is considered a necessity; it was essential to make and mend clothing.

The cost of these items would vary greatly depending on the quality of goods purchased. Take, for example, linen. According to Diocletian's price edict, there are various prices for linen dependant on the quality and type of fabric. For the purposes of the basket, the linen used was a sixteen by sixteen Roman foot piece of cloth, enough for clothing or it could also be used as a tent. A low-quality piece of linen this size cost 2500 *denarii*.⁶¹ Top quality cloth, by comparison, could cost up to 5000 *denarii* for the same sized piece. Of course, the prices listed in the subsistence basket are based on the cheapest option.

The combined cost of all the necessities needed for one person per year adds up to approximately 500 to 600 *denarii* per year.⁶² Naturally, this is an area that could be cut down to save money. Allen halves many of these necessities to compile his 'bare bones' basket. At best this would have made living less comfortable, with items such as clothing being mended more. At worst, cost savings would have allowed disease to take hold and spread, potentially causing death or incapacitating household wage earners.

⁶⁰ See Scobie 1986, for the lack of hygiene in ancient Rome.

⁶¹ The size of the cloth is a standard measure, not the amount used by one person for a year.

⁶² See Appendix two for discussion on price calculations.

Before moving on to discuss other living costs, we should pause to calculate the cost of living for one adult thus far. The basket that we have put together so far is only a part of the full cost of living. However, because the evidence for expenses such as housing is virtually non-existent, we must look at this as a percentage of overall spending, rather than an exact figure. To calculate house costs, we must, therefore, calculate the cost of a 'basket' first. With that in mind, the cost of the basket thus comes to between 4000 to 4500 *denarii* per year to support one adult on subsistence, and between 2000 to 2500 *denarii* on 'bare bones'.⁶³

Housing Costs:

Where a Roman, or a Roman family, lived was mostly dependent on wealth and income. Individuals or families with more expendable income would have had the option of owning their own property. The wealthiest would have lived in expansive villas, the poorest on the streets with many in between living in over-crowded *insulae*. For many, the cost of owning a home in urban areas was suggested to be near impossible. Trimalcio describes the likelihood of homeownership this way:

"Sed hic qui in pergula natus est, aedes non somniatur."

"But anyone here who is born on a balcony, cannot be dreamed of in a temple."⁶⁴

Trimalcio's point is clear and undoubtedly the reality for many, the costs associated with living in a private residence would be too high for a poor Roman family to achieve within one generation. Nevertheless, property ownership was not solely the

⁶³ For the exact figures calculated, see appendix two. For the purposes of the discussion I will approximate numbers to account for uncertainty.

⁶⁴ Petronius *Satyricon*, 74.14

preserve of the wealthy; some ordinary Romans would have the luxury of home ownership. A will for a humble Egyptian flautist demonstrates this very point. The flautist was Orsues, and his will stated that his son must pay (among other things) the taxes that are due annually on his property. The reality is that most of this property holding would be intergenerational, passed on to a favoured son or daughter, just as Orsues did.

For the majority of ordinary Roman families, the most viable and commonly attested option was to rent. Leases could be long term, up to five years in length for those with more expendable income. Most though would have been faced with far shorter terms, many families could only afford nightly rentals, as they lived day by day.⁶⁵ The lack of housing security would have added to the stress and difficult reality of living in ancient Rome.

Rental properties were commonly owned by one person, rented by a few, and subleased to many.⁶⁶ Evidence for Rome's rental market is thin. However, a similar rental system can be assessed through Ostia, Rome's port town. It is generally accepted that Ostia had an extremely high proportion of rental properties, with over 90% of available housing identified as rentals.⁶⁷ One such example of a housing unit in Ostia, the *Casa del Soffitto Diponto*,⁶⁸ is described by Meiggs as follows:

"The rooms are served by a corridor which runs along the front of the building. The main room lies at the north end of the corridor and occupies the whole depth of the apartment: it is lighted from the street by three large windows. The second room in size and emphasis is at the south end of the corridor; it too is lighted direct from the street, but by only a single window. The three remaining rooms are smaller and open

⁶⁵ Frier 1977, 27

⁶⁶ See Frier 1977, 27-30 for more on this system.

⁶⁷ Mayer 2012, 29

⁶⁸ 2.6.6

off the west side corridor. Their lighting is indirect, through the corridor, and their wall decoration is less elaborate; these are rooms of secondary importance, probably bedrooms. The corridor, liberally lighted from the street, is much wider than a corridor need be: it is both hall and corridor, as if it were the vestigial remnant of the atrium.”⁶⁹

This description demonstrates how apartments could be split up and subleased.⁷⁰ The most obvious way to divide this apartment would be to sublease the three smaller rooms off the west side of the corridor, while the original tenant lived in the more luxurious rooms in the north and south ends of the corridor. Legal sources support this hypothetical scenario. When an apartment was subleased to different tenants, there were legal issues that came with it. The law stated that the tenant of an apartment was liable for any objects thrown from rooms within the apartment that they rented.⁷¹ This was a problem for tenants that were subleasing individual rooms to other groups. Therefore, the *Digest* suggests that if only one person had access to the room in question, then they alone should be held responsible if the primary tenant of the *cenaculum* only lived in a small section of it himself.⁷²

Subletting *cenaculum* was common. However, the majority of Romans could not afford such nice, albeit, small quarters. To provide a rough indication of costs, consider that the lowest attested price for a *cenaculum* is 2000 *sesterces* per year.⁷³ Split amongst three to four tenants; the cost is still 500 to 650 *sesterces* per year.⁷⁴ Therefore, the reality for most was small cramped rooms, higher levels of *insulae*, or on mezzanines. The mezzanine floors were typically part of *tabernae*, one to two

⁶⁹ Meiggs 1960, 247

⁷⁰ Although, according to Packer 1971, 69-70, the majority of these apartments in Ostia were occupied by only one family. Despite the situation in Ostia, we can apply the layout to other areas in Italy, specifically Rome, where archaeological evidence for apartments is lacking.

⁷¹ Frier 1977, 28

⁷² Dig. 9.3.5.1-2; Frier 1977, 28

⁷³ Plutarch *Sulla* 1.6; Frier 1977, 34; first century B.C.E. Rome.

⁷⁴ Again, this is for the first century C.E., and equates to between 80416 to 2613 *denarii* per annum

roomed commercial spaces, and were thus most likely rented by shopkeepers. In *insulae*, the cheapest rooms were on the tops floors, perhaps even in the leaky roof spaces. *Insulae* were often overcrowded and dangerous. Regardless, these were the most common housing choices for working Romans. The same principle for *cenaculum* applies to the subleasing practices of *insulae*, but unfortunately, it is difficult to say how much an upper floor room would have cost, as the majority of 'tenancy agreements' would have been done verbally on day by day. In fact, the only price data available is derived from Petronius' *Satyricon*, where Ascyltos pays one *as* for a small dingy room, hardly an indicative guide, but utilised by historians as a base rate for cheap housing.⁷⁵

In an attempt to provide more detail we are required to look at comparative models to assess housing costs in terms of a percentage of annual spending. In order to make use of our figure from the *Satyricon*, we need to compare the cost of living as a percentage of yearly spending to that in other time periods. To do this, we first have to estimate the cost of living when the *Satyricon* was written, approximately 70 C.E. Using the cost of living calculated thus far in 301C.E.(4,000 to 4,500 *denarii* for subsistence and 2,000 to 2,500 *denarii* for bare bones), along with reverse inflation calculations, the cost of living in 70C.E., excluding rent, was approximately 212 *denarii* for one adult.⁷⁶ Assuming accommodation was one *as* per night per room or 22 *denarii* per annum which equates to around 10% of annual spending. This would bring our annual total to 234 *denarii* per year.⁷⁷ Although only an approximation, we must use what is available. We can assess the reliability of this percentage by comparing it to accommodation spending in early modern Europe. Consider, for example, the price of housing in 1790's London. The annual rent for a

⁷⁵ Petronius *Satyricon*, 1.8.

⁷⁶ See page 11 for detail on reverse inflation calculations.

⁷⁷ This is slightly lower than Knapp's (2011) estimate of 300 *denarii* to support a family in a small centre, although his calculation methods are not listed so cannot be assessed.

labourer's house, two miles from the centre of London, was £5.⁷⁸ Moreover, Horrell shows that the average percentage of spending on housing in 18th Century England was between 4% and 8%.⁷⁹

Allen also uses comparative data to calculate the rental cost for his 'respectability basket'. He suggests that the average percentage of living cost spent on rent across European history was 5% of spending. Thus he multiplies the living costs for a family by 1.05 to find the overall outgoing costs including rent. Although our figure of 10% is a little higher than our comparative models, we can see that anywhere between 5 and 10% would fit into historical trends. It is, however, reasonable to assume that for families who shared space, total rental costs as a percentage of household expenditure would be less than for an individual. This suggests that Allen's figure of 5% is a fairer representation—at least when considering families. Applying these estimates to the prices from 301C.E., we can average the cost of rent to be approximately 233 *denarii* per person per year or around 2 *sesterces* per night per person.⁸⁰

Family Expenses:

In summary, the total costs for a single adult living as part of a family in 301C.E. is estimated to be between 4300 to 4400 *denarii* per year.⁸¹ This value can then be multiplied to account for a family of four. However, simply multiplying this number by four would be too simplistic. Instead, we must account for the different calorie

⁷⁸ Young 1770, 424-27, 435-38 (check if possible, accessed from Allen 1991) Young 1794 also stated that the cost to rent in a poor French town was 2.5x more than rent on the French country side.

⁷⁹ Horrell 1996, 568

⁸⁰ This is an average cost based on a family sharing a room, therefore, it should not be applied to an individual renting a room alone

⁸¹ For exact figures, see appendix two

needs for each individual in the family. Calorie requirements can be established using skeletal evidence from sites such as Pompeii and Herculaneum, alongside modern intake charts to align height with weight and calories. Average heights of both men and women have been ascertained through extensive archaeological digs. According to Kron, the average height of a Roman was 168cm.⁸² Laurence further backs this up stating that the average height of men in Pompeii was 166cm and 169cm in Herculaneum.⁸³ Using the lower end of the scale in modern height to weight ratios (BMI charts), this would put a healthy man at between 50 to 55 kilograms.⁸⁴ In order to maintain a healthy weight, an active male would need to consume between 2187 and 2313 calories per day. For women, the average recorded height is 155cm with a weight of around 45kg which would require an estimated 1756 calories. This means that for adults, we can use an average calorie requirement of 1971 calories to sustain their weight.⁸⁵ Children are far more difficult to calculate as their needs change every few years. According to modern medical research, we can estimate that the average calorie requirement for four to six-year-olds was 1500 calories, and the average intake requirement for nine to thirteen-year-olds to be 1700. Elderly dependants' calorie requirements would be lower than adults—they require 1800 calories each. These intake requirements can be used to give us an estimation of how much money was needed to sustain a family with two adults and two dependants. The total is between 8716 and 17000 *denarii* per year for food and necessities on subsistence, for between 4114 and 8023 *denarii* on 'bare bones' subsistence.⁸⁶ To account for rent, we need to multiply the family spending by 5%, which brings our totals to 9152 to 17846 for subsistence, and 4320 to 8424 *denarii* for 'bare bones'. The cost of these items is much higher than estimates made

⁸² Kron 2005, 72

⁸³ Laurence 2005, 85

⁸⁴ The calorie requirements used in this study come from the Institute of Medicine: https://www.cnpp.usda.gov/sites/default/files/myplate_miplato/table2.pdf

⁸⁵ As put forward by Allen 2009

⁸⁶ The variations of living costs are based on life stage of the family. See appendix four for calculations on this matter, and page 84ff. for more.

by other historians; however, by reworking the technique of Allen, this estimate aims to eliminate any miscalculations that can occur with such a comprehensive study.

Regardless of my attempt to minimise error, these costs are just estimates.

Considering the prices are based on an economically unstable climate, they must be taken as a rough approximation. However, even as estimates, the costs give us an 'outgoing' figure which can and will, be referenced through the rest of this paper as we investigate how a typical urban family purchased their 'basket'.

Chapter Two: Urban Craftsmen

Having outlined an estimated living cost for an ordinary family, we now move on to discuss family income. We begin by focusing on the daily life and contribution of men—specifically skilled men—to the family income. In a traditional view of a family, the father was the primary income earner, was this a realistic ideal for ordinary Romans? To answer this question, we should divide our discussion of men into five sections. First, what are the limitations we face when studying craftsmen? Second, who were the craftsmen? What social class did our ordinary Romans come from, and what impacted their ability to earn money? Third, what was life like for craftsmen—how did ordinary men train, and once trained, what was their daily reality? This subsection is presented through two case studies, bakers and builders, as they encompass elements present in various crafts. Fourth, what were the social implications of daily realities? Through these social implications, we can assess aspects that affected an ordinary Roman's ability to better their family both socially and financially. And finally, how much money was earned by an ordinary skilled labourer—through this, we can determine if a single skilled income enough to support an ordinary Roman family?

Craftsmen: No Better than Slaves?

Craftsmen, although relatively silent in ancient Roman sources, were a ubiquitous group in urban society. One would have difficulty if they wished to avoid them, no matter where in the empire they lived.⁸⁷ Crafts can be divided into two categories, the crafts that facilitate 'luxury' and those of 'survival'. The focus of this discussion is craftsmen that were needed for survival and to meet basic living standards, that is to say, crafts of necessity. This excludes the likes of sculptors, painters, beauticians and

⁸⁷ This is demonstrated with complaints from the elite regarding craftsmen: See Juvenal *Satires*, 3.232-238 for example.

other skilled labourers that served the upper echelons of society, and leaves us with bakers, fullers, smiths and construction labourers, to name a few.

Despite the number of craftsmen in the empire, elite writers were extremely biased against craftsmen and viewed them as little better than slaves —men who sold their manual labour rather than an artistic skill. The often quoted passage from Cicero shows this opinion:

“Iam de artificiis et quaestibus, qui liberales habendi, qui sordidi sint, haec fere accepimus. Primum improbantur ii quaestus, qui in odia hominum incurrunt, ut portitorum, ut faeneratorum. Illiberales autem et sordidi quaestus mercennariorum omnium, quorum operae non quorum artes emuntur; est enim in illis ipsa merces auctoramentum servitutis.”

“Now in regards to trades and profits, those which should be had by free men, and those which are foul, here we are taught as follows. First, jobs are rejected which incur peoples ill-will, such as toll collectors and investors. But disobliging and sordid are the jobs of hired labourers, when we purchase labour, not artistic skill; in fact, it is in that wage that they are bound to slavery”⁸⁸

This passage from Cicero and other corresponding elite views were used to set the tone for much of the scholarship from the twentieth century.⁸⁹ Prominent classicists such as Finley theorised that Cicero and his contemporaries were not displaying elitist opinions of people below them in social standing.⁹⁰ Their disdain was seen as proof that free-born citizens of Rome would not work in these areas—only slaves

⁸⁸ Cicero *De off.* 1.150. Cf. Tacitus *Ann.* 4.13.2: “He supported himself by petty trading between Africa and Sicily”; trading was only seen as unworthy if it was small scale, the term *sordid merces* is a recurring term for small scale trade, see Cic. *De off.* 1.151; Tac. *Ann.* 4.13.2; Quint. *Inst.* 1.12.17; Sidonius Apollinaris *Ep.* 6.8.1

⁸⁹ Flohr & Wilson 2016, 2

⁹⁰ Finley 1973, 57

would. Consequently, the elite opinions of craftsmen were seen as a reflection of society as a whole, rather than the small group that it came from.⁹¹ However, elite views only tell us one thing—their opinion. To accurately assess views on craftsmen, we must consider social context; best done through studying epitaphs:

“C. Atilius C. f. Iustus sutor caligarius sibi et corneliae exorat uxori t. p. i.”

“Gaius Atilius Iustus, son of Gaius, cobbler of footwear, ordered this to be built for himself and Cornelia Exorata, his wife.”⁹²

Epitaphs, such as this one, demonstrate a different narrative than the one written by the elites. It is clear that the craftsmen themselves were not ashamed of their occupation. Otherwise, they would not pursue the costly endeavour of including it on their commemoration. In reality, people took pride in their work and wanted to be remembered for their position in the community around them.

Who were Craftsmen?

At the beginning of the Principate, the population of Rome is estimated to have been close to one million.⁹³ Of these one million people, the majority were poor.⁹⁴ Due to the seasonal labour that was often acquired in Rome and the surrounding areas, some people fluctuated between ‘ordinary poor’, and ‘very poor’. The permanently ‘very poor’ were destitute and spent most of their life in search of food and shelter.⁹⁵ Knapp describes them as those who lived ‘hand to mouth’ and did not have enough money to change their position.⁹⁶ These people were the unskilled

⁹¹ Flohr & Wilson 2016, 2

⁹² ILS 7545: This inscription also depicted cobbler’s tools, further exemplifying his pride.

⁹³ Parkin & Pomeroy 2007, 43; Boatwright et al. 2004, 380

⁹⁴ Garnsey 1998, 226

⁹⁵ Garnsey 1998, 227

⁹⁶ Knapp 2011, 97

labour force in the city. They made money working day to day providing manual labour in the likes of bakeries, on building sites, as porters and working on farms.⁹⁷ In the Roman social hierarchy, the group that was favoured above unskilled labourers consisted of craftsmen, specifically craftsmen who worked in fields that facilitated survival.⁹⁸ Compared to unskilled labourers, craftsmen had relatively good financial success. However, this does not mean that life was easy, at times, craftsmen struggled to find enough money to survive.⁹⁹

The primary reason why craftsmen faced temporary periods of poverty was, most likely, due to fluctuation demand as seasons changed. Consider, for example, how people might leave the city and return to their farms after working the summer season. Erdkamp theorises the likelihood of farmers, and their families, travelling into the city to work for a season and claims there was an excess of labour on an average farm, even in the peak of the harvest season.¹⁰⁰ Because of this surplus, men and older children left the farm work for the women, children and elderly.¹⁰¹ Although Erdkamp builds his study around comparative analysis, we can corroborate his theory further using the Italian farming calendar.¹⁰² An inscription from Italy demonstrates that the peak time for harvesting on a farm was June and July.¹⁰³ This was the same time of year as when the building industry ceased work due to the intense heat in Italy. Consequently, it is possible that farmers would go to the city to work in unskilled industries such as construction and portering in the spring and autumn, and return to the farm for the busier harvesting periods. A similar scenario can be applied to urban labourers. During the harvest season, it was possible for labourers that were connected to construction to go to the country and work as day labourers at a farm.

⁹⁷ Garnsey 1998, 227

⁹⁸ Examples include; fullers, bakers, builders, smiths, cobblers, to name but a few

⁹⁹ Garnsey 1998, 227

¹⁰⁰ Erdkamp 2016, 36

¹⁰¹ Ibid

¹⁰² CIL 6.2305=ILS 8745

¹⁰³ Specifically for the cereal harvest

The timeline for this scenario is plausible, but it is reliant on the ability to travel between urban centres and the countryside. Well-established road networks in the Roman Empire made it likely that poorer people without transportation could walk between the country and the city. This is demonstrated by a group of builders who were working for Cicero in Tusculum. In one of Cicero's letters to Atticus, he states:

"Ecce autem structores nostri ad frumentum profecti"

"Here are my builders who went to Rome to collect corn."¹⁰⁴

Because the builders were travelling to collect grain, they were likely urban dwellers who worked in the country on a short-term contract. The need to travel also suggests that they were part of the *plebs frumentaria* and that the economic benefit of collecting free grain made the time and effort spent travelling worthwhile. This indicates that they were from a lower socio-economic group. Poverty could compel people to travel. Migration patterns in India corroborate this theory. A study by Mosse states that poor families had to travel seasonally for work to pay off loans from financially unstable periods.¹⁰⁵ With this passage from Cicero, we see that travel could have been the reality for many workers in ancient Rome. Travel would be necessary during certain periods of the year in order to survive.

Migration of workers led to a fluctuating population in cities, which would, in turn, disadvantage businesses that relied on the 'working class'. Although we have seen that workers could easily move between the city and the countryside, it is unlikely that the commute was made daily—as demonstrated by the passage above, workers would have stayed in the country until their work was finished.¹⁰⁶ This would

¹⁰⁴ Cicero *Att*, 14.3: The builders were working on Cicero's villa in Tusculum, approximately 20km away from the centre of Rome.

¹⁰⁵ Mosse et al. 2002, 70

¹⁰⁶ It is likely that the workers were boarding in the countryside; otherwise they could retrieve their grain either before or after work. The fact that they made the trip during the working

have led to a significant population decrease in the city for up to two months at a time.¹⁰⁷ Although the builders still received their grain from Rome, other services were likely obtained in the country such as food processing.

Additionally, climatic variations had an impact on those who relied on trade for income. Take, for example, shipping patterns. Shipping was not unheard of during the winter months, but it was dangerous because shipwrecks were more likely than in the summer.¹⁰⁸ This affected many different occupations including merchants, sailors and more importantly for the urban population, portering. Port areas around the Empire would see a considerable decrease in employment, most noticeable in places like Ostia and Puteoli.¹⁰⁹ This reduction of incoming goods would also affect skilled craftsmen, especially, fullers.¹¹⁰ Evidence from Pompeii suggests that an industrial-sized *fullonicae* was used, in part, to wash imported garments that were sold in the local market.¹¹¹ Although it was possible for the business in this scenario to continue operation over the winter, there would be less work for the employees, and potentially no work for some of them. It would, therefore, be necessary for the craftsman to gain unskilled employment. This would prove difficult as many unskilled jobs relied on the shipping and construction industries, which were also affected by seasonal fluctuations. It may have been possible that craftsmen would be unemployed during the winter, making day to day living more difficult.

day (or when they could see Cicero and tell him) suggests that they were stationed in Tuscum for that period.

107 DeLaine 1997, 201 theorises that approximately 15-24% of the male population was involved in the construction industry. If the majority of these workers travelled for work, population decrease would be significant.

108 Hawkins 2016, 33-34: If traders did want to ship in the winter months, that is, between November and March, they were subject to higher interest rates on maritime loans. See Sirks 2002, 134 for more on seasons and interest rates.

¹⁰⁹ Hawkins 2016, 34

¹¹⁰ Hawkins 2016, 34

¹¹¹ Flohr 2013, 87-90, 93

Daily Reality: Apprenticeships

To become a craftsman, one first had to undertake training. While options undoubtedly varied between crafts, two probable methods were training within the household and apprenticeships. Although we cannot say much about training within the home, the apprenticeships are evidenced by surviving contracts. Roman Egypt provides several examples and gives us a good indication of how a Roman styled apprenticeship was undertaken.¹¹²

The apprenticeship contracts found in Egypt are for five different crafts and specify four distinct social groups training as apprentices: free boys, slave boys, free girls, and slave girls. These apprenticeships vary in length, with variations within each trade. Two of the contracts from Egypt are for building apprenticeships. One is for six years; the other is for three years.¹¹³ Let us begin with the six-year apprenticeship, the longest training period in the surviving contracts. There are a few explanations for this contracts longevity. It is possible, for instance, that six years reflects the level of skill required to be a Roman builder. Upon completion of an apprenticeship, the new builder would have to work on a construction site with no extra supervision. Builders were expected to be able to complete a range of different tasks, depending on the instruction of their senior on site. Most notably, builders had to construct various types of walls, arches and vaults competently.¹¹⁴ A mistake made by a

¹¹² See page 4-5 for the use of Roman Egyptian evidence.

¹¹³ P.Oxy 2875; P Mich 5.346b

¹¹⁴ Throughout the history of Roman building, the Romans changed their preferred method for building walls. During the majority of projects in the imperial period, the preferred method of wall construction was *opus testaceum*, a cement wall with regular brick facing. Despite its popularity, other techniques were used in different types of building. It would be expected that a builder could follow any instruction given to them in terms of technical building. Along with different techniques to build a wall, builders also had to construct frame work for vaults, arches and domes, a staple of Roman architecture. The construction of these structures was a very precise business. Builders had to be aware of the load that different types of wood could support, and also had to ensure that the structures were centred before the stone or cement was laid over the frames. For more on building techniques, see Taylor 2003

builder could result in multiple deaths and the destruction of many expensive materials. We could argue that builders needed more training relative to other trades, but then why is the other building contract only for three years? Perhaps one of the apprenticeships was more intensive than the other, or perhaps length was simply dependant on the age of apprentice at commencement.¹¹⁵

Another explanation for the longevity of the training is that the teacher wanted cheap labour, and so maintained an apprentice. We can see the potential for this in the training and payment of one of the weaving apprentices;

“καὶ τὰ μὲν πρῶτα ἔτη δύο καὶ μῆνας ἑπτὰ τοῦ τρίτου ἐνιαυτοῦ οὐδὲν δώσει ὑπὲρ μισθοῦ τοῦ παιδὸς ὁ Ἡρακλᾶς, τοῖς δὲ λοιποῖς μηνσὶ πέντε τοῦ αὐτοῦ τρίτου ἐνιαυτοῦ χορηγήσει ὁ Ἡρακλᾶς ὑπὲρ μισθῶν τοῦ αὐτοῦ μαθητοῦ κατὰ μῆνα δραχμὰς δεκαδύο καὶ τῷ τετάρτῳ ἐνιαυτῷ ὁμοίως κατὰ μῆνὺπὲρ μισθῶν δραχμὰς δεκαῆξ καὶ τῷ πέμπτῳ ἐνιαυτῷ ὁμοίως κατὰ μῆνα δραχμὰς εἴκοσι τέσσαρας, καὶ κατασκευάσει ὁ Ἡρακλᾶς τῷ αὐτῷ μαθητῇ τῷ μὲν ἐνεστῶτι τετάρτῳ καὶ εἰκοστῷ ἔτει χιτῶνα ἄξιον δραχμῶν δεκαῆξ, τῷ δὲ ἰσιόντι κε ἔτει ἕτερον χιτῶνα ἄξιον δραχμῶν εἴκοσι, καὶ τῷ κς ἔτει ὁμοίως ἄλλον χιτῶνα ἄξιον δραχμῶν εἴκοσι τεσσάρων, καὶ τῷ κζ ἔτει ἄλλον χιτῶνα ἄξιον δραχμῶνα εἴκοσι ὀκτώ, καὶ τῷ κη ἔτει ὁμοίως ἄλλον χιτῶνα ἄξιον δραχμῶν τριάκοντα δύο.”

“And for the first two years and for seven months of the third year

Heraklas shall pay no wages for the boy, but in the remaining five months

¹¹⁵ The apprenticeship that lasted for 3 years was for a boy, Aurelios Zoilos, who was about 14 years old. His age is not mentioned in the contract, but Bignall points out that local law states that a person cannot make a contract until he is 14 years old. However, he is probably not much older than 14 due to the section that included his mother's permission. It is also possible that the apprenticeship only lasted three years because of his age. If he was 14, then his apprenticeship would finish when he was around 17. This age is likely the age that the boy in the other contract would finish his apprenticeship.

of the third year said Heraklas shall pay as wages of the said apprentice 12 drachmas a month, and in the fourth year likewise for wages 16 drachmas a month, and in the fifth year likewise 24 drachmas a month; and Heraklas shall furnish to the said apprentice in the current twenty-fourth year a tunic worth 16 drachmas, and in the coming twenty-fifth year likewise another tunic worth 20 drachmas, and in the twenty-sixth year likewise another tunic worth 28 drachmas, and in the twenty-eighth year likewise another tunic worth 32 drachmas."¹¹⁶

This payment schedule suggests a couple of things for the apprenticeship. Firstly, the apprentice was not performing any unsupervised work for the first two years and seven months, hence why he was not paid. This aligns with other apprenticeships for weaving, where the training was for a much shorter period.¹¹⁷ Secondly, the apprentice system also benefited the teachers. Although initially a drain on resources, the low wage of an apprentice would have been an excellent way to reduce labour costs and recover some value from the burden of having a student. In the majority of the preserved contracts, a large proportion of the living costs for the children had to be paid by the parents. P. Oxy. 275 states that the boy's father will pay food and clothing costs throughout the year, additionally, his father must still pay the taxes on the boy. In return, the boy was trained, and he received a total of 5 *drachmae* per month and a bonus of 12 *drachmae* for clothes upon the completion of his training. This income, when compared to a fully trained weaver is approximately 40% less,¹¹⁸ meaning in addition to the enhancement of his social

¹¹⁶ P. Oxy 725. Translation accessed <http://www.attalus.org/docs/select1/p14.html> 1/08/17

¹¹⁷ P. Oxy 322: 2 years; P. Wisc. 4: 1 year; P. Oxy 275: 1 year; P. Oxy 2971: 2 years 6 months; P. Tebt. 442: 2-3 years; P. Tebt. 385: 2 years; P. Vars. SN7: 3 years. Some apprenticeships went for longer: P. Mich. 2.121 R.2.8: 5 years; P. Oxy 1647: 4 years. Cf. Bradley 1985, Table 1

¹¹⁸ 40% wage difference is based on income daily income wage in O.P. 737 of 3.5 *asses* per day. Over a year (250 days for average labourer) this comes to 875 *asses*. This figure adjusted for an inflation rate of 0.7% over 65 years comes to 1377 *asses*, or 84 *drachmae* (0.34 *drachmae* per day) for 250 days work. Compare this to the income of our apprentice, of 72 *drachmae* for 365 days work, or 0.2 *drachmae* per day. This is dependent on how many days

relationships, the teacher also received cheaper than market value labour. In the case of the builder's contract, this would ensure free labour for the first two years of his training, then below market value labour for the remainder of his contract. The length of the contracts, therefore, resulted from a combination of factors. The importance of each was a product of societal factors unique to the individuals involved and their circumstances.

Apprenticeships were not the only path to crafts, and in some cases, they were not appropriate. Some occupations were more likely to be undertaken as a family trade with training taking place within the family. Evidence from Pompeii,¹¹⁹ along with the daily realities¹²⁰ of baking suggests that bakers were trained within the family business. Training within the family was most likely done informally, and would leave no evidence.¹²¹

Craftsmen: The Baker

The daily activities of a baker can be analysed using the epitaph on the tomb of Eurysaces, the novel *Metamorphoses* by Apuleius along with archaeological evidence for the trade. These sources, however, come with their own set of issues and flaws. For one, the tomb of Eurysaces, a Roman baker from the first century B.C.E. depicts a hyper inflated version of reality, for but one baker. Eurysaces is not the best representation of a baker as he was clearly very financially successful. Based on his tomb and a lack of other elaborate tombs for bakers,¹²² Eurysaces saw his success as

apprentices' were expected to work. Records suggest it was every day, as any days spent ill or unproductive had to be repaid. See P.Oxy. 275 for example.

¹¹⁹ Bakery 1.12 in Pompeii is a business that appears to evolve through time and is theorised to be the work of many generations of one family. See Monteix 2016, 174-176 for the evolution of this bakery

¹²⁰ Most notably the start time for bakers.

¹²¹ See Page 72ff. for more on undocumented training methods.

¹²² Other tombs do exist depicting bakers, such as the imagery found in the catacombs of Saint Domitilla, but elaborate burials for bakers are not common.

something out of the ordinary, hence why he was keen to celebrate it. Additionally, the *Metamorphoses* by Apuleius, although enlightening, is a work of fiction. We must allow for a small amount of creative licence, generalisations, and hyperbole when discussing ordinary lives. Other sources, including archaeological evidence from Pompeii, must also be analysed critically as the evidence from Pompeii does not reflect a typical day, rather a city in crisis.

A baker, one can assume, began work in the early hours of the morning. While it is true that we have no account explicitly stating when a baker's workday started, literary sources do suggest that bakeries operated outside regular operating hours. Apuleius for example, depicts grain being ground all night.¹²³ This practice would enable the bakers to make more bread in the early morning before people began their days. This reference, however, only refers to the milling of grain, not the baking itself. If this was the case, then skilled labourers did not work all night, only slaves and animals did. Martial also complains about the noise that bakers made at night.¹²⁴ This presumably also refers to the milling, a sound that was detested by the ancients.¹²⁵ In another passage from Martial we have the suggestion that a baker started work before dawn;

"Surgite: iam vendit pueris ientacula pistor cristataeque sonant undique
lucis aves"

"Rise: already the baker is selling breakfast to the boys and the crested
birds sound from every side."¹²⁶

¹²³ Apuleius *Met.* 9.11: "Ibi complurium iumentorum multivii circuitus intorquebant molas ambae varia; nec die tantum, verum perpeti etiam nocte prorsus instabili machinarum vertigine lucubrant pervigilem farinam."

¹²⁴ Martial *Ep.* 12.57

¹²⁵ Aristotle, *problems*, 964b.38

¹²⁶ Martial *Ep.* 14.223

This passage has boys buying bread at dawn. Indeed there is the possibility that the bread was baked the day before, but it seems likely that skilled labour was used in the morning.¹²⁷

An early start would also enable bakers to earn extra income by charging people who wanted to bring their own premade loafs to be baked in the commercial oven.¹²⁸ This was an arrangement that would undoubtedly benefit the business financially as the oven temperature would only have to be maintained, rather than the costly exercise of heating it.¹²⁹ The practice of hiring oven space was common in medieval Europe and would have lowered the cost of buying bread for poorer people in the community.¹³⁰ In the case of Rome, it is possible that someone might have been on the grain dole, but did not have a way to produce bread entirely. Literary sources indicate the use of hand grinders, described as small and easy to use tools, which worked similar to a modern mortar and pestle and allowed the dough to be made within the household.¹³¹ Ovens in private residences, however, were very rare and reserved for the wealthiest in society.¹³² Even some who were able to work in politics could not afford such luxury. A story told by Suetonius describes a gluttonous magistrate who set up court next to a bakery so that, as the joke goes, he knew where his next meal was coming from.¹³³ This shows the considerable amount of money that would have been required to have a baker and oven in private housing and rules it out for urban craftsmen.

¹²⁷ Historical, and modern, trends of the baking profession back up an early start time for bakers. In modern society, many bakers begin work as early as 3.30am, See Forkish 2012, 113-115 for modern standards, and Davidson 2014, 100-103 for historical standards.

¹²⁸ Holleran 2012, 134

¹²⁹ The most fuel was used to heat an oven, maintaining heat costs a lot less

¹³⁰ Davidson 2014, 102

¹³¹ Virgil *Moretum*, 32-41

¹³² Even people rich enough to take public office have been documented as not having their own facilities for making bread, Cic. *Piso*. 67

¹³³ Baldwin 1983 n. 261

Further evidence suggesting oven space was hired out is the discovery of carbonised loaves of bread found in Pompeii and Herculaneum with names stamped on them.¹³⁴ The important aspect for our argument here is the names. This method suggests the baker did not want to get the bread mixed up. If these loaves of bread were simply pre-ordered, a simple system of tracking names would suffice, or perhaps a token could be collected. The most likely scenario is that all the loaves were unique, and thus made by different people. Therefore, oven space being hired out is the most likely answer. As we can see from this scenario, the early start time was crucial to ensuring the more profitable baking was completed before homemade loaves were bought into the bakery.

Eurysaces' tomb has a detailed frieze that depicts daily operational activities that occurred in a bakery:

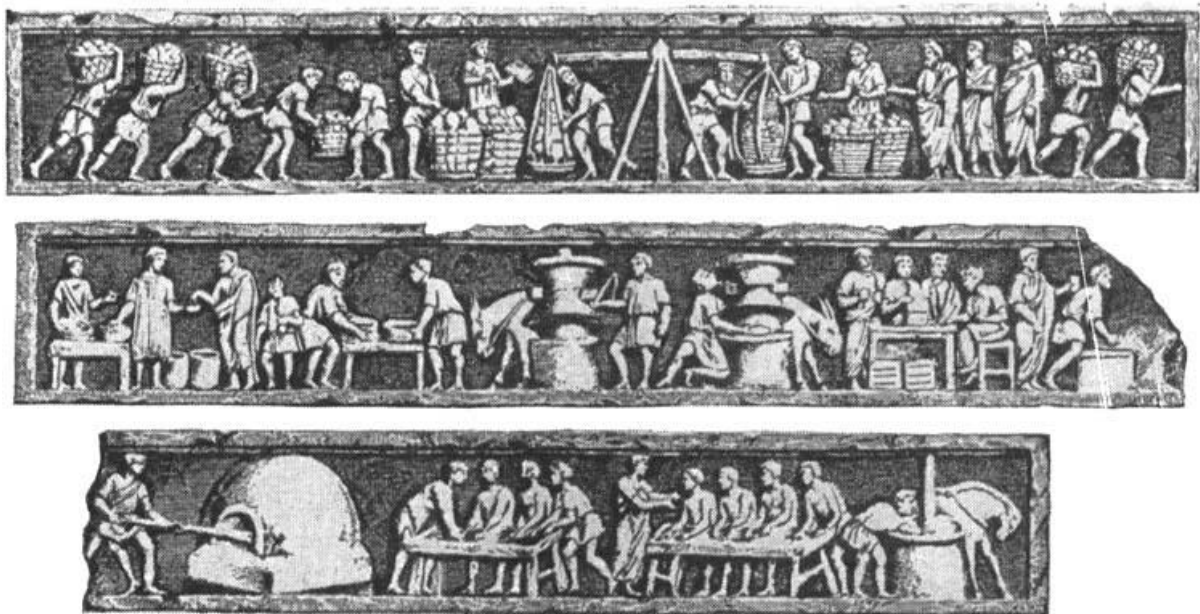


Figure 1: Frieze from the Tomb of Eurysaces¹³⁵

¹³⁴ CIL X 8058

¹³⁵ Accessed: <http://ancientrome.ru/art/artworken/img.htm?id=765>

From this frieze, we can assess the people involved in the business, and how that might contribute to the baker's financial and social position. In the frieze, we see public officials present at the delivery of the grain and the collection of the bread. This, coupled with Eurysaces' self-given title *pistor redemptor* (baker, contractor) lead to questions regarding state involvement in private business. Let us begin this line of questioning with the title, *pistor redemptor*. This title has sparked debate over the true meaning of his position. Claridge theorised that the title meant Eurysaces was a baker who was contracted by the state to make bread for the public ration.¹³⁶ Erdkamp also believed that Eurysaces was under contract from the state.¹³⁷ The involvement of state officials on the frieze does suggest that Eurysaces was, in fact, working with the state. However, this tomb has an approximate date of between 50 and 20BCE,¹³⁸ at this time, public ration was in the form of a monthly grain dole. It was not until much later, in the 270's C.E. that the ration was given in the form of bread. Therefore, Claridge's assertion does not fit within the historical context. A possible scenario of Eurysaces relationship with the state is through making bread for public festivals. The amount of bread needed would have been immense, enough to feed every Roman citizen. This, coupled with the inability to preserve the bread means the state likely contracted numerous bakeries.¹³⁹ Perhaps this is why we see state involvement in the frieze of Eurysaces tomb. The state likely provided the grain to be used for the feast, and the output of bread would have been measured to ensure no products were missing. This type of contract had the potential to be financially beneficial for bakers all over the city, and if this theory is correct, was likely the reason Eurysaces was able to fund such an elaborate tomb.

Alternatively, the state's involvement in the day to day operations of the bakery could have been standard practice in bakeries around the empire. The importance of

¹³⁶ Claridge 2010, 360

¹³⁷ Erdkamp 2005, 253: Erdkamp however, does not state in what capacity Eurysaces work for the state.

¹³⁸ Peterson 2003, 230

¹³⁹ In a similar manner to our clothing contracts, see page 65.

bread production may have enforced state participation in bakeries. Numerous stories show the intervention of the government in an attempt to regulate the cost of bread. State officials in Oxyrhynchus in 116 C.E. enforced standardised loaf weight. This enforcement was likely the result of small loaves of bread being sold for a regulated price so that the bakers would still see their usual profit.¹⁴⁰ The state's regulation would have made bread production less profitable during times of high grain prices. In an attempt to rectify the loss of profit that bakers saw, state-funded grain ensured that bakers were still able to survive financially during high grain prices, whilst still selling a reasonably priced product. State involvement in the bread trade is common throughout European history. In New Amsterdam in the seventeenth century, we see a very similar practice as in Oxyrhynchus in 116 C.E. The governor enforced specific grain types, bread weights, and price caps to the bread sold in the region.¹⁴¹ This control over the bakeries was likely for the same reasons, feeding the masses and preventing food revolts. This unusual relationship between the government and private business may have hindered profits at times, but it was beneficial overall as it kept profit steady. Rather than suffering from unforeseen climatic variations in profit, bakers could rely on a steady income. This was a rare attribute for a Roman labourer. Most professions were unpredictable, and could, at times, leave workers unemployed for extended periods. The state involvement demonstrated here gave bakers work security that is rarely seen in other professions in the Roman world.

Making flour was essential to the production of bread. Grain was ground with a mill, with the labour from either animals or slaves.¹⁴² Although this is a seemingly

¹⁴⁰ Petronius *Satyricon*, 44

¹⁴¹ Middleton 2006, 27: Many bakers were producing and selling white bread rather than rye, to increase their profit margin. This left many households going without bread altogether.

¹⁴² Other methods include water mills. However, there has been no discovery of water mills surrounding Pompeii. Two geared watermills have been found in N. Africa, one in Tunis, one in France near Arles. Dates for these mills are uncertain, but thoughts range from early 2nd to late 4th century C.E. (Bakker and Meijlink 1999, 9) First literary mention of water mills in Rome are from the 4th century C.E. The earliest dated material from a watermill in *Laniculum* is the

standard activity in a bakery, Pompeii provides evidence that not all bakers undertook this process. Instead, they would have purchased it. It, therefore, stands to reason that smaller bakeries purchased flour from larger bakeries with specialised equipment, like Eurysaces'. Bakery I12 in Pompeii provides evidence for a mill bakery who possibly sold excess flour. In the bakery, there are four mills, but only one oven.¹⁴³ Perhaps extra mills produced flour that was sold to smaller bakeries and the elite who had their own bakers and ovens. The cost of flour compared to grain made this a financially lucrative activity.¹⁴⁴ This approach to milling flour suggests a hierarchy of bakeries throughout the town and points to the patron-client relationship.

Start-up costs for bakeries were high; there was likely outside financial support to set up the business. This could have come in many different forms; inheritance, local government sponsorship or patrons.

Local government sponsorship for bakeries is evidenced by a decree discovered in Oxyrhynchus, Egypt. This document outlines conditions whereby six signatories, who were in charge of the food supply, agree to equip one bakery each, with the condition that the bakers each produce twenty *artabae* of flour every day.¹⁴⁵ This kind of sponsorship demonstrates both the political importance of bakeries in general, but also how bakers who could not afford to equip their own bakeries may have moved into the industry.

Elite patrons financing bakeries would be the most likely way that bakers came into possession of a bakery. It is possible that bakers would have 'managed' the

first half of the 3rd century C.E. and it has been suggested that the mills were built to coincide with the introduction of free bread to replace the grain dole. (Bakker and Meijlink 1999, 9)

¹⁴³ This is double the amount of mills the bakery originally had when it opened. See Monteix 2016, 174-176

¹⁴⁴ Pliny *HN*, 18.20.9: states that ordinary wheat flour was two times the price of unmilled grain.

¹⁴⁵ P.Oxy. VI. 908: "ἐργαστήριον τὰς ἴσας ἡμερησίως υἷ.....ἀρτάβας εἴκοσι, οὐκ ἐξόντος οὐδενὶ ἡμῶν παραβαίνειν τὰ προγεγραμμένα."

bakery for the wealthy owners, but would have received many advantages to running the business. Bakers could live in the establishment, and hire all of the equipment necessary for the business. A contract from 509 C.E. for the lease of a mill bakery shows how this process might have worked during the first two centuries C.E. In this contract, a group of bakers hired a bakery with three or four ovens,¹⁴⁶ two mills and other items needed in the bakery. The contract outlines different payment methods for each of the items in the bakery. For the ovens, the bakers had to pay one 'door keeper's loaf', the mills and mortar cost three *solidi* of gold, and for festivities, three chickens and thirty eggs. The contract also promises an advance to the bakers, of twelve *solidi*, a rather large sum of money, presumably for start-up costs, such as wheat, fuel and slaves.¹⁴⁷ This contract shows how a group of bakers could come to be in possession of a bakery. They did not have to pay any money up front, and even received an advance. This appears to be similar to the patron-client relationship in Rome, whereby a free person receives favours from the local elite in exchange for political support. Although this contract, in particular, does not show the local elite gifting a bakery to the craftsman, the cost of hiring the bakery is very low, especially taking into account the twelve *solidi* advance. Assessing these two pieces of evidence, we can see how bakers came into work. There would have been many bakers who were not so lucky as to receive patronage, but those who did were likely to secure the use of the bakery for many generations.

The most important part of owning a bakery was selling bread to earn a profit. Evidence from Pompeii suggests that bakeries had different methods of selling ranging from a shop front in the bakery, selling bread in the forum, to delivering bread to wealthier clientele. The bakeries identified in Pompeii that appear to have the facilities to sell from their shop were smaller bakeries without mills.¹⁴⁸ These

¹⁴⁶ The contract states that there are three ovens, but that payment will be made for four ovens. Most likely a mistake in the contract

¹⁴⁷ P.Oxy. 16.1890

¹⁴⁸ There were some mills bakeries that had shop fronts also, see Monteix 2016, fig. 71

bakeries likely did not sell in the forum or deliver bread around the city as they were unlikely to have the animals needed for transportation. Without millstones, there would be little incentive to invest in animals as their only function would be delivering. On the other hand, larger bakeries without shop fronts sold their bread in temporary stalls around the city.¹⁴⁹ This would be fiscally beneficial as these bakeries were often located further away from busy thoroughfares of Pompeii.¹⁵⁰ Selling bread in the forum ensured more profit by engaging with buyers when they were completing the rest of their shopping.¹⁵¹ Because these bakeries had the capabilities to transport bread and flour around the town, we can assume that they were also responsible for delivering bread and flour to the local elite.¹⁵² The extra services would have ensured more profit for the bakers. Although we do not know the cost of bread delivery, it was presumably more expensive. The addition of these services in a bakery suggests that there would be a higher demand for external, casual labour. Delivery would not need to take place in the early hours of the morning (in Pompeii), and it was therefore not a requirement that the workers lived in the household. This process would allow the skilled workers to work in the bakery itself for the remainder of the day, baking more loaves as needed, and preparing for the next morning's baking.

Craftsmen: The Builder

Our second case study of skilled workers is for builders and presents a different model to our discussion on bakers. With builders, we are looking at a seasonal model of employment. This type of employment encompasses many jobs in ancient Rome. Due to the fluctuation of labour requirements, and the reliance on ideal

¹⁴⁹ Laurence 2007, 71

¹⁵⁰ Poehler 2017, fig. 16.2

¹⁵¹ We can see this method of sales with modern supermarkets, who sell (often) lower quality bread than a bakery, but the convenience bolsters their sales.

¹⁵² For evidence of bread being delivered, see Dig. 14.3.5.9

weather, builders, had to go through the process of finding work more often, which lead to less financial security. However, the frequent nature of disasters in Ancient Rome¹⁵³ coupled with the rapid growth of the city meant that builders were in high demand.

Due to the hierarchical nature of construction sites, builders in Rome are easily viewed as two distinct groups, master builders and builders. Master builders were highly skilled and were the ones contracted to construct the building. They ran their own building 'firm'; most likely made up of ten builders.¹⁵⁴ Builders were skilled labourers who were in charge of physically building. They were instructed by the master builders but had the skill to build different structures without constant supervision. For this discussion, builders will be the focus, that is, the less wealthy of the two types of workers.

[Do the Risks Outweigh the Benefits: Health and Safety in the Building Industry.](#)

Construction works, by definition, are inherently dangerous due to the nature and mass of the materials used. Time pressure to build public projects meant workers would have been on site just after sunrise. Because the building season was predominantly in the summer months, the days were longer, meaning more hours for builders.¹⁵⁵ Conditions on a building site during the first few years of construction would have been gruelling. Before any roofs were erected, builders

¹⁵³ Strabo *Geography*, 5.3.7; "...τροφῇ τοῦτο δὲ ξύλοις καὶ λίθοις πρὸς τὰς οἰκοδομίας, ἃς ἀδιαλείπτους ποιοῦσιν αἱ συμπτώσεις καὶ ἐμπρήσεις καὶ μεταπράσεις, ἀδιάλειπτοι καὶ αὐταὶ οὖσαι: καὶ γὰρ αἱ μεταπράσεις ἐκούσιοί τινες συμπτώσεις εἰσὶ, καταβαλλόντων καὶ ἀνοικοδομούντων πρὸς τὰς ἐπιθυμίας ἕτερα ἐξ ἑτέρων."

¹⁵⁴ DeLaine 1997, 204

¹⁵⁵ DeLaine 1997, 199: estimates workers to be onsite for 8-10 hours. However August has sixteen hours of daylight per day, so it is plausible that builders could be on site for up to fourteen to sixteen modern hours per day. Presumably this did not result in more income. Builders are given a maximum daily income in Diocletian's price edict, and it is unlikely that they were rewarded for working longer days.

worked in the sun for many hours at a time, presumably with little breaks. We do not have any specific evidence of health and safety regulations being enforced on site, but a relief from the tomb of Hateritii depicts two workers climbing on a pulley mechanism.¹⁵⁶ The image shows little regard for the safety of the two men. They were climbing with no ropes to hold them in place, and no head protection. Additionally, the scaffolding system that was used during the construction of large projects in Rome was also a risk to builders. Scaffolding was erected by building platforms of wood into the wall, which the builder then stood on to continue working. This method of scaffolding is high risk. By placing the scaffolding into a wall like this, the builders were relying on the temporary stability of the bricks, before the full strength of the concrete was achieved. In modern masonry wall structures,¹⁵⁷ construction requires scaffolding that is entirely separate from the building.¹⁵⁸ This is because modern cement does not reach its full strength until between twelve and twenty-four days after pouring.¹⁵⁹ By using the wall itself to hold up the scaffolding, builders and architects were ignoring the risk of instability under lateral loads. The vertical (gravity) loads were likely to be able to be resisted by the bricks in compression, but if there was high wind, an earthquake, or an asymmetrically installed scaffolding platform, the stability of the wall would have relied on the (undeveloped) strength of the concrete.¹⁶⁰

With oversights in health and safety like these, a construction site was clearly not a safe work environment. Injury would have been high due to the 'trial and error'

¹⁵⁶ Tomb of Hateritii, housed at Vatican Museum, Cat # 9997

¹⁵⁷ This type of structure is similar to Roman building techniques

¹⁵⁸ NZS4210:2001 Clause 2.17 - Bracing during construction; states that unfilled block work becomes unstable in high winds when higher than 1m tall. Worksafe Good Practice Guidelines for Scaffolding in New Zealand Section 8; all of the supporting surfaces for scaffolding listed are at ground level

¹⁵⁹ New Zealand Concrete Construction Standard; NZS3109:1997, Table 5.3

¹⁶⁰ The wind, EQ or asymmetric loads cause out-of-plane bending in the wall; so the stability of the wall either relies on a large compression force at the top of the wall or the bond between the bricks to hold the bricks together. Bond between the bricks directly after laying them is very low so the likelihood of collapse is high. See NZS 4210: 2001

approach to ancient building, especially for the likes of perfecting the dome or arch. These structures required precision, and although models of the building were built pre-construction, the weight of cement and stone changed the way the building behaved and a small scale model would not capture this effect.¹⁶¹ An assessment of the Pantheon's structure make up shows that different materials were used in different parts of the dome. At the highest point of the dome, the concrete is a lot thinner, and pumice was used as an aggregate to reduce the weight. This type of dome technique almost certainly resulted from trial and error on previous dome structures from the first-century B.C.E. These risks would have resulted in a high turnover of skilled and unskilled staff, thus leaving the builders' families vulnerable to the man's death or injury, either of which would result in the suspension of his income.

Lack of health and safety perhaps suggests that building was a hazardous way to earn a living. If so, why did so many free people become involved in the industry? A likely reason was the low start-up costs to work on a building site. According to the surviving apprenticeship contracts for construction, students would receive tools upon completion of their training, making entering the workforce free. This, in turn, enables a significant amount of social mobility. It was possible for a relatively poor child to gain an apprenticeship, and be able to begin work immediately with no start-up costs. This shows an entirely different path into work than the one discussed for bakers in the 'bakers' section, making it a much more attractive option.

Daily Realities:

The day to day activities are easily defined for builders, especially for large imperial and elite building projects, where money was not an obstacle. On these

¹⁶¹ See Niha model, Beirut Museum, Lebanon: for an example of a building model.

projects, the hierarchy was easily identified. Master builders were in charge of reading architectural plans, agreeing to contracts and overseeing builders typically in the form of working gangs, *decuria*. These groups would have been skilled and likely worked in groups of ten, a typical pre-industrial work gang structure.¹⁶² The skilled labourers were responsible for the construction of walls, wooden frames, and overseeing the unskilled labourers.

The use of different working gangs in such a densely populated site is a testament to the organisation and hierarchy utilised in urban Roman construction. Inconsistencies in management and building techniques observed in the baths of Caracalla raise questions about training variations around the empire. At the management level, we see significant discrepancies between the two halves of the central block.¹⁶³ There are differences in both the number, and placement of drains between the two sides, of the internal arrangement of structures, and also the placement of windows.¹⁶⁴ The size of the baths of Caracalla suggests that there was a different site manager on each side of the central block. The variations in the construction of the two halves of the central block show different interpretations or readings of the plans from the architect. This suggests either a difference in training for the men or the development of techniques that took place over their careers.

Further down the hierarchy on a building site, variations can also be seen in the construction process, most noticeably in the manufacturing techniques of both the lintel and relieving arches.¹⁶⁵ Some of the inconsistencies were located very closely together, with some differences in construction techniques occurring on opposite sides of a door.¹⁶⁶ There were many variations in the building method of simple structures, some variations may have developed through a career, but most builders

¹⁶² DeLaine 1997, 204

¹⁶³ DeLaine 1997, 173

¹⁶⁴ Ibid

¹⁶⁵ Ibid

¹⁶⁶ Ibid

would erect structures in the manner they were trained. Because of the proximity of these differences, it is safe to assume that they were built by the same *decuria*, indicating that the men were trained separately and consequently hired by the same master builder.

These differences, in both levels of the hierarchy, demonstrate how builders moved through society. Unlike bakers whose likely path to a career was family or sponsorship, builders were clearly more able to move freely, both geographically and socially. Regarding geographic mobility, it is possible that the difference in techniques is down to regional variations. Does this, in turn, suggest migration to Rome for work? Why, if the cost of living was so high, would labourers move to Rome for work? Many possibilities arise, but perhaps the most significant is the earning potential. These builders may have been temporary inhabitants of the city and returned to their home after the building season.¹⁶⁷

Small Building Projects:

Roles were easily defined on a large project, but when a project was smaller, and not all of the different roles in the industry could be filled, workers would often have to take up the job of other tradesmen, such as the architect. Gallius, for example, shows that builders were capable of design.¹⁶⁸ Along with the lack of architects and contractors for smaller scale domestic project, builders had to perform more jobs that were usually assigned to unskilled labourers. Because of this, buildings were not constructed as fast, as can be seen with the *Insula of the Paintings* in Ostia, which has been estimated to have taken four years to build, and only used a team of sixteen

¹⁶⁷ This reinforces the view that the population of Rome fluctuated with seasonal demand. See page 30-31 for more.

¹⁶⁸ Gallius *Attic Nights* 19.10 "Adsistebant fabri aedium complures, balneis novis moliendis adhibiti, ostendebantque depictas in membranulis varias species balnearum."

men.¹⁶⁹ These changes in roles would surely make these projects less desirable due to the number of unskilled tasks that needed to be performed.¹⁷⁰

These projects could, however, lead to the desire to train an apprentice. The tiresome work usually performed by unskilled labour would have been a good way for a master builder to keep an apprentice occupied while avoiding the work himself. Let us suppose that a builder gained a four-year-long contract to build an *insula* in Ostia. He would be more inclined to hire an apprentice to assist him in the digging of foundations and mixing of concrete. By using an apprentice for these unskilled tasks, rather than employing unskilled labour, the builder would potentially save money. As discussed above, many long-term apprentices were unpaid in the early stages of training, sometimes up to two years. This would mean free labour for the more arduous periods of the schedule, with limited payment only beginning later in construction. Building apprenticeships were typically long and potentially aligned with the duration of small-scale building contracts.

Craftsmen and Society:

A common element in the case studies presented was the importance of connections. An important aspect of making, and maintaining relationships was through the *collegia*, where workers formed bonds with one another, patrons and clients. *Collegia* are groups formed around a shared aspect of their lives, such as job, religion or community. For our discussion, we will focus on the *collegia* that were created for a shared profession. Once again, we are faced with biased representation regarding the *collegia* from our elite sources. Thus, we must use caution when

¹⁶⁹ DeLaine 2000, 127. Compare this to the estimated five years taken to complete the Baths of Caracalla.

¹⁷⁰ Although, a long contract would make life more financially stable.

assessing our literary material and consult archaeological evidence to draw conclusions on how they impacted our ordinary Roman's lives.¹⁷¹

The largest *collegia* in Rome was the *fabrum trigariorum* which had 1300 members by the third century C.E.¹⁷² Builders were a substantial part of the population of adult men in Rome. DeLaine suggests that adult men made up around a quarter of the population of Rome, and therefore, perhaps 15-24% of the adult male population was involved in the construction industry in some way.¹⁷³ Not only did the *collegia* help with the smooth operation of day to day tasks for Roman builders, but it also benefitted the builders' social lives, away from the workplace. If a craftsman could afford to join an association, he would receive social benefits including social networking, which improved work prospects, and financial aid including sick and burial funds.¹⁷⁴

The *collegia* also assisted in obtaining rights and protection for craftsmen. Organised masses were seen as a threat to the senatorial elite, and thus they had more power when collected into groups with a common goal. The power of such groups is shown in a document from Sardis dating to 459 C.E. which outlines an

¹⁷¹ Evidence for the *collegia* is predominantly from the Imperial period. There are references to associations in the early to mid-republican period, but these are limited and not very clear. Towards the end of the Republic, references to *collegia* grew. The elite began to notice them as 'readymade' groups for electoral support and conversely, an easy way for the masses to organise themselves in violent demonstrations. Most of the information on the elite's thoughts on these associations comes from Asconius' commentary on Cicero's speeches. According to Asconius, a decree from 64B.C.E. abolished, 'those *collegia* that seemed to have been established in conflict with the public interest'. After the disestablishment of associations, Publius Clodius Pulcher, re-established them in 64BCE and also set up new ones. These *collegia* were believed to be a source of social and political unrest in the late Republic, and it is therefore unsurprising that Caesar and Augustus attempted to 'clean up' the associations. Caesar and Augustus both used antiquity as a way to establish legitimacy for the *collegia*. Any *collegia* that were not seen as legitimate were disestablished, with the exception of a few that were kept for the 'public interest' such as the *Fabri* and *Fictores*. See Liu 2009 for more on the *collegia*

¹⁷² CIL 6.9034

¹⁷³ DeLaine 1997, 201

¹⁷⁴ Graf Von Der Schulenburg 1986, 3

agreement between a state official and an organised group of builders.¹⁷⁵ One section of this document outlines what occurred when a builder left a job before it was finished. It seems that an agreement was made in which the employer has to give the builder twenty days grace if he was ill, and seven days for other reasons. If the builder still did not return to work, the association of builders had to supply a substitute. If the job was still not completed, even after a replacement was supplied, a fine was issued and the association prosecuted.¹⁷⁶ These rules, although very beneficial to the private employer, also give the builders some rights, such as sick leave. With this amount of collective bargaining power, we can see how the association could potentially be used for social and political gain.¹⁷⁷

Additionally, craftsmen could use the security obtained through *collegia* to take part in civic life. By participating in political issues as part of a collective, craftsmen were ensuring that they had 'safety in numbers'. We see an example of this security in an inscription regarding a riot in Asia Minor. In the second century C.E., a group of bakers began to riot in the marketplace of Ephesus. A proconsul of the town issued a statement after the riot:

βαίνειν ἐνίοτε τὸν δῆμον ἰς ταραχὴν καὶ θορυβούς ἐνπίπτειν διὰ τὴν
 σ[ὺλ-]| λογον καὶ ἀθρασίαν τῶν ἀπτοκὸπων ἐπὶ τῇ ἀγοπᾷ-στάσεων ἐφ'
 οἷς ἐξπῆς [αὐ-]| τοὺς μεταπεμφθέντας ἤδη διχὴν ὑποσχεῖν. ἐπεὶ δὲ τὸ τῇ
 πόλει συμφέ[πον ξπῆ]| τῆς τούτων τιμωρίας μᾶλλον προτιμᾶν,
 ἀναγκαῖον ἡγησάμην διατάγ[ματι]| αὐτοὺς σωφρονίσαι. ὅθεν
 ἀπαγορεύω μήτε συνερχέσθαι τοὺς ἀρτοκ[ό-]| τους κατ' ἐταιπίαν μήτε
 προεσηκότας θρασύνεσθαι, πειθαρχεῖν δὲ π[άν-]| τως τοῖς ὑπὲρ τοῦ
 κοινῇ συμφέροντος ἐπιταττομένοις καὶ τὴν ἀ[ναν-]| καίαν τοῦ ἄρτου
 ἐργασίαν ἀνενδεῇ παρέχειν τῇ πόλει.

¹⁷⁵ Sardis 7.1.18

¹⁷⁶ Garnsey 1998, 77

¹⁷⁷ Garnsey 1998, 79: Does not think that the bargaining power of the association is clear.

"It happens that the People sometimes bursts into disorder and confusion due to the recklessness of bakers in the market. They should have been promptly arrested and tried for these riots, but since the city's welfare should be given priority over their punishment, I have decided to bring them to their senses with an edict. I therefore order the bakers not to gather together as a faction and the leaders not to act boldly. Rather they are to obey completely the regulations established for the common welfare and to supply the city with the necessary production of bread without fail."¹⁷⁸

This inscription shows how bakers used their societal worth to ensure leniency. If they acted alone, surely they would be punished. But they found 'safety in numbers' as punishing all bakers involved would stress the food supply in Ephesus. The one punishment that they did receive was a restriction on their collective activities. They were no longer able to meet in groups as it awarded them too much power over the town. Collective demonstrations like the riot in Ephesus show the extent of power craftsmen had when they acted as a unified group. This gave ordinary Romans the ability to assert themselves into civic life, potentially benefitting their financial position.¹⁷⁹

As demonstrated, *collegia* were clearly a very popular way for craftsmen to make social connections. Despite its popularity, it was a costly way to make connections. Popular opinion from scholars is that there was some kind of fee to join a *collegia*, either an entrance or monthly fee. Poorer craftsmen who could not afford the expense still needed social connections to have a successful career. Apprenticeship

¹⁷⁸ SEG 4.512. Translation accessed Buckler 1923

¹⁷⁹ Collective behaviour in the work place has always been an effective tool for a group with common goals, see Vanderbroeck 1987, for more on collective behaviour.

contracts were perhaps a way to make new social acquaintances. A weaving contract from Oxyrhynchus demonstrates how apprenticeships fostered relationships. The weaver, Pausiris, wanted his three sons, Ammonios, Dioskos and Pausiris to become weavers too. Instead of training his sons himself, he opted to send his sons to different weavers for their education. We know that Pausiris could train an apprentice, as he had an apprentice himself.¹⁸⁰ It, therefore, appears to be a social networking decision. Pausiris sent his two eldest sons to the weaver Apollonions, but sent his youngest son, Pausiris, to the uncle of his apprentice.¹⁸¹ This shows that Pausiris' student also had a weaver in his family, but instead was sent to Pausiris for training. This complicated social networking situation suggests the importance of establishing or strengthening, these connections within the community of craftsmen. By trading family members in this way, Pausiris was extending his family. The mere act of sending a son to another man to train may not appear to be making permanent family ties, but evidence suggests apprentices became part of the family. If a master died, it was common for his apprentice to be listed alongside his family.¹⁸² The apprentice would help to fund the monument, and the same would be done if return if the apprentice died.¹⁸³ This once more shows how lower class craftsmen mimicked *collegia* with their private social networking. As mentioned, part of being in a *collegia* was to receive money for burial. Without this financial aid, many craftsmen would not be commemorated. But, by taking on an apprentice, a craftsman was ensuring that his family had some financial assistance when he died to set up funerary monuments.

Alternatively, daily realities discussed in our case studies demonstrate how ordinary Romans may have formed social networks within their working groups. A possible scenario for a builder is seen in the labour structure on a building site. The

¹⁸⁰ P. Mich 3.171

¹⁸¹ Bradley 1985, 320. P. Mich 3.170; P. Wisc 4; P. Mich 3.172

¹⁸² See IGUR 2.936 for example of a pupil listed alongside extended family.

¹⁸³ For master funding monument for pupil: IG 10.2.1, 876; for a pupil funding monument for his teacher: SEG 13.506. See Frue 2016, 190 for more examples and a full discussion.

decuria sets up an ideal structure for labourers to establish beneficial connections. Within the group of workers, it is possible that one of the men also tenanted a farm that needed labourers for the harvest.¹⁸⁴ This man could hire his new work gang as unskilled labourers during the construction offseason. This benefits both the farmer—who employed workers that he trusted and, the builders—who could earn extra money during the offseason. Additionally, all parties had the potential to expand their social network without joining a formal faction. This both saved money and secured more work.

The methods of social networking discussed above do not only foster working relationships, but also assist craftsmen with social mobility. Social mobility was an important aspect of daily life for the skilled workforce of the city. Most would not be comfortable simply surviving; they would want to thrive and better their family name. The *collegia* offered a way for vertical social mobility. Each *collegia* had a patron, usually a local elite. The implication of this is that any prominent member of the *collegia* likely had contact with the local elite who sponsored their group. Contact does not necessarily mean that they would benefit socially from the connection, but simply knowing a member of the elite would lead to more opportunities. Evidence of the prominence of freedmen who had wealthy patrons shows that although the freed did not have the social approval of the elite, they did have sufficient funds to actively participate in an elite lifestyle.

[Craftsmen: Income](#)

The earning potential for craftsmen was good, as recorded in Diocletian's Price edict.¹⁸⁵ According to the edict, most of the skilled wage labourers earned 50 *denarii*

¹⁸⁴ See page 30-31 for the seasonal farming cycle

¹⁸⁵ See chapter one for a discussion on the prices in Diocletian's edict

plus maintenance—a meal per day. Firstly, the value of the meal included in wages must be worked out in a monetary value in order to assess real income. The supplied meal was likely to comprise of grain or bread. According to Duncan-Jones, slaves were given approximately five Italic *modii* of wheat per month, as were members of the *frumentaria*.¹⁸⁶ Allen theorises that this would be the monthly food allowance given to workers as part of their pay.¹⁸⁷ Allen divides this amount of wheat by thirty days to estimate the daily amount and then adds that to the daily wage. However, Scheidel points out issues with this method and states that the ‘maintenance’ would only be available on the days worked, not every day.¹⁸⁸ Since the estimated number of days worked is 250, or 69% of the year, it follows that food would be available for 69% of the month. Therefore, the value of the food provided would be 7 *denarii*, and this value should be added to the maximum daily income of a labourer.¹⁸⁹

Additionally, there are further issues with this figure. First, both Allen and Scheidel used a value of 100 *denarii* per *modius castrenses* for grain, but the measure of 5 *modii* put forward by Duncan-Jones is Italic *modii*, which is a smaller measure.¹⁹⁰

Secondly, the amount of grain is very high and would supply the consumer with 3,670 calories per day.¹⁹¹ This calorie amount is far more than was needed by a Roman man, in fact, Allen allows for an average calorie intake of 1970 per day.¹⁹²

This number is not exclusive to men, so it is best to allow 2300 calories per day.

Furthermore, we do not know if the food supplied was enough for one man for an entire day or just a meal while at work, but to be conservative with our figures,

allowing for the whole day is fine.¹⁹³ Based on this calorie intake, a single man would

¹⁸⁶ Duncan-Jones 1982, 146

¹⁸⁷ Allen 2009, 330

¹⁸⁸ Scheidel 2008, n.17

¹⁸⁹ 7 *denarii* instead of the 11 *denarii* suggested by Allen 2009, 330

¹⁹⁰ Therefore, the price of grain should be 67 *denarii* per Italic *modii*.

¹⁹¹ Scheidel 2008, n.17

¹⁹² Allen 2009, 333. As we have found issues with the calculations in Allen’s chapter, I used skeletal evidence to confirm this number. See page 85 for full discussion

¹⁹³ Labourers most likely only received enough food whilst at work. Roman soldiers were given 25 *modii* as partial payment of their wages. However, the possibility remains that labourers

need just over 3 ½ *modii* of wheat per month. This figure, adjusted for 69% of the month comes to a value of grain per day to 5 *denarii*.¹⁹⁴

We can continue this analysis in the context of the previous case studies and assess differences in income. With builders, we know that work was steady through the summer, but in winter, work was hard to find. In fact, builders would have had approximately five months, or 104 days, of work before the weather became too wet and cold to use most of the materials involved in construction.¹⁹⁵ Diocletian's price edict states that skilled builders were paid 50 *denarii* per day, plus maintenance, approximately 55 *denarii* per day. This would bring his yearly maximum income from building to approximately 5,720 *denarii*.

In the case of this type of seasonal labour, the most likely scenario is that unskilled labour was undertaken during the 'off-season'. Labourers worked, on average, 250 days per year.¹⁹⁶ Therefore, it is likely that these extra 146 days were spent working day by day in unskilled fields. According to Diocletian's price edict, unskilled labourers were paid 25 *denarii* per day, plus maintenance. Over the course of 146 days, a builder could have earned an additional 4,380 *denarii*, bringing the income up to approximately 10,100 *denarii* per annum. This income, compared to the cost of sustaining a family, 13,700 *denarii*, is too low. Comparing this remuneration to the cost calculations in chapter one, and the table in appendix one, we can see that a builder would fall short by 3,600 to 8,200 *denarii* per annum.¹⁹⁷

Bakers, unlike builders, could work in their skilled craft all year round. According to Diocletian's price edict, a baker earned 50 *denarii* per day, plus maintenance, like

were given more, or that they were given a more expensive commodity, like bread, therefore an estimated amount of 5 *denarii* is reasonable.

¹⁹⁴ 3.5 *modii* per month/30 days= 7.8 *denarii*. 69% of 7.8 equates to 5.4 *denarii* per day.

¹⁹⁵ Frontinus 2.123, states that work involving cement could only be conducted during the summer months, excluding the hottest month in the middle of the summer. Months worked would be April, May, August, September, and October, at approximately 21 days per month.

¹⁹⁶ Bernard 2017, n.102

¹⁹⁷ Based on the calculations for a four person family, with dependants over 5 years old

the builder, but the baker was able to earn this wage for approximately 250 days per year. By working in a year-round field, the baker would be able to earn approximately 13700 *denarii* per year. Again, comparing this figure to the cost of living in chapter one, a baker would be 0 to 4600 *denarii* short per year.¹⁹⁸ Although it is possible that a skilled labourer employed in a steady profession earning the maximum potential income could support his family alone, this would only be true until his children were over three years old. For the majority of craftsmen did not earn enough money to sustain a family or household.

Conclusion:

This assessment of craftsmen, via case studies of specific trades, has shown a more complex view of the incomes of skilled labourers in general. We can see that they did not prescribe to the elite view of them and their craft, but instead took pride in their work and wanted to be remembered for their craft. We have assessed daily realities for bakers and builders, and how aspects of those professions influenced the social life of the craftsmen. The day to day life of a skilled craftsman focused heavily on social connections to further their career, and enable upward mobility. Social relationships were crucial to not only social mobility but security also. Strength comes in numbers, and the *collegia* took advantage of this strength in an attempt to better their lives.

Our discussion on working craftsmen in the Roman Empire illustrates that it was unlikely that a sole income family structure was financially viable. There was potential for craftsmen to earn enough money, but this certainly was not a guarantee for the majority of working craftsmen. Additionally, the figures presented represent

¹⁹⁸ Ibid

a 'best case scenario' as they are based on maximum income, not true wages. Thus we must look to other options for income in the Roman family.

Chapter Three: Skilled Women

Looking at Roman society through a traditional elite lens shows women to be silent social and economic participants. The ideal for women's behaviour can be seen in both the elite writing and epitaphs commemorating women's lives. Women were usually described as 'chaste', 'modest' and 'faithful'. If women did not fit into this ideal, they were often depicted at the other end of the spectrum. Many elite women who did not stay within their assigned domestic sphere, but rather ventured into the public political arena went down in history as 'evil' women.¹⁹⁹ Their physiology predestined the ideals that were put onto women.²⁰⁰ Women were always bound to be the child-minder, and that in turn made them the logical group to run the household. However, we have seen that an ordinary family could not afford to live off one income, it follows that women needed to work to ensure the survival of the family.

Elite attitudes have influenced the way that modern scholars approach working women in the Roman Empire. Allen, for example, states: "No allowance has been made thus far for the earnings of women and children. They could work many hours, although their wage rates were usually so low that their employment could not decisively change the situation."²⁰¹ Hawkins, on the other hand, believed that women were unable to perform certain aspects of the business: "Fannia was perhaps a spouse or partner in a business in which her male partner handled most of the technical aspects of craft production, while she devoted her time principally to household tasks."²⁰² These opinions appear to be largely based on elite expectations and ought to be questioned. Since the 1990's we saw a shift in academia in regards

¹⁹⁹ Take, for example, Agrippina the Younger

²⁰⁰ Groen-Vallinga 2013, 297

²⁰¹ Allen 2009, 339. This is not true in a modern developing country, where a woman's income, no matter how small, has a greater effect on children's nutrition than a man's income. See Mehra et al. 1992, 2 for more.

²⁰² Hawkins 2016, 255. Hawkins draws these conclusions on the apparent lack of women freeing slaves. See Hawkins 2016, 242ff.

to ordinary men. Scholars stopped believing the elite views on work and started to assess evidence without the preconceptions provided within literature. It can, therefore, be argued that the same should be practised for working women. Although elite ideals influenced women's lives through legal restrictions, and thus had more bearing on women's actions, many women did not fall into the ideal model, instead working to support their family.

Craftswomen: Difficulties with Reading Epitaphs and Lack of Information

Before considering women's public economic contribution, it is important to note the difficulties with the available evidence. The first issue we encounter when studying working women is a scarcity of women documenting their occupation. In the city of Rome, 1470 inscriptions recording occupation survive. Of these, 208, or 14% are for women.²⁰³ This could be a sign that it was rare to find a working woman in Rome, which would fit in with the perceived traditional gender roles of the time. However, this was not financially possible for the majority of Roman families. An additional factor to note with these figures is the scarcity of the working class in general including an occupational title on their funerary monument. Out of an approximate 35,000 funerary texts in volume six of the *Corpus Inscriptionum Latinarum*, there are only an estimated 1,300, or 4% containing an occupation. Both men and women were excluding their occupational title from their funerary reliefs, but women more so. This is most likely due to either the gender bias or poverty.²⁰⁴ If a woman did work to alleviate poverty, then it is unlikely that her family would have sufficient funds after her death to set up an epitaph in her name.

²⁰³ Joshel 1992, 16. Many of these would have been for slaves too.

²⁰⁴ Groen-Vallinga 2013, 298

Extant epitaphs suggest a reasonable amount of economic success. This is seen in both their pride in their work and the cost to set up an inscription.²⁰⁵ Those with less financial success ended up in the potter's fields, or their ashes were placed in an unmarked amphora. Cheaper forms of commemoration such as wooden markers were also likely. However, these would not survive over thousands of years, rendering the occupational information lost.

An additional issue to consider is the person who set up the epitaph. Most of the information given to us does not come from the person being commemorated, rather a patron, parent, child or spouse. We may, therefore, expect to see social expectations permeate through the commemorations. For example, a husband may commemorate his wife as a dutiful spouse, who spent her days spinning wool and looking after the household. This kind of commemoration may not reflect how the deceased lived, but how her husband wished to be viewed himself, as a man who would attract a virtuous woman. The accuracy of these limited inscriptions, therefore, must be questioned. With such a small sample of the working population presented we only see a partial snapshot into the lives of working women.

A further problem we face is how women appear in occupational inscriptions. Take, for example, a woman from Rome listed in an inscription with a group of clothes menders. The inscription reads;

"P. Auillio P. L. Menandro patrono post mortem liberti fecerunt et sibi qui infra scripti sunt Θ Auillia P. L. Philusa P. Auillius P. L. Hilarus P. Auillius P. L. Anteros P. Auillius P. L. Felix vesteri de Cermalo minusculo a////s obe//"

²⁰⁵ The cost of simple epitaph is estimated to have cost three months of an unskilled labourer's wages. Joshel 1992, 34. Therefore, only people with savings, or members of a collegia would have been able to afford this, especially after the death of a key actor in the family's economy.

"Auillius Publius Menander, freedman of Publius, patron, after his death his freedmen made (this) for themselves and they (who) are inscribed underneath. Amillia Philusa freedwoman of Publius (deceased), Publius Auillius Hilarius, freedman of Publius, Publius Auillius Anteros, freedman of Publius, Publius Auillius Felix, freedman of Publius, clothes menders in the "smaller" Cermalus region (on the Palatine)."²⁰⁶

Here we can see that the occupational title given to the mixed gender group, *vestiarii*, is the masculine plural of *vestiarius*. This is just one example of how the identification of women in crafts is made even harder.²⁰⁷ The exclusion of her own gendered occupational title has left many to believe that she was not active in the craft, but rather, played a customer service role in the business. However, the practice of including women under masculine titles is seen elsewhere in the Roman world, most notably, in legal texts.²⁰⁸ Legal writers used the masculine form of nouns and adjectives when discussing mixed gender groups, "because the masculine sex always contains the feminine sex."²⁰⁹ If we apply the same interpretation to occupational texts, it is reasonable to assume that some, in fact probably the majority, of these women had active roles in the craft, trade or industry, and were not simply acting in customer service roles.²¹⁰

²⁰⁶ CIL 6.33920. See also: 6.9398, 6.9435, 6.9933 for further examples of women with masculine occupational titles.

²⁰⁷ Loven 2016, 212.

²⁰⁸ Grubbs 2002, 16

²⁰⁹ Digest 32.62; See Grubbs 2002, 16 for full discussion.

²¹⁰ Holleran 2013, 316: further suggests that even if women were given their own occupational title, this does not necessarily mean that the wives were acting in a retail capacity for her husband's trade. Rather, the deliberate inclusion of an occupational title for the women, along with the titles referring to activity, suggests that the women were in fact doing the same or similar jobs

An additional issue with the identification of working women is the potential to exclude them from documentation altogether, regardless of their involvement. Of course, it is impossible to know if a woman was excluded from a group if the only record that we have of that group is an inscription that only includes men. However, there is an example of a potentially important woman who was excluded from written record in Pompeii. A painting from a façade in the felt shop of M. Vecilius Verecundus depicts a woman at work alongside a man.²¹¹ This painting includes a name and an occupational title for the man, *vestiarius*, but fails to name the woman. Two possibilities can explain her exclusion; first, she was just a slave and was not relevant in the business. This is unlikely as she was important enough to be included in the depiction of the shop. Second, she was not named because it was not typical to label the woman in the business, a reflection of expected societal gender roles. Treggiari pointed to a similar instance where this might happen in modern society.²¹² A fairly common practice is to present, as a business name, the family name with 'and sons' or 'and co.'. In a modern context, there would be no question that women worked in the business, whether family or hired labourers. We, therefore, must look at our ancient sources with the same critical mindset and understand how perceived gender roles inhibit our ability to understand how women fit into the public economic sphere. We must look past evidence to account for social norms that can make women invisible in the extant record.²¹³ This gives us an opportunity to assess our sources regarding the socio-economic roles of working women both in her family and as an active participant in the labour market.

²¹¹ Pompeii 9.7.7; CIL 4.3130.

²¹² Treggiari 1979, 78-9

²¹³ A common method of assessing women in the urban economy after it was established by Joshel 1992

Jobs for Women:

Knowing the limitations of studying working women, the surviving evidence can be assessed in an attempt to understand the daily realities of urban working women. To make up a full picture, we assess a wide range of skilled crafts that were performed by women. The majority of the evidence for skilled craft jobs comes from epitaphs and contracts. After assessing jobs, we can evaluate the extent of gender bias in the Roman economic sphere. To what extent did the idealistic gender roles affect women's ability to act in the household income? Did women face barriers when entering the job market, and how did their physiology impact their ability to work? Did women face a gendered wage gap, not only as a whole but in specific crafts also?

The most obvious place to begin when it comes to women's work is in the textile industry. Women could perform aspects of this job from home, but the production of cloth and clothing was more efficient when performed large scale.²¹⁴ Livy documented the use of large-scale clothing manufacture with two large clothing shipments to be sent to the army abroad. These include Tiberius Claudius Nero in 204 B.C.E. sending 1,200 togas and 12,000 tunics to North Africa for the soldiers serving under Scipio the Elder.²¹⁵ And in 196 B.C.E. C. Sulpicius had 6,000 togas and 30,000 tunics sent to the army in Macedonia.²¹⁶ Although Livy does not state who gained the contract for these orders, it is unlikely that it went to one clothing manufacturing workshop, but instead many workshops throughout Italy. A possible scenario is that the requirements of the order were given to the head of the *collegia*

²¹⁴ Cato *De Agricola* 1.135: Cato states that it is cheaper to buy clothing for slaves at Rome, as opposed to having his own slaves make it from home. We can assume that large scale manufacturing is the reason for the savings. Loven 2016, 207 notes that that Cato's advice lines us, chronologically, with the clothing orders discussed in Livy, 29.36, 44.16, and reflects the existence of a market for readymade clothing in Rome.

²¹⁵ Livy 29.36

²¹⁶ Livy 44.16

Centariorum and distributed to its members.²¹⁷ This method of distributing work to different contractors is a practice outlined by Pliny in his discussion of subcontracting his harvest. Pliny, in a letter to Calvisius boasting about his generosity to his contractors, also gives us a glimpse into the methods of subcontracting in Rome.²¹⁸ Pliny had a crop that needed to be harvested, and instead of hiring one contractor to do the lot, he opted to hire multiple contractors, presumably small working groups, to share the work around.

Pausanias also describes a town in Egypt, Patrae, where there was a significant textile market. He claims that women outnumbered men two to one and that these women gained their livelihood by weaving hair nets and dresses from the flax that grew there.²¹⁹ An inference from the gender imbalance could be that Pausanias associated textile work with women, an assumption which could be based on perceived societal gender roles. Egyptian apprenticeship contracts actually suggest that more boys were being trained in this field. Of course, there are few extant contracts. Nevertheless, they do indicate that Pausanias' observations are based on audience expectations and association.²²⁰ However, these expectations suggest that many women were gaining a livelihood from the textile industry, not just in Egypt, but potentially Italy as well. The sheer scale of the clothing being made for the army orders discussed previously suggests a large workforce. Not only would people be sewing the physical clothing, but there would be wool weighers, spinners and weavers too. These numbers, although not explicitly attributed to women, show a place where women would be expected to work. Even if men did outnumber them, there would have been a significant amount of women working in these roles.

²¹⁷ This scenario depends entirely on the date that the *collegia Centariorum* was established. See Liu 2009, 36ff. for a full discussion on possible dates.

²¹⁸ Pliny *Ep.* 8.2

²¹⁹ Pausanias, 7.21.14

²²⁰ However, it does show that despite assumed gender roles, Pausanias believed that many women were working, and thus acting in the economy.

This description from Pausanius also gives us a place where women could be working outside of the home. Although some of these tasks could be and were performed within the household, an activity such as weaving was near impossible in an ordinary Roman home. Weaving required the use of a loom, a very large, heavy and expensive piece of equipment.²²¹ The most likely scenario is that women were working away from the household in a workshop, and based on apprenticeship contracts for boys training to weave, men and women were working alongside each other.

Industries where women are expected to be more dominant are important to the Imperial economy, and women's place in it, but women attested in male-dominated crafts are more difficult to find. There is, however, evidence of women participating in these 'masculine' fields, including two ironsmiths, two bakers, and a cobbler. These professions are associated with men due to the heavy lifting and physical strength that is involved on a daily basis, but thanks to epitaphs documenting these women, we can confidently argue that women were active in many physically demanding crafts around the Empire.

First, we will discuss the two smiths. A monument set up by a group of ten ironsmiths includes two women, Fannia and Fannia.²²² The inscription gives us little more than their names, and an occupational title for the group, once again, in the masculine form. Based on the conclusions established above, we can assume that they worked alongside the men as ironsmiths, rather than in a retail capacity. Some historians have suggested that women involved in these types of trade would have performed some of the tasks required, but left the heavy lifting to the men.²²³ There is, however, no evidence that this was the case, and thus we must treat these women as ironsmiths. Additionally, the women were freed, meaning they likely gained their

²²¹ Loven 1998, 86

²²² CIL 6.9398

²²³ Treggiari 1979, 67

training as slaves. It seems uneconomical and unlikely that an owner would invest the money in training a woman to be a smith when the return was only for partial labour. The investment of training a slave would have been useless if she was not worth as much as a male smith, therefore, the most likely scenario was that she performed all of the tasks required of her as a smith. From this inscription, we can state that women could, and did work as smiths, but they did not have the funds, or the desire to document themselves, or simply, that they did document themselves, but the evidence has not survived.

The same theory can be applied to the involvement of women in the baking industry. This was, once again, a job that required great physical strength. Indeed, it is clear that animals were used for the mills and kneading; there remains the repetitive lifting involved the cooking of bread itself.²²⁴ Upper body strength was required to operate an oven. The heat combined with the weight of the paddle and long periods of standing made this a physically arduous job.²²⁵ This does not mean that women could not, and did not work in this field, in fact, evidence survives throughout the ancient world that demonstrates women's ability to work in these conditions. We have two inscriptions commemorating female bakers, one from Carthage, and one from central Italy.²²⁶ This surviving evidence suggests that perhaps baking was not reserved for men, maybe women in the industry was a common occurrence.²²⁷ Perhaps this is due to bakeries falling outside of economic modelling for working families. In chapter two we established that bakers did not fit the parameters for the 'adaptive family economy' due to the unique conditions of the

²²⁴ Eurysaces tomb depicts animals for working the mills and kneading machine

²²⁵ Before the arrival of professional bakers between 171 and 168 B.C.E. baking was seen as women's work. With the commercialisation of baking came the arduous repetitive nature of the job. Pliny *HN* 18.107

²²⁶ CIL 9.4721, CIL 8.24678.

²²⁷ Further evidence from the ancient world is extant in Rabbinic texts. In the Rabbinic texts, we do not see a gender bias when it comes to laws of selling dough—rather, women are treated in the same manner as men. See Mishnah *Callah* 2.7

business.²²⁸ It is therefore likely that all children, no matter what gender, trained from a young age in the family business. Additionally, with the bakeries being a family business, it is possible that women would inherit the business after the *paterfamilias* death. If a baker had no sons, then the business would go to his daughters or wife.

Another industry where we might not expect to find female workers was cobbling. However, a relief fragment from Ostia provides evidence for women's involvement.²²⁹ The fragment depicts a woman, Septimia Stratonice,²³⁰ seated, holding a shoe maker's last, or *forma*, a tool in the shape of a human foot which was an important instrument as it assisted in constructing shoes with the correct proportions. Septimia is depicted wearing a simple tunic with a modest hairstyle, suggesting that she was a humble working woman.²³¹ The inscription is only partially preserved, and we cannot read her occupational title, it is clear, however, that she was a cobbler.²³² Based on the size of the monument, she was likely prosperous in her career and was clearly very proud of that success. Equally significant is the absence of any man in the image. It was common in the Roman Empire to see images of men and women on funerary monuments; a craftswoman appeared alongside her husband, or with a group of men.²³³ Here, Septimia's independence on the epitaph is significant because she symbolises an independent craftswoman.²³⁴

²²⁸ See chapter two.

²²⁹ CIL 14.4698

²³⁰ According to a reconstruction by Raissa Calza. See Kampen 1981, 64, for more information

²³¹ Kampen 1981, 64

²³² This can confidently be stated by comparing the image of her at work, with other images depicting cobblers from both Greece and Rome. Looking closely at her image, we can see that the shoemaker's last does not have any joints, and includes a loop at the top. The image is very similar to both Greek and Roman images of a shoemaker's last confirming that it is a last.

²³³ CIL 6.9489: Man and woman holding hands symbolises marriage

²³⁴ It is possible that this woman was able to act independently because she had gained independence by having children. During the reign of Augustus, he enacted a law that stated if a freewoman had 3 children, she could act independently without a tutor, if she was freed, she had to have 4 children to receive the right. This would have enabled a significant number

The examples allow us to have a glimpse into the workforce—a workforce that does not appear to be absent of women. These women symbolise yet another group that did not conform to the ideals outlined in elite sources.²³⁵ Perhaps elite expectations did not reflect reality, and skilled women should not be viewed as an exception to traditional gender roles, but part of a group of ordinary working women. Expectation versus reality is a constant struggle when assessing ordinary life, both for male and female societal roles. We noted in chapter two the senatorial disdain for the working man in Rome.²³⁶ But in reality we see many men taking pride in their work, and families aspiring for their children to be working within these ‘sordid’ fields to see them move up in society, regardless of the thoughts of the few Romans at the top.²³⁷ Through work successes, families improved themselves through the generations, an important Roman virtue. But, to achieve this success, many traditional social expectations were ignored. Society is full of many complex layers and cannot be set out in a collection of rules and expectations set down by a few wealthy men. We can see a clear conflict between the elite expectations and the demonstrated reality for men and women alike. This does not mean that the lower levels of society were rebelling, but instead demonstrates the complexities of society and what it means to be human.

[Life Stages and Income](#)

The life cycle of females in Ancient Rome influenced her ability to work and in turn, contribute to the household income due to her changing social expectations. Historically, the ability to work revolved around a woman’s childbearing and

of women to act independent in the working world. See McGinn 2012 for more on the *ius liberorum*.

²³⁵ See page 27-29 for more on elite views and craftsmen

²³⁶ Cicero *De Off* 1.150

²³⁷ Cicero *De Off* 1.150: “Iam de artificiis et quaestibus, qui liberales habendi, qui sordidi sint, haec fere accepimus.”

childrearing years; however, the average age of marriage and activities before marriage were also important factors in ancient Rome. A female's working life can be put into different categories based on age and life cycle including; *puella* or childhood, *virgo* or teenage years, her late teen or early marriage years, childbearing and caring years in her twenties, post child-rearing years in her thirties or forties and old age.

Firstly, we discuss work and income responsibilities for girls when they were still considered *puella*. The age in which children began to work has been discussed greatly, with little consensus on an exact age. However, an epitaph from Rome shows a young girl working at a young age. The inscription reads:

"Viccentia dulcissima filia aurinetrix qua vixit A VIII M VIII"

"Viccentia, sweet girl, spinner of gold thread who lived 9 years and 9 months."

This epitaph, though small, gives us one piece of important information, her age. To a modern audience, nine seems like a young age to be working in a trained profession. But consider how young she must have been when she began training. Using apprenticeship contracts from Egypt, we can see that the average training period in the textile industry was two years. If Viccentia's training was also for two years, she would have been at the very oldest, seven when she began her training.²³⁸ Regardless of the age that she started training, we know that by nine years and nine months, she was contributing to the income of her family. A girl in this position

²³⁸ Of course, it is possible that Viccentia's parents were exaggerating her position in the craft. Viccentia may have been a student when she died. If she was training, we might expect to see her teacher partially fund the monument, but without any of this information, the exact level of experience is unknown.

would continue to contribute to the family income until she either died, like Viccentia, or got married in her mid to late teens.²³⁹

When a young girl reached puberty, her entire social position altered as she changed from *puella* to *virgo*. The early teen years, approximately twelve to fourteen years old, was the typical age for boys to enter into an apprenticeship formally. We have less evidence for girls in formal training schemes, but some do survive. Amongst the extant apprenticeship contracts from Egypt three belong to free girls. This small number is troubling as formal training was such an important aspect of beginning a craft for young boys, especially in terms of entering a new social network.²⁴⁰ There are a few theories as to why free girls are relatively unseen in the Egyptian records. Firstly, Bradley states that;

“Freeborn girls do not appear at all, and that is a detail of some significance, for it implies that daughters in artisanal families, like their counterparts in the upper-class society at Rome, may not normally have been trained for work other than that of a traditional, domestic sort, but were instead prepared only for marriage and childbearing in the seclusive manner typical of women’s life in antiquity as a whole.”²⁴¹

This statement, though based on thirty apprenticeship contracts found in Roman Egypt, cannot be true. As outlined above, women did work in crafts and thus must have trained in some matter. Whether the training took place within the family, through marriages or in a formal apprenticeship, there are many reasons why girls might be underrepresented in the contracts. The first possibility is chance. The sample size we are left with is small; it is not unreasonable to suggest that extant documents do not reflect the actual ratios. However, without the evidence, this

²³⁹ At which point her income would go towards her new household

²⁴⁰ See page 33ff.

²⁴¹ Bradley 1991, 108

cannot be stated with confidence. Therefore we must look into possible reasons why there are so few girls attested. A likely possibility is that many free girls learned a trade at home.²⁴²

Another scenario is training at home in the family business. This method of training would be preferable for girls, as most apprenticeship contracts commenced at around age twelve.²⁴³ This was an important age for the young girls, as they were typically married in their late teens. Thus, it was important that a girl keep her 'virtue', as social expectations preferred girls to be virgins at marriage. It should also be stated that this does not mean that the girls who were training at home were learning 'domestic' crafts.²⁴⁴ It was simply a way to train a child within the family business or craft without having to send them away. It was also a way that families could teach their children if they had few social connections in their field. As in chapter two, there was a lot of swapping children around families for their training, but if a craftsman did not have these connections in the first place, they would not be able to organise apprenticeship contracts with them.

Regardless of these possibilities, the fact remains that there are examples of free girls in apprenticeship contracts from Roman Egypt.²⁴⁵ Despite the fact that boys overwhelmingly dominate the evidence, this does not mean that the evidence for girls should be dismissed, or overlooked. A fragmented contract from 271 C.E is for a girl who was contracted to a craftswoman:

“ἐξ[έ]δετ[ο] Αὐρήλιος Ἰσίων Νειλάμμω[νο]ς. τῶ[ν] ἀπὸ κώμης
[Κα]ρ[ανί]δος Αὐρη[λί]α Λιβουκ[ῆ] . . . ἀδίων[ος ἀπ’ ἀμ-] φόδου Βιθυνῶν
ἄλλων τόπων. χωρὶς κυρ[ίου] χρη(ματιζούση) τέκνων δικαίῳ γερδιαίνῃ
τὴν τοῦ αὐτοῦ Ἰσίωνος. [παιδίσκη]ν. [π]αρά Αὐρη[λί]α Λιβουκῆ. . . .

²⁴² Van Minnen 1998, 201

²⁴³ Bradley 1991, 107-108

²⁴⁴ Van Minnen 1998, 201

²⁴⁵ P.Heid. 4.326

πρὸ[ς] μ[άθ]ησιν [τῆς δη]λουμένης τέ[χ]νῃ[ς] ἐ[πὶ χρόν]ον ἐν[ι]αυτὸν
 ἔ[ν]α. ἀπ[ὸ τῆς ἐξῆς ν]εομην[ί]ας τ[οῦ εἰ]σιόν[τος μηνὸς Μεχεῖρ] τ[ῆς]
 πα[ιδὸς τρ]εφομ[ένης] καὶ [ίμα]τιζομ[ένης ὕ]π[ερ]
 αὐ[τῆς(?)]ατα [.]εκ [. .]ματω[.]ω [.]νησου[.]παρ[α]λάβῃ
 [πα]ρὰ τῇ[ς Λιβουκῆς] . . . ”²⁴⁶

“Aurelius Ision, son of Nilammon, a resident of Karanis, has given over to Aurelia Libouke, a resident of the quarter of the Bithynians and other areas, a weaver, acting without guardian by right of her children, the daughter of the brother of the same Ision, to learn with Aurelia Libouke of the same Ision, Aurelia . . . , to learn the indicated craft in the period of one year from the first of the ensuing month Mecheir, the child being fed and clothed by her.”²⁴⁷

A point of contention for this contract is whether the girl was free. When the contract was first published, many lines were heavily reconstructed. In this reconstruction, the soon to be apprentice is introduced in line eight as ἡ παιδίσκη, and is assumed to be a slave. However, as Van Minnen points out, throughout the rest of the contract she is not referred to as ἡ παιδίσκη, but ἡ παῖς. Based on this discrepancy and the large amounts of reconstruction, Van Minnen puts forward an alternate reconstruction of that crucial word in line eight, θυγατέρα. This is a viable option, as the only visible letters in the text are –πα. If this is the correct reconstruction, she is the daughter of Aurelius Ision’s brother, and ἡ παῖς simply means ‘the girl’.²⁴⁸

²⁴⁶ SB 18.13305. Another example of this is KSB 1 045, however, I have decided not to discuss this in full as it falls outside of my timeframe, see Van Minnen 1998, for more on this contract.

²⁴⁷ Translation accessed: <http://www.papyri.info/hgv/14738> and altered based on Van Minnen’s proposed reconstruction

²⁴⁸ Van Minnen 1998, 202

If we accept this alternate reconstruction, it allows us to compare a contract for a free boy's and a free girl's training. Fortunately, a yearlong apprenticeship contract to become a weaver survives for a free boy, allowing us to compare differences in the treatment of boys and girls. Appendix three outlines the major points of the two contracts, allowing us to see the major similarities, and differences. The first thing to note is the date for each contract. The contract for the boy from 66 C.E., a problem when comparing pay rates with a contract from 271 C.E., thus the values have been adjusted to account for inflation.²⁴⁹ As shown in appendix three, many of the conditions for the two contracts are the same. Each child has to work extra days if they were sick or slack, and penalties were applied to both parties to ensure the contract was completed. However, the major difference to be noted is the payment to be made to the two children. We can see that the boy is to receive a total of 84 *drachmae* throughout his apprenticeship. This figure, adjusted for inflation over 205 years comes to 292 *drachmae* for the duration of his apprenticeship. Compare this to the girl's remuneration of 60 *drachmae*. A key difference is that it appears that the girl is to be fed and clothed by her teacher, Aurelia, which would have cost approximately 150 to 200 *drachmae* in third century Egypt, bringing her total to between 210 and 260 *drachmae* or between 11 and 14% less than the boy.²⁵⁰

When a girl reached her late teens, it was expected that she would get married. This is yet another point in a young woman's life that she could enter into training. Using marriage as a way to enhance the financial, social or political agenda of a family was a common tactic in Republican and Imperial Rome as a way to strengthen alliances and share wealth. This method of social networking may have also been used amongst ordinary Romans as a way to enhance business relationships and secure training. A possible scenario is that a young woman married a smith. She

²⁴⁹ I have used the inflation rates of; 66 C.E. to 150 C.E. 0.3%, 150 C.E. to 200 C.E. 0.7%, 200 C.E. to 271 C.E. 0.9%. See Kelly 2017 for more on inflation in Roman Egypt.

²⁵⁰ This percentage is based on the higher wage of 260 *drachmae* to be more conservative. See page 83-84 for more on the wage gap

may have trained in her new husband's business or craft. Marrying for training would not only benefit the woman but the whole family. After a marriage to a craftsman, other members of the woman's family could then train with her new family. This would be a very financially beneficial way to organise unions as it creates more opportunities for the whole family with just one marriage.

This scenario is dependent on the age of the girl when she married. The majority of women were having children between the ages of twenty and twenty-nine.²⁵¹ There were fewer women having children in their late teens and even less in their early teens. This, along with the understanding that girls got married in their late teens, gives young women a gap of approximately three to ten years, which would be enough time to train.²⁵² From a financial point of view, it may have made sense to delay having children, although this is dependent on contraception methods.²⁵³

Additionally, younger women had a higher risk of dying in childbirth than those in their late teens and through to their twenties. Skeletal remains from Poundbury show that ancient Romans developed, on average, two years later than modern Europeans. This delayed development suggests that teenaged female deaths occurred due to early pregnancy and subsequent death in childbirth.²⁵⁴ The risks associated with childbirth at a young age may be why we see more women having children in their mid to late twenties, rather than their teenaged years.

We have no evidence of marriages being utilised as a way to train girls, but we do have evidence that many husbands and wives worked together. Take, for example, an epitaph which depicts a husband and wife who worked together as a hairdresser and barber:

²⁵¹ Frier 1994, 325-26 table 1. The statistical information is in part, due to fertility.

²⁵² Shaw 1987, 43

²⁵³ Pliny *NH*, 29.21 for example. See Dowsing 2000 for a full discussion on contraception.

²⁵⁴ Molleson & Hodgeson 1993, 180

"Pollia C I / Urbana ornat de/ Aemilianis ollas II/ M Calidius M I tosor/
Apoloni de Aemilianis"

"Pollia Urbana, freedwoman, Hairdresser in the Aemilanis. M Calidius,
freedman of Pollius, Barber in the Aemilanis."²⁵⁵

This couple both worked in the Aemilanis and most likely owned a salon together, with the wife working on the women, and husband working on the men. Although the two people in this epitaph were freed and therefore unlikely to have trained together as husband and wife, it stands to reason that skilled husbands and wives worked in business together and training through a joint business remains a possible entry point into a profession.²⁵⁶

During a woman's time as *uxor*, we would expect to see her join the *collegia* for her profession. Evidence for the inclusion of women in professional *collegia* is available, although again, we are faced with a limited number of inscriptions. The majority of evidence for women's participation in *collegia* is for religious groups. However, some are inscriptions for professional associations.²⁵⁷ Surviving *albla collegii*, membership lists, show some women received high honours, either as patronesses, or 'mothers'. The patronesses of *collegia* usually came from a higher socio-economic position, with the majority being equestrians. It appears that these women were honoured due to their 'womanly virtues' and their male relatives positions as patrons of the *collegia*.²⁵⁸ 'Mothers', on the other hand, typically came from a slightly lower socio-economic position, the middle class. Mothers were typically given their title after a large donation was made to their *collegia*.²⁵⁹ These women were clearly active in the *collegia*, but to what extent? Because of their socio-

²⁵⁵ CIL 6.37811

²⁵⁶ See also, CIL 6.9489

²⁵⁷ Hemelrijk 2008, table 4

²⁵⁸ Hemelrijk 2008, 121

²⁵⁹ In the Roman West, twenty six 'mothers' recorded. Hemelrijk 2008, table 4

economic position, 'mothers' likely had a practical role to play in the *collegia*.²⁶⁰ Hemelrijk outlines four reasons to support this claim: 1) they were appointed in *collegia* that allowed women as members. 2) 'Mothers' appear to be on equal footing with the *pater* of the *collegia*, in regards to the gifts bestowed, and their position on the *alba collegii*.²⁶¹ 3) There are equal numbers of *mater* as *pater*, but the two do not appear to be related—therefore, they were similar titles, but separate. 4) One inscription shows that a 'mother' was in charge of setting up a statue, this was a job typically overseen by the magistrates. Thus we have a mother acting in an official capacity.²⁶² The 'mothers' in *collegia* show us a different role of women in professional associations. To reiterate, 'mothers' only appear in associations that allowed women as standard members.²⁶³ These standard female members, who come from the group that is the focus of this chapter, are our priority. Unfortunately, we have little evidence for these women, so we must look to 'mothers' to better understand the treatment of ordinary women in the *collegia*. If 'mothers' were treated the same as the 'fathers' in the *collegia*, it stands to reason that ordinary women were treated the same as ordinary men. They likely received the same benefits as men in the *collegia*—financial support for burials, access to state-sponsored jobs, and furthering their career through social networking.²⁶⁴

When a craftswoman reached her mid-twenties her public economic life would become more complicated to manage as her childbearing years began and she became *matrona*. As a skilled mother, she had several options available to continue contributing to the family income.

²⁶⁰ Hemelrijk 2008, 137

²⁶¹ Membership lists. The order in which people were listed on these is a direct correlation with their position in the hierarchy. See Hemelrijk 2008.

²⁶² Hemelrijk 2008, 137-138

²⁶³ That is, members with no special honours of positions—ordinary women.

²⁶⁴ See page 50ff. for more on the benefits of being in a *collegia*

The first, and perhaps most 'ideal' in an elite sense, was to stay home to care for the child. In this instance, we would expect to see women contributing to the household income by spinning wool at home to reduce the cost of living. We know from literary sources that women did this when their family was in a desperate financial situation:

"At ego misera pernox et per diem lanificio nervos meos contorqueo, ut intra cellulam nostram saltem lucerna luceat."

"But wretched I, all night and all day, twisting my tendons for wool work, so that the lamps at least light within our little room."²⁶⁵

Apuleius' story indicates that spinning wool was not a very lucrative venture. However, in this case, it did mean the difference between a miserable existence, and perhaps no existence. Based on this story told by Apuleius, it would be unrealistic for a woman to stay home and perform domestic duties. In fact, if this story is accurate, a woman could only expect to earn enough to pay for lamp oil, a mere 1% of yearly spending.²⁶⁶ Clearly ordinary families had other methods of childcare for when their children were too young to be left unattended.

Perhaps a more likely scenario for ordinary women was to continue working and instead rely on childcare for their newborn children. Types of childcare have been categorised for studies in the developing world. Here, we will use two of the categories that best fit the needs for ordinary Romans, 1) Informal arrangements: This childcare involves children being cared for by a relative or non-relative. Informal arrangements are often unpaid and include mothers who take their children to work. 2) Family day care: This kind of childcare involves children being looked after outside

²⁶⁵ Apuleius *Met.* 9.5

²⁶⁶ See Appendix two, table 2.2

of their own home, likely by a non-relative, and consists of the care of several children.²⁶⁷

The most likely scenario in the Roman world was a mother either taking her child to work or leave her baby with another lactating woman. If a woman were to take her child to work, there would be little to no financial burden of having an infant.²⁶⁸ However, a skilled mother leaving her children with a neighbour or family member, to act as a wet nurse or babysitter did likely have financial ramifications, albeit minor. Roman women would have many social connections throughout their community, and using these relationships would be a way to maintain financial security. If two women had children at the same time, it is a reasonable assumption to make that one stayed home and looked after both babies, while the other went to work.²⁶⁹ Perhaps that wages were shared between the two of them, or a small fee was paid to the childminder. Regardless of the logistics of financing this scenario, it was surely a common occurrence amongst families who needed two incomes to survive.

When a craftswoman's children were approximately five to seven years old, it is not unreasonable to assume that a child could accompany her to work in a training capacity. Take, for example, Daphne,²⁷⁰ a hairdresser on the *Vicus Longus*. Daphne was commemorated with her (assumed) husband, Nerius, who was an *aurifex* on the *Vicus Longus*. It is possible that these two craftspeople who worked in separate fields would train their children at work. Nerius might have taught the boys and Daphne the girls.

²⁶⁷ Types of childcare outlined in Mehra et. al. 1992, 1

²⁶⁸ Of course, lactating women needed more calories in a day, see appendix four

²⁶⁹ It is a reasonable assumption because of the importance and reliance on informal social connections for working men. Women may have had similar connections, but instead of securing work, they could have been used to continue work. A network of this type would ensure the participation of women in the economic sphere, while still having children.

²⁷⁰ CIL 6.37469

Once a woman's children reached their early teens, her economic and social responsibilities changed once more. It is likely that her children were either in an apprenticeship, training within the family, or earning money in their own right. Therefore, she was no longer responsible for the daily care of her children, although, she would still be responsible for domestic tasks, such as gathering water and cleaning. At this point in her life, she could either have worked a normal working day, and performed her domestic duties at night, or worked a partial day and performed household duties for the remainder of the day. An Egyptian letter from two brothers and a female relative who were offering services as weavers outlines pay rates for a woman who does not appear to care for any children but is fully trained.²⁷¹ The letter reads:

“Ζήνωνι χαίρειν οἱ ὑφάνται. ἤκαμεν ὧδε ὥστε ἐργάζεσθαι. ὅπως ἂν τὸ δίκαιον λάβωμεν, δεῖ ἡμῖν δοθῆναι τοῦ ταλάντου, ὥστε πλῦναι καὶ διελεῖν, (δραχμήν) α καὶ ὕφαντρον τοῦ ἐνὸς ὀθονίου χαλ(κοῦ) (δραχμάς) γ καὶ ταῦτα ἡμῖν οὐχ ἱκανόν· ἐπιβάλλει ἐκάστωι ὀθονίωι σώματα γ, γυνὴ μία, καὶ ἐν ἡμέραις ἕξ ἐκτῆμνησθαι. εἰ μὴ σοι ταῦτα δοκεῖ, δίδου ἡμῖν ἐκάστωι (ὀβολόν) α γυναικὶ (ἡμιωβέλιον) δοὺς ἡμῖν ὑπηρήτην ἱκανόν εἰς τὰ ἐργαλεα (δραχμάς) ε (διώβολον) ταῦτα ἡμῖν ὑπολογούσιν. εὐτύχει.”

“To Zenon, greetings from the weavers. We have come here to work. So that we may receive our due, you need to give us one drachma for each talent-weight of washing and carding and three bronze drachmas for weaving each piece of linen cloth. Even this is not sufficient for us, (because) each piece requires three men and one woman six days to finish and cut off from the loom. If you do not accept these conditions give us each one and a half obols a day and the woman half and obol, and furnish

²⁷¹ I will therefore assume that she is middle aged.

us with an assistant able to help with the weaving equipment for five drachmas and two obols, to be deducted from our wages. Farewell."²⁷²

Based on the pay rates of the men compared to the woman here, we can see that there is a clear gender divide. It has been theorised that this discrepancy is due to the expectation that the woman would not work a full day, as she would have domestic duties to undertake.²⁷³ Although possible, there is nothing in the letters to suggest this. Therefore, we must accept the value for what it is.

Old age in Ancient Rome is not marked with the modern tradition of retirement. The majority of people living in the imperial period would not stop working until they died. Demographic studies suggest that it was uncommon for people to live to old age. The average life expectancy at birth was between twenty and thirty years. However, after the age of five, the life expectancy went up to approximately forty-five years. Similarly, if a person survived their childbearing years, they could expect to live to approximately fifty to sixty years old.²⁷⁴ Old age was not impossible in the Roman world, but amongst the lower classes of society, it was not common.²⁷⁵ In general, ancient populations were young, with approximately half of the population younger than twenty-five, and only about 7% of people over sixty.²⁷⁶

However, if a person was fortunate enough to reach a point in their life where they could stop working, it is expected that they would retreat from public life altogether.²⁷⁷ Old age was considered to be anywhere between forty-six and sixty years old.²⁷⁸ Although most ordinary women would work until they died, social expectations compelled her eldest son to look after her and her husband. A will from

²⁷² PSI 6.599. Trans. By Rowlandson 1998, 266

²⁷³ Rowlandson 1998, 266

²⁷⁴ Coale et. al. 1983, 43. Table 1, so called 'model west'

²⁷⁵ Parkin & Pomeroy 2007, 44

²⁷⁶ Parkin & Pomeroy 2007, 45

²⁷⁷ Harlow & Laurence 2002, 117-118

²⁷⁸ Ibid

Egypt demonstrates how this expectation could be enforced. Orseus and his wife, Taorseus, had a detailed will drawn up to ensure they were looked after in their old age. In this document, Orseus is ensuring that he and Taorseus were provided with grain and money for clothes and other food. This demonstrates that some women did 'retire', in a modern sense of the word, although she most likely still performed domestic duties until she died.²⁷⁹

Women's Income

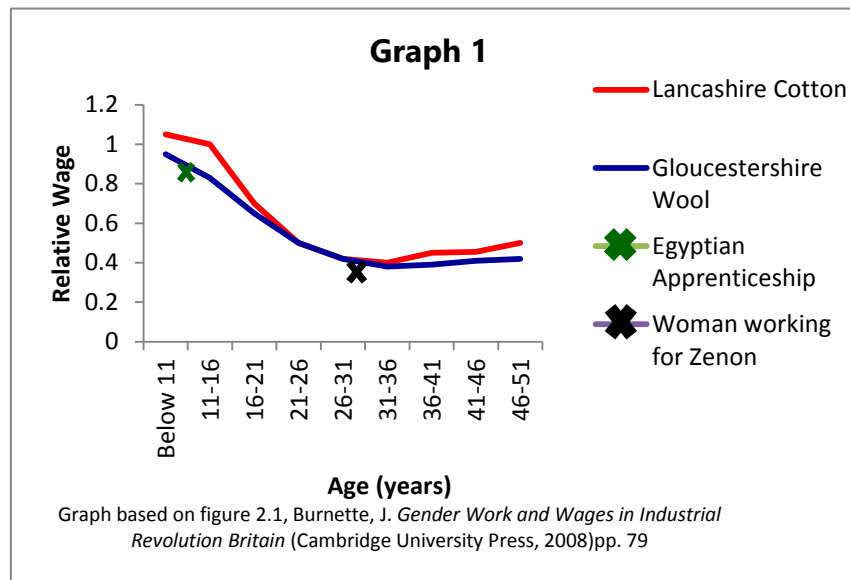
It is clear that the notion of women not working in ancient Rome cannot be true. Women made a vital contribution to the family income, without working women, many families would not survive, even on a 'bare bones' subsistence. One thing that is not clear is how much women could expect to earn. Scattered evidence gives us some idea of income, but the majority is not presented in a useful context for us to make comparisons with male incomes.²⁸⁰ However, the compensation discussed in this chapter demonstrates that women were paid less than men in similar positions. In fact, the girl in appendix three earning 11 to 14% less than the boy fits with historical trends, as does the female relative working with men in her family earning 66% less than her male counterparts.

In nineteenth-century England, there is a gender pay gap in the textile industry that aligns with both the gap that we saw in our weaving contract and the rate for the unnamed woman working for Zenon in the price negotiations letter. Income trends in England suggest that the pay gap starts small when children work, but as workers get older, the pay gap increases. Based on female versus male pay rates from industrial English textile factories, girls below 11 years old were paid more or less the same as boys the same age. However, after the age of 16, the pay gap

²⁷⁹ P.Mich 321

²⁸⁰ This is necessary so we can estimate average income for different fields.

begins to increase until a woman was 30 years. By this age, women are earning approximately 60-65% less than their male counterparts. Our two comparable income figures, although from a small sample, fit into this trend, as shown in this graph:



Based on this statistical analysis, we have an understanding of the income levels of a skilled craftswoman, as compared to a skilled craftsman. Income figures from Diocletian's price edict show that a skilled workers could expect to earn up to 50 *denarii* per day. Based on the trends derived from historical comparisons, a woman over thirty could expect to make approximately 15 to 20 *denarii* per day.

Family Income

Having assessed the contribution to the household income by both men and women, we can now look to the survival of a family throughout the course of the family's existence. A woman's income varied throughout her life, as did the financial needs of the family unit, based on the dependant's needs. Needs are predominantly based on energy requirements. Appendix four outlines the cost of a family at

different points throughout its existence and compares the needs to the maximum possible income.²⁸¹

Shifting calorie requirements for a family is an important aspect when calculating the relative worth of family incomes. To account for this, modern calorie requirements for both growing children and adults have been used.²⁸² According to the Institute of Medicine, children between two to three years old need 1000 calories.²⁸³ After this age, the intake requirements change based on gender, so an average intake has been calculated for children in general. For four to six-year-olds, an intake of 1500 calories is recommended, with an increase to 1700 calories for a nine to thirteen-year-olds. Additionally, during the first two years of a baby's life, we can assume that the majority of calorie intake came from the mother, so a 'breastfeeding' allowance of 500 calories has been added. After the age of fourteen, most children would be earning a living themselves; therefore, after this age, they are not listed as dependants. Elderly dependants had calorie requirements of approximately 1800 calories. These shifting requirements show the burden of dependants at different ages. As we can see in appendix four, costs grew exponentially the older dependants were. For example, a family living with two dependants aged between two and three years old cost approximately 13728 *denarii* to support on subsistence. This amount increased by 3660 *denarii* to 17388 *denarii* for dependants aged between nine and thirteen years old.²⁸⁴

Appendix four outlines maximum earning potential for families that had both seasonal male labourers and labourers with a steady income. Women's wages have

²⁸¹ See Appendix four

²⁸² I have used the calorie intake for sedentary children. The children in the study had an average BMI for 2002 whereas the children in Rome would likely be smaller, and thus weigh less. Therefore, the calorie requirements for a sedentary child will help to counteract this difference

²⁸³ The information from this study, accessed 16/08/17:

https://www.cnpp.usda.gov/sites/default/files/myplate_miplato/table2.pdf

²⁸⁴ See appendix four for the cost to support the family with different requirements.

been estimated based on graph one—the wages are then combined and compared with the cost of living to assess the likelihood of an ordinary Roman family buying the subsistence basket, outlined in appendix two. We can see that during the years when a family had to support dependants aged between four to thirteen years old, the family would struggle to bring in enough money. However, the deficit shown in the table is not overall, only for specific periods, so there was the possibility of the family saving money for these times of hardship. Alternatively, the deficit is not greater than would be required for ‘bare bones’ subsistence, and the family may well survive on a more simplistic diet during this period. Appendix four illustrates how difficult living would be for ordinary Romans who did not earn the maximum income. At times when families struggled, we would see a rise in unskilled labour and other methods of making money.²⁸⁵

Conclusion

Throughout this chapter, we have seen examples of women’s economic contribution to her family income. This income was vital; survival was impossible in urban centres without it. Although we see gender bias against women in literary texts, this likely does not affect a woman’s ability to gain employment. Nor can we expect to see employment opportunities change when women had children. However, we do see a suggestion of *matrona* earning less money than men. Although this is an area of study that relies heavily on the comparative material, women making less money than men appears to be an inescapable trend in human working environments. We clearly do not know when wages dropped, why they dropped, or even if they did consistently drop, or if our data points are an anomaly. Certainly, this is an area that requires more attention and could be undertaken as part of a larger project, but for the purposes of this thesis, the mere fact that women

²⁸⁵ Begging, prostitution and gambling to name a few.

did contribute to the family income is enough to understand how families survived in the Roman urban environment.

Conclusion:

This study set out to examine the lives of ordinary Roman families in urban centres. Particularly, how Romans were able to survive financially, and how their social lives impacted their financial reality. In essence, this thesis used economic history and financial realities as a way to assess daily realities and social history. The study of families from an economic point of view is not new, but by combining both economic and social history, we have been able to draw conclusions about the family that would otherwise be left unanswered when only looking at one aspect of family life. Most significantly, we can understand motivations derived from the family's financial position to understand how individuals may have conducted their day to day lives.

To understand an ordinary Roman family, and how they lived, we first had to establish what was required to live in an urban centre. Requirements to live were determined by secondary scholarship completed by economic historians, most notably, Robert Allen. Allen compiled a 'basket' of commodities needed to survive at both subsistence level, and a 'bare bones' subsistence level. The costs of Allen's baskets were estimated using Diocletian's Price Edict from 301 C.E. Although the use of Allen's work cause issues within our study; a price could be assigned to the survival of an ordinary family, which could then be applied to real families in urban centres.

After a detailed cost of living was established, the discussion could then turn to realities of men's working life in Rome. To do this, we had to look at financial realities of two different crafts—bakers and builders—then apply our findings to social realities for working men, in an attempt to understand how social relationships affected financial stability and work opportunities. It became apparent at the conclusion of our discussion on men that survival from one income was not possible

for the majority of urban Roman families. We had to turn to other methods of revenue for the family—women.

Women presented a more complicated picture of working life in urban Rome. Much of this section of the thesis was theoretical due to the scare nature of the evidence. However, by this point, we had established the motivation for working women—survival. Evidence for skilled working women was presented through a life course approach, which enabled us to assess methods of training, and how social expectations, such as marriage and children, affected a woman's ability to work and earn money for her family. After evidence was presented for working women, we could conclude that the majority of skilled families earning the maximum potential income could survive in urban Rome, even if at times they survived on a 'bare bones' subsistence.

The structure of this thesis enabled us to better assess motivations for working families. Without seeing the necessity for women to work it would be easy to dismiss—as others have before me— their involvement in the economic sphere.²⁸⁶ The evidence for their participation is thin, and many would argue that this is because of their absence in the workforce. However, the first two chapters of this study made it abundantly clear that if families wished to survive, most women had no choice but to work. This may have defied the elite expectations that were often forced upon them through law, but as we saw with the attitudes of working men, elite expectations rarely reflected reality.

The battle of expectations versus reality is ever present in almost all social, historical topics, but by using financial motivations, we were able to justify reality, even with scarce source material. Of course, it has become common knowledge that men did not adhere the elite expectations and sold their manual labour, but this step needs to become common practice for women also.

²⁸⁶ Allen 2009, 339, for example

One of the major findings of this study was the miscalculations from Allen's work on living costs. Allen's methodology is detailed and does provide a good framework for understanding the family economy. Unfortunately, however, his calculations are mathematically incorrect. This resulted in Allen's total cost of living being too low which had a run on effect of Allen being able to justify why women's incomes were excluded, as it was not essential to survival according to Allen's outcome.²⁸⁷ To rectify Allen's mistakes, a complete recalculation had to be undertaken to fully understand the true cost of living in the Roman Empire.²⁸⁸ These miscalculations highlighted a potential problem in many classical economic studies, an unwarranted trust in calculations. The miscalculated table in Allen was not isolated to one paper in his arsenal, but many across his career.²⁸⁹ Additionally, his findings have been reused by other ancient economists in an attempt to understand the cost of living in the Empire.²⁹⁰ Although it is tempting to trust calculations, authors using other scholars' work for their own purposes need to establish their reliability, in the same way that any other information would be verified.

Through this study, we have seen a snapshot into the daily life of an ordinary skilled family living in an urban centre in the Roman Empire. However, this snapshot is small, and due to the limited scope of this study, many questions are left unanswered that ought to be looked at in future research. Most of the questions are in relations to working women and children: By knowing that women could, and did work, would this affect their value at birth? Are our sources that lead us to believe that girls were not desired perhaps skewed by elite perceptions? Perhaps our assumptions of girls were solidified by the belief that they were economically unviable. A study on girls would help us to understand women's place in not only the workforce but also in society. Although women are affected by elite expectations

²⁸⁷ See appendix two

²⁸⁸ Ibid

²⁸⁹ Allen 2001

²⁹⁰ Scheidel 2010, 427; Harris 2011, 46

through law, were these laws upheld for the majority of women, or were many of them isolated to the elite.

Another question that ought to be studied further is skilled woman's pay rates: Why did working women get paid less than men? Was it purely due to perceived complications at work during their childbearing years, or did other stigmas come into play? If so, what were these stigmas? These questions about women and their place in the work force will only lead to a greater understanding of Roman history in general. By accepting that elite views on women were isolated to the elite and them alone, we open up more possibilities to be explored.

The goal of this study was to investigate how families survived in urban centres in the Roman Empire. Based on our calculations, we can see that the only possible way for a skilled family to survive was to utilise two income earners, not just one. Without the income of women, families would not survive and eventually perish. The data discussed in this thesis shows us not only the economic realities of working families but how the economic position of people hindered or propelled their social lives. The use of economic methodology to understand daily realities of workers enables a more complex view of society as a whole, and individual life specifically. This study outlined how individuals were seen and treated within the public economic sphere, and how this enabled, or disabled, their ability to contribute to the family income.

Appendix one:

When dealing with different regions and time periods, it is important to have consistent and reliable conversions rates, as the currencies and measures change. The following list has mostly been gathered from Dominic Rathbone's work.²⁹¹

Conversion rates used:

1 Roman *libra* = 323grams

1 standard *modius* = 8.63L, holds 6.8kg of Italian wheat

1 *sextarius* = 1.9L²⁹²

1 *modius castrensis* = 1.5 standard *modii*

1 standard Roman period *artaba* = 4.5 *modii*

16 *asses* = 4 *sesterces* = 1 *denarius*

1 *aureus* = 25 *denarii*

1 *denarius* = 4 *drachma*

1 *libra* of silver = 6000 *denarii* (0.053g silver/*denarius*)

1 *libra* of gold = 72000 *denarii*

²⁹¹ Rathbone 2009, 301

²⁹² Pomeroy & Parkin 2007, appendix C

Appendix two:

The following tables demonstrate my calculations to rectify issues found in Allen 2009. The first table (2.1) is a direct copy of table 16.2 from Allen's 2009 chapter "How Prosperous were the Romans?" In this table, Allen has compared the cost of living across three different time periods in European history. To effectively compare the outcomes, Allen converted all historic units for measuring food and necessities into modern equivalents and expressed all the prices in grams of silver per unit.

Allen states that he reached the total grams of silver for each time period by multiplying the quantity per person per year, by the price in grams of silver per unit. For example, to calculate the total cost of bread per person per year in Diocletian Rome, Allen multiplies 182(kg) by 0.394(g. of silver/kg), which equals 71.708 grams of silver per person per year. However, when applying this logic through the whole table and taking a sum total, we get a value of 231.929 grams of silver per person per year, not 163.921 grams as stated by Allen. To illustrate these apparent errors, I have recreated Allen's tables:

Table 2.1: Direct copy of Allen 2009, table 16.2

	Quantity per person per year	Strasbourg price g. silver per unit	Naples price g. silver per unit	Diocletian price g. silver per unit
Bread	182 kg	0.693	0.79	0.394
Beans/peas	52l	0.477	0.479	0.408
Meat	26kg	2.213	2.571	1.29
Olive Oil	5.2l	7.545	2.505	1.16
Cheese	5.2kg	2.843	2.571	1.29
Eggs	52 each	0.01	0.127	0.053
Wine	68.25l	0.965	0.3	0.774
Soap	2.6kg	2.88	2.029	1.16
Linen	5 m	4.369	4.854	4.031
Candles	2.6kg	4.98	1.405	1.16
Lamp Oil	2.6kg	7.545	2.505	1.16
Fuel	5 M BTU	4.164	5.452	1.586
Total		416.3583	355.925	163.921

Table 2.2: Recalculation of Allen's table 16.2

	Quantity per person per year	Diocletian price g. silver per unit (Allen's Outcome)	Quantity Multiplied by price(grams of silver)
Bread	182 kg	0.394	71.7
Beans/peas	52L	0.408	21.2
Meat	26kg	1.29	33.5
Olive Oil	5.2L	1.16	6.03
Cheese	5.2kg	1.29	6.71
Eggs	52 each	0.053	2.76
Wine	68.25L	0.774	52.8
Soap	2.6kg	1.16	3.02
Linen	3.429m ² *	4.031	13.8
Candles	2.6kg	1.16	3.02
Lamp Oil	2.6kg	1.16	3.02
Fuel	8.39M BTU*	1.586	13.3
Total		163.921	231

*These are different amounts than what was used in Allen table 16.2, a full explanation is detailed on page 95-97

Upon first inspection of Allen's table, a number of mathematical inconsistencies stood out.²⁹³ After rechecking the calculations, it became apparent that several of the sums have been calculated incorrectly. Table 2.2 is a recalculation of Allen's original table. It is clear from these two tables that the totals are inconsistent, with a significant discrepancy of 67.998grams of silver per year in the Diocletian column.²⁹⁴

Using Microsoft Excel for my calculations, I was able to eliminate the calculation error and get an accurate representation of the values. The total for Diocletian's Rome is inconsistent with the recalculated table by 41.4%. This demonstrates that

²⁹³ The totals are shown with 4 decimal places, whereas the data in the table is shown with 3 decimal places. Although this does not make the table incorrect, it was enough to cause suspicion.

²⁹⁴ It should be noted that recalculations have only been done for the Diocletian column, as this is the relevant information for this thesis.

either Allen's calculation approach was modified for this column or there is a calculation error in his table.

Table 2.3: Subsistence basket in Roman values

	Quantity per person per year	Quantity per person Roman Equivalent units	Roman Units	Price <i>denarii</i> per unit (roman)	Total price per year in <i>Denarii</i>	Diocletian Total (grams of silver)
Bread	182kg	563.5	Roman pounds	2.40	1353	71.7
Beans/peas	52L	6.03	Std Modius	66.39	400	21.2
Meat	26kg	80.5	Roman pound	7.86	633	33.5
Olive Oil	5.2L	9.63	Sextarius	11.82	114	6.03
Cheese	5.2kg	16.1	Roman pounds	7.86	127	6.71
Eggs	52 each	52.0	Each	1.00	52.0	2.76
Wine	68.25L	126.4	Sextarius	7.89	997	52.8
Soap	2.6kg	8.05	Roman Pound	7.07	56.9	3.02
Linen	3.429m ²	39.1	Roman Feet Squared	6.67	261	13.8
Candles	2.6kg	8.05	Roman Pound	7.07	56.9	3.02
Lamp Oil	2.6L	4.82	Sextarius	11.82	56.9	3.02
Fuel	5M BTU	1982.8	Roman pound	0.127	251	13.3
					4358	231

To further verify my totals, I used Roman Units of measure and currency to recreate the table (table 2.3). Choosing the silver conversion rate proved to be difficult as Allen had used two conflicting silver conversions. Allen stated on page 331 that a *denarius* had 0.032grams of pure silver, but used a conversion rate of 0.053grams of silver for the conversions in his table. This is a simple mistake, but for his calculations for fuel costs, Allen notes his conversion rate from Roman pounds to M BTU on page 336. In his calculation, he uses 0.032grams of silver to work out the conversion, this conflicted with the rest of his conversions in the table, and therefore I have corrected this inconsistency in my calculations and used 0.053 grams for the fuel costs.²⁹⁵ The amount of fuel required was 1983 Roman pounds, or 8.39M BTU, taking the total cost of fuel to 251 *denarii*.

²⁹⁵ As stated by Rathbone 2009, 301. Using this silver measurement, I was able to match all of the prices back to the price edict.

A further issue that arose when redoing the table was to do with the linen. In the case of the linen, Allen lists five meters as the amount used per year, but linen is measured in two dimensions, only stating the length leaves the reader to imply a width. In Diocletian's price edict, linen is measured in Roman feet squared, therefore, to make the modern and ancient measures interchangeable, I had to convert the modern unit into meters squared. By utilising the width dimension stated in Allen's article I was able to convert five meters to 3.429m².

Table 2.4: Recalculation of Allen's Bare bones table

	Quantity per person per year	Quantity per person Roman Equivalent units	Roman Unit	Diocletian Price per Roman Unit in <i>denarii</i>	Total (<i>denarii</i>)
Wheat	172kg	20	Std Modius	66.7	1330
Beans	20kg	2.32	Std Modius	66.4	154
Meat	5kg	15.5	Roman Pounds	7.86	122
Olive Oil	5L	9.26	Sextarius	11.8	109
Soap	1.3kg	4.02	Roman Pounds	7.07	28.5
Linen	2.057m ²	23.4	Roman Feet squared	6.67	156
Candles	1.3kg	4.02	Roman Pounds	7.07	28.5
Lamp Oil	1.3L	2.41	Sextarius	11.8	28.5
Fuel	2M BTU	793	Roman Pounds	0.127	101
Total					2057

Table 2.4 is a calculation of the amounts of food put forward by Allen for a 'bare bones' subsistence. Allen does not use a chart to show the method for arriving at the cost for this basket in his chapter, so I have used the amounts put forward to calculate a cost. I used the same methods as the previous tables to come to a total yearly cost of 2057 *denarii* per person per year.

The miscalculations discussed above demonstrate an issue with the use of mathematical data in classical scholarship. Notably, no one appears to have checked his calculations to ensure accuracy. As Allen's study is featured in an edited edition, this mistake was not corrected by at least two other scholars and external reviewers.

Walter Scheidel found one inaccuracy in Allen's income analysis—his use of grain as an income far exceeded the likely allowance for a worker—but in his work to correct the values, also made errors, which were once more, unnoticed.²⁹⁶ These errors suggest that people rely too heavily on the apparent accuracy of numbers, and fail to verify them.

Furthermore, Allen failed to express the methods of his calculations accurately. After working through these tables, I am still unsure where the error occurred, as there is not detailed working included in his chapter, only a short summary. This makes it difficult for others to verify the table presented. I was unable to establish if he had different answers to mine because of an extra step that he did not state or a figure that has been used to increase accuracy. None of this is stated, and therefore we are left to trust his figures. To ensure that this does not happen with the tables above, I have shown my working in detail so that others can follow the tables and easily verify the values.

²⁹⁶ Scheidel 2008, n. 17: Notably, he did not convert the amount of grain from standard *modius* to *castrensis modius*.

Appendix three:

Below is a comparison of two apprenticeship contracts from Roman Egypt:

Table 3.1: Comparison of two contracts

	P.Oxy. 275	SB XVIII 13305
	Free Male	Free Female
Date	66C.E	271C.E
Payment	5 <i>drachmae</i> per month 60 <i>drachmae</i> total (238 <i>drachmae</i> when adjusted for inflation)	60 <i>drachmae</i> to be paid at the end of contract
Bonus	12 <i>drachmae</i> for clothes to be paid at the end of contract (54 <i>drachmae</i> when adjusted for inflation)	
Illness	Any days off must be worked at the end of apprenticeship period or must pay 1 <i>drachmae</i> per day missed	Any days off must be worked at the end of apprenticeship period or must pay 1 <i>drachmae</i> per day missed
Expenses	To be fed and clothed by his father. Taxes to be paid by his father	To be fed and clothed by 'her' (amounting to approximately 150-200 <i>drachmae</i>)
Conditions	The boy has to complete the apprenticeship. If he does not, a fine of 100 <i>drachmae</i> is payable to both the master and the treasury. If he does not learn the craft by the end of the contract, the master will be fined the same	200 <i>drachmae</i> to be paid by which ever party does not withhold the agreement

The first thing to note for these two contracts is the difference in the dates. To counteract this, I have adjusted the values for an inflation rate of 0.7%, over 205 years.

Secondly, I had to estimate the cost of living for an approximately twelve-year-old girl in Roman Egypt. To do this I used the calculations from Scheidel 2006, bringing the cost of living to 150 to 200 *drachmae*.

Appendix four:

Below is a table outlining income requirements (both bare bones and standard subsistence) for a family at different stages in its lifecycle.

Table 4.1: Income requirements (in *denarii*)

	Subsistence	Barebones	Seasonal Male	Constant Male	Constant Female	Seasonal Savings on subsistence	Constant Savings on subsistence
Two Adults	9152	4320	10100	13700	8220	9168	12768
Two infants	10071	4749	10100	13700	6165	6194	9794
Two dependants 2-3y/o	13728	6480	10100	13700	5480	1852	5452
Two dependants 4-8y/o	16016	7560	10100	13700	4521	-1395	2205
Two dependants 9-13y/o	17388	8208	10100	13700	4521	-2767	833
Two elderly dependants	17846	8424	10100	13700	4521	-3225	375

Here I am demonstrating the maximum earning potential for a two-income household. The 'subsistence' and 'bare bones' columns relate the cost of living of all members of the family on the different baskets discussed in appendix two. 'Seasonal Male' relates to the income of a worker who works part of the year in skilled labour, and part in unskilled labour, such as builders. 'Constant male' is the maximum income for a worker who works 250 days per year in skilled employment, such as bakers. 'Female income' is based on the theorised variations of a woman's earnings in chapter three. The 'Constant savings' and 'seasonal savings' relates to money left over after paying for the full 'subsistence' basket for the two different work categories.

The different dependants account for the varying costs of supporting dependants at different ages. The costs listed are for two adults and two dependents at the specified age. Through this, we can see what family makeup was more susceptible to poverty, and needing to live on 'bare bones' subsistence.

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