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Uncertainty and exploitation in history

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Abstract — The paper builds on the Marxist concept of exploitation to explore the meaning of the Post Keynesian notion of uncertainty. Uncertainty is mediated by institutions and is distributed unevenly among different social groups. As different historical social formations entail different institutional structures, the distribution and nature of uncertainty will also differ. The configurations between class relations and uncertainty are analyzed for the capitalist, feudal and slave modes of production. It is demonstrated that modes of production do not only imply specific exploitative relations but also different relative distributions of uncertainty amongst classes. The joining of Marxian and Post Keynesian approaches allows for a richer understanding of exploitive relations and illuminates the full societal impact of uncertainty. It is shown that only in capitalism is the exploited class exposed to a substantial degree of economic uncertainty.

Keywords: fundamental uncertainty, exploitation, mode of production, Post Keynesian economics, Marxian economics

JEL-Classification: B50; B51; N33; N34

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Introduction

Uncertainty is a pervasive feature in monetary production economies. Different social groups experience uncertainty in different ways. An investor may be worried about the future revenue streams of alternative investment projects. A worker may worry about having a job next year. Obviously the effects of uncertainty are mediated and shaped by the particular institutional setting of a society. One of the basic building blocks of these institutional structures are class structures. Therefore the question arises how class relations and the distribution of uncertainty are related.

Uncertainty is a key category in (at least some versions of) Post Keynesian theory. The concept of (fundamental) uncertainty highlights the challenges individuals face in making decisions, which are due to the historical openness of social and economic processes. Similar to Marxists, some Post Keynesians use class analysis in macroeconomic analysis.[1] However, Marxian economics is unique in combining class analysis with the notion of exploitation. Society, it is argued, is composed of different classes that fulfill different functions in the production process. Most modes of production are based on exploitation: there exists a class that is performing surplus labor and another one that is appropriating this surplus labor.

This paper explores the boundaries and overlaps of these key concepts of Post Keynesian and

[1] Many Post Keynesians prefer class analysis to methodological individualism, in particular Post Keynesian growth theory is based on class analysis. Classes are usually defined as income classes (e.g. Robinson 1965, chapter 1, Kalecki 1971). Class struggle or conflict is consequently regarded as a conflict over income with important feedbacks on the accumulation process (Robinson 1978, 17), but is not located at the level of production.

Marxian economics. As the effects of uncertainty are mediated by specific institutions, a deeper understanding of the significance of the concepts involved requires a historical approach. Rather than a general discussion in abstract terms, the question what the relation between uncertainty and the class structures is, will be investigated at the more specific level of different modes of production. The interrelation between exploitation and the distribution and nature of uncertainty will be analyzed for the capitalist, feudal and slave modes of production.

The presumption of this paper is that different schools in heterodox economics are potentially complementary and could benefit from interaction and cross fertilization. The cross fertilization explored here is between Post Keynesian and Marxian concepts. In fact, both strands of economic thought share a similar historical (path-depended) approach towards economic analysis (Setterfield 2003, 371ff.). Similarly both analyze the capitalist system as a monetary production economy. The aim here is to investigate how these common methodological elements can be transformed into a fruitful analysis on a more concrete level. To be clear, this paper does not offer a Grand Synthesis. In particular little effort is made, at this stage, to address the potential methodological and theoretical problems that the use of concepts rooted in different theoretical approaches raise. Rather we wish to illustrate that cross fertilization, can be a fruitful enterprise that yields genuine insights.

A clarification is necessary at the outset. We concentrate on stylized modes of production rather than on the description of existing societies. The configurations are analyzed for three modes of production: capitalism, feudalism and slavery. By design these modes of production eliminate much of the actual historical complexity to clarify key features of an economic and social system. These stylizations do have specific historical epochs in the background on which generalizations are based. It will therefore be helpful to make these explicit. In the analysis of capitalism we follow standard Marxian analysis and thus adopt a focus on the capitalist system of the 19^{th} century. The concept of feudalism is used with reference to the 10^{th} to 12^{th} century and the notion of slavery refers to the 1^{st} and 2^{nd} century Roman Empire. Overall the modes of production analyzed do not claim historical accuracy, but are to be understood as ideal types.

The paper is organized as follows. Section 2 presents the basic concepts of uncertainty and exploitation and their theoretical foundation. Section 3 analyzes uncertainty and exploitation in the capitalist mode of production. Section 4 discusses the feudal and section 5 the slave mode of production. Section 6 gives a comparison of the configurations across modes of production and concludes.

Uncertainty, exploitation, and modes of production

Work has been not distributed evenly among different classes in most of human history. Some classes live of the surplus labor of others. The specific organization of exploitative class relations has historically taken on different forms that are described as modes of production. This is the core of Marxian economic analysis. We shall first clarify the notion of exploitation and then the notion of the mode of production. In doing so, the analysis will focus on fundamental class positions. However, no simple or dichotomous class analysis is advocated. Therefore some intermediate and neutral class positions are also discussed.

In defining exploitation Wright (1997) argues that exploitation involves “antagonistic interdependency of material interests”. He defines exploitation by means of the inverse interdependent welfare principle, the exclusion principle and the appropriation principle:

- “the welfare of the exploiter is at the expense of the exploited”
- “exclusion of the exploited from access to … certain important productive resources”
- “appropriation of the fruits of labor of the exploited by those who control the relevant productive resources” (Wright 1997, 10)

The argument proposed in this paper does not rest on the labor theory of value, which is often used as the foundation of a theory of exploitation. Rather it is based on unequal distributions of work and consumption possibilities. Typically exploitative relations also involve some form of command, and thus power, relations.

The mode of production is defined as “the specific economic form in which the owner of the means of production extracts unpaid surplus labor from the direct producers” (Jessop 1990, 289). This concept is used here to describe the structure of (Western) societies, in particular the social division of labor and income. A capitalist, a feudal and a slave mode of production will be distinguished. These are defined with respect to the fundamental relation of exploitation and the corresponding class positions. Actual historical social formations are of course more complex than such a bipolar class analysis would suggest. A specific society will be a social formation comprising more than one mode of production, with one of them typically being dominant. Moreover, various intermediate classes as well as non-class groups may play an important role for political or economic reasons.[2] In the analysis some intermediate class positions will be discussed. This is a difficult task, however. While there is a substantial literature on intermediate class positions for the capitalist mode of production (Wright 1989), there is hardly any conceptual analysis of intermediate class positions for pre-capitalist modes of production. We speak of intermediate class positions when a certain group

[2] In a recent analysis of the reasons for the decline of the middle class Pressman (2007) highlights the importance of the middle class for the political and economic reproduction of capitalist economies. His notion of the middle class is descriptive and not based on a theory of the production process. However, his conclusion that the middle class plays a vital role is consistent with the argument presented in this paper.

performs functions of the exploiting as well as the exploited class. Neutral class positions (with respect to a given mode of production) refer to positions that are not related to the dominant fundamental class process. They may be outside exploitative relations[3] (such as independent producers) or belong to other class structures that play a subordinate role.

In the debates on Marxist theory of history there is a tension between those emphasizing the determinant role of the development of the means of production (e.g. Cohen 1979) and those highlighting the role of class struggle (often associated with the British school of Marxist historians, e.g. Thompson 1966). The approach taken here is closer in spirit to the latter. As the aim of this paper is (static) comparisons of uncertainty associated with different class positions in various modes of production, the disagreement on the relative weight of different technological and social factors as determinants of historical outcomes is of little significance for our argument. Still, class relations will play an important part in our argument, the forces of production will not.

The usefulness of the Marxian approach is that it conceptualizes societies as consisting of various classes defined by their positions and functions with respect to the production process. Thus the term mode of production is used to describe stylized social formations in history. No claim of historical accuracy is made. Rather the interesting, and novel, question investigated is what the implication of these historical formations on the distribution of uncertainty is.

Fundamental uncertainty is often cited as core concept in defining Post Keynesian economics.[4] Fundamental uncertainty is a result of the fact that economic processes in the real

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[3] "Outside" here refers to the economic structure. These groups however may have alliances and therefore be politically or ideologically involved in the reproduction of the fundamental class process.

[4] A frequent distinction that goes back to Hamouda and Harcourt (1988) identifies three distinct groups within

world do not follow ergodic patterns. Under such circumstances no probability distribution for outcomes can be given. This inability to give probability distributions does not merely reflect the limited knowledge or information processing abilities of humans but is a reflection of the openness of the historical process in which human societies and economies evolve. “Uncertainty in general refers to situations where probability cannot be measured. This immeasurability arises from the nature of the real world” (Dow 1995, 118).

To clarify the concept of uncertainty, let us quote a well known passage from Keynes:

"The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention, or the position of private wealth-owners in the social system in 1970. About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know. Nevertheless, the necessity for action and for decision compels us as practical men to do our best to overlook this awkward fact and to behave exactly as we should if we had behind us a good Benthamite calculation of a series of prospective advantages and disadvantages, each multiplied by its appropriate probability, waiting to be summed." Keynes 1937, 214

Keynes did not claim that all relevant processes were subject to fundamental uncertainty. Rather he cites a game of roulette as a counterexample. Moreover “the expectation of life is only slightly uncertain. Even the weather is only moderately uncertain.” (Keynes 1937, 214). Keynes viewed the world as consisting of different degrees of uncertainty rather than in a dichotomy of uncertainty and probabilistic certainty (Keynes 1973b, Chap. 3; see also Carabelli 1995).

In Post Keynesian Economics several important implications of the concept of uncertainty

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Post Keynesian economics, which are commonly referred to as Kaleckians, Sraffians and Fundamentalist Keynesians. The latter approach is often associated with its emphasis on uncertainty and, in consequence, its distinct role of money (Gerrard 2003).

have been derived. Firstly, uncertainty is the basis for liquidity preference. Investors keep liquid assets despite their low return to maintain flexibility (Davidson 1994, Chap 6). Secondly, some Post Keynesians have derived a privilege of short run analysis from uncertainty (Vickers 1993). Thirdly, the possibility of structural breaks and sudden shifts in behavior has been highlighted (Lawson 1985, Keynes 1973, 315f). Fourthly, the rejection of ergodicity necessities open system analysis in historical time, which has far-reaching methodological implications (Lawson 1985).

Keynes did not only conclude from the existence of fundamental uncertainty that people would be caught in paralysis or random voluntarism, but suggested that they would adopt and submit to conventions of behavior, rules of thumb and the like, not the least because they could not bear admitting that they "simply don't know" what the consequences of their actions will be. There are important aspects of the concept that remain open to debate. One may distinguish between proponents of fundamental uncertainty and proponents of conditional uncertainty (Ramskogler 2006, Chap. 1). The former emphasize the unpredictable nature of the economic environment and (implicitly) maintain that uncertainty is ontologically constant. From this they derive a predominant role for liquidity preference as a mean to cope with uncertainty (e.g. Davidson 2002, Dunn 2001). This approach can be contrasted with a group of authors who argue that conventionally and institutionally conditioned decision-making can lead to temporal (conditional) stability (Crotty 1994, Dymsik 1994). In this approach the institutional setting determines the (behavioral) impact of uncertainty. We build on the latter group in asserting that institutions and institutional behavior can affect the extent of uncertainty (without being able to annihilate it) but go further in arguing that uncertainty can not only be reduced but also *distributed* amongst social groups in a given societal formation.

The issue of the distribution of uncertainty has received little attention in the Post Keynesian debate so far. Indeed, most Post Keynesian arguments only discuss the *investor's* experience of uncertainty, and thus imply that worker do not face uncertainty. Nor have Post Keynesians explored what, if any, the role of uncertainty is in pre-capitalist societies. While Marxists have a rich analysis of historical class structures, they have so far not explored the concept of uncertainty.

To adapt the notion of uncertainty to the historical context, we will distinguish between different causes of uncertainty and spheres were its impact is felt. *Systemic* uncertainty refers to uncertainty arising from a specific social and economic configuration. For example, in medieval Europe, where the ruling class is a caste of warriors, this includes uncertainty due to military confrontations. It is counter posed to *natural* uncertainty that refers to natural phenomena like bad weather that may have devastating effects in agrarian economies. Systemic and natural uncertainty refer to the *causes* of uncertainty. Their effects will be mediated by institutions and differ across historical social formations. These effects may be located at the social sphere, among which we will highlight the economic and personal ones. *Economic* uncertainty refers to economic, often macroeconomic, phenomena and thus to the economic welfare of people (typically their income streams). *Personal* uncertainty refers to uncertainty regarding personal wellbeing (e.g. a person's health). Of course both of these spheres or fields of impact of an uncertain event are interdependent. An uncertain economic event can affect the personal wellbeing of a person and vice versa (e.g. an sick person may not able to generate income). In the following the key interest is in the *relative* level of *economic* uncertainty. The analysis of pre-capitalist modes of production, where economic processes are embedded in different forms, does require a consideration of broader aspects uncertainty.

On the conceptual level this paper proceeds along two novel routes. First, we assert that uncertainty can be distributed unevenly among different groups in society. Stockhammer

(2007) has argued that the institutional setting determines the distribution of uncertainty. The types of uncertain outcomes faced by economic agents differ *in quality* with their respective backgrounds. Workers and capitalists, men and women, native workers and migrant workers, skilled and unskilled workers confront different sets of choices and, consequently, different qualities of uncertainty. In a capitalist society workers experience uncertainty in the form of job insecurity (Stockhammer 2007). In this paper, this argument is applied to various historical formations.

Second, we take a historical rather than an epistemological approach to uncertainty. As institutions play a crucial role in mediating the effects of uncertainty, and the institutional structure is historically contingent, a historically specific analysis is required for a proper understanding of uncertainty. We investigate how uncertainty is distributed in different social formations in history. To structure the analysis we rely on one of the basic organizing principles of societies: their class structures. Thus we build on the Marxist concepts of exploitation and mode of production to explore the meaning and role of a Post Keynesian concept in different historical configurations.

Distribution of uncertainty in the capitalist mode of production

In the Marxist tradition the capitalist mode of production is conceptualized around the two fundamental class positions of capitalists and wage laborers (workers). Workers, as Marx cynically remarked, are “free in the double sense” (Marx 1974, 272): they are (legally) free to sell their labor power and they are free from the means of production – they are unable to secure their reproduction outside the capitalist sphere.[5] In the wage contract the capitalist

[5] The analysis is based on the Marxist analysis of capitalism, which in turn is based on 19th century England. One

purchases labor power for a definite amount of time. The worker receives a wage and the capitalist takes no further responsibility in the reproduction of the worker. In the period specified in the wage contract, the worker has to follow the orders of the capitalist (which may be circumscribed by labor laws or by collective bargaining agreements)[6]. The output of the labor process in which the worker engages under supervision accrues to the capitalist. Typically this output will exceed the value[7] represented by the wage paid and various other means of production used up in the production process; and the capitalist will therefore appropriate a surplus. However, the capitalist process of exploitation is not yet completed. The product has to be sold on the market; the surplus labor performed by the worker thus has to be realized in a market transaction.

The capitalist mode of production thus presupposes the existence of markets. Capitalists (unlike medieval lords) do not directly consume the product of the exploited class. They have to sell it – which implies the possibility that they fail to sell the product and thus are unable to realize the surplus labor performed by workers. Moreover, and it presupposes that there exists a market of wage laborers. Workers sell their labor power on the market. They receive a money wage and purchase their means of subsistence on markets. The fact that the worker has to sell himself on the market also implies the possibility of unemployment. Different from goods markets, however, there is a systemic reason why markets for labor power will typically not clear (at full employment). A conflict of interest between workers and capitalist (if not always a conscious one) over the amount and intensity of work is a fundamental

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of the weak points of this approach is that it downplays the role of the state. On occasion the modification through the welfare state is noted.

[6] However, this does not affect the principle nature of the wage contract as on of command: the activities of the worker are not precisely specified in the contract as already noted by Coase (1937).

[7] The question how this value should conceptualized and, consequently, measured (in some form of labor units or in monetary terms) has fuelled extensive debates among Marxists, but is not of further interest here.

characteristic of the class relation. The threat of firing plays an important role in disciplining the work force and their wage demands. And the firing threat is only a threat if there is unemployment.[8]

In the Keynesian tradition, capitalists are depicted as entrepreneurs who engage in investment projects whose future income streams are uncertain. This uncertainty is in part related to the nature of competition on markets, in part it is the openness of history in a more general sense. Irreversibilities and sunk costs make the outcome of investment decisions sensitive to future circumstances. Keynesians usually associate uncertainty with events that lie far in the future. However, this is a narrow notion. Uncertainty is also engrained in the production process due the conflicting interests of capital and labor, which is why command and power become so important (Stockhammer 2007). Moreover, workers face uncertainty over whether they will have a job in the future.

The characterization of the capitalist with respect to the process of exploitation and his exposure to uncertainty is therefore straightforward. The capitalist is exploiting the worker and is exposed to a substantial degree of economic uncertainty. The actual amount of uncertainty will depend on the specific circumstances, not the least on the size of the firm. For a small capitalist the failure of one investment project may be threatening his very existence (and consequently come with a degradation to the working class). Large capitalists typically are hurt, but not existentially threatened by the failure of an investment project.

Wage laborers, as the ones performing the work, are clearly exploited. Contrary to what the Keynesian analysis suggests (though rarely states explicitly), workers are also exposed to a substantial amount of economic uncertainty. While the typical form of uncertainty that

[8] Bowles (1985) gives a Marxist interpretation of the efficiency wage model.

capitalists encounter is that of uncertainty over an investment project, workers experience uncertainty in the form of job insecurity (Stockhammer 2007). The firing threat is an integral, not an accidental, part of the labor relation. Moreover, the consequences of failed investment projects are passed on from the industrial capitalist to workers in the form of mass layoffs. Sustained unemployment can be a fundamental threat to the welfare and at times even the mere existence of the worker. Therefore the amount of economic uncertainty faced by workers has to be considered high (and may directly affect his personal uncertainty). Modern welfare states, however, mediate the uncertainty associated with a job loss (and other events) by providing unemployment benefits and other forms of support.

Actual class formations are, of course, much more complicated than the analysis of ’fundamental’ class positions suggests. In the modern corporation, the owner of the firm typically hires managers to organize the production process and supervise workers. The owners at times have no strong connection with particular firms, but rather hold (and sell) shares of firms. In the extreme case of rentiers, they invest their wealth in mixed portfolios of shares (in firms), government bonds and other financial assets with minimal, if any, involvement in the production process. The role of the classical industrial capitalist – in later times – thus gets split up into management, which exercises control, and rentiers, who are the legal owners of the firm. As managers do not generally have ownership in the firm, but are themselves employees, they occupy an intermediate class position (Wright’s 1997 new middle class). Rentiers perform no role in the production process proper other than that of a financier and they still receive a share of the profit (in the form of dividend or interest payments). They thus qualify as exploiters.

Management is actively engaged in the process of exploitation by supervising workers, but it does so on someone else’s account. Typically managers receive a wage, often accompanied by bonuses. Legally they are thus wage laborers, functionally however they fulfill parts of the role of the capitalist. As far as their income exceeds the value they themselves create, they receive part of the surplus from the owners. As managers themselves do not own substantial wealth, their position is subject to some uncertainty. The extent of this uncertainty strongly depends on the specific historical and institutional setting.

Rentiers appropriate parts of the surplus that has been produced by workers in the form of distributed profits, or, more indirectly, in the form of interest payments or other form of financial income. They are clearly on the receiving end of exploitation. Rentiers, are exposed to lower degrees of uncertainty than the classical industrial capitalist, as they are not subject to the uncertainties of a particular, physical, investment project. As they, by definition, own substantial amount of liquid wealth, they are able to diversify their investments and liquidate investments quickly if they wish to do so. They are exposed to *less* uncertainty than industrial firms as the latter face a large amount of irreversibilities and sunk costs. Keynes pointed out that the flexibility of rentiers ("the fetish of liquidity", Keynes 1973)[9] at times comes at high social costs. This does not imply that rentiers can eliminate uncertainty. In particular episodes hyperinflations or major financial crises may erode even a well diversified wealth.

Table 1 summarizes in a stylized fashion the different positions of the fundamental and intermediate class positions of the capitalist mode of production with respect to the extent of exploitation and the degree of uncertainty they are exposed to. Workers are exploited and face a high level of economic uncertainty. While this uncertainty may mediated by the welfare state, the paper argues that compared to other modes of production, in capitalism the exploited

[9] "Of the maxims of orthodox finance none, surely, is more anti-social than the fetish of liquidity, the doctrine that it is a positive virtue on the part of investment institutions to concentrate their resources upon the holding of 'liquid' securities. It forgets that there is no such thing as liquidity of investment for the community as a whole." (Keynes, 1973, 155)

carry a high level uncertainty – neither serfs nor slaves suffer from job insecurity[10]. Industrial capitalists are exploiters and subject to medium amounts of economic uncertainty. Small capitalists will face higher amounts of uncertainty than large ones. In contemporary capitalism, the functions of the industrial capitalist get split up. Managers, who in legal terms are also employees, take the role of organizing the production process and exercising control over workers. They occupy an intermediate class position and face a medium level of economic uncertainty. Rentiers are the nominal owners of the firm and thus the direct beneficiaries of exploitation and hold shares or other titles of ownership next other financial assets. As they are able to stay liquid, they face low levels of uncertainty, at least in normal times.

Table 1 Uncertainty and exploitation in the capitalist mode of production

	Position with respect to exploitation			
		Exploited	**Intermediate / Neutral**	**Exploiter**
Exposure to economic uncertainty	**High**	**Wage laborer**		
	Medium		**Manage*r***	**Industrial capitalist**
	Low			**Rentier**

Distribution of uncertainty in European feudalism

The two fundamental classes of the feudal mode of production are serfs and feudal lords. The relationship between these two classes evolves around the organization of agrarian

[10] No implication is intended that therefore the living quality of wage laborers is worse than that of serfs or slaves. Such a statement would be non-sensical. However, different distributions of uncertainty are a qualitative part of modes of production.

production. Serfs as the class that executes the work are concentrated in rural areas. They dispose (not to be confused with own) over their means of production and reproduce themselves through the products of their own work. Given this potentially independent position it is necessary for the upper class to establish strong institutional chains which enable them to impose exploitation over their serfs (Kahan 1973, 91). Contrary to older Marxist interpretations (Plechanov 1969, 70ff.) these chains do not necessarily have to be rooted in the economic sphere but also can originate out of a different subsystem (Habermas 1976, 159). In the feudal mode of production extensive, though divided and competing, legal rights form the basis of feudal exploitation of serfs (Epstein 2007, 18).

Yet, the birthrights lords claim have to be justified. This justification derives from their function as lord protector and in addition, from the sermons of the Christian clergy[11]. Indeed lords are a class that vindicates its existence trough the fact that they protect against specific uncertainties. The system of European feudalism is politically fragmented building upon complicated and instable systems of cross-loyalties and interdependencies. Numerous rather strong lords and typically weak kings compete against another and armed conflicts are regular occurrences. Thus beside their juridical and administrative functions the most important function of a lord is the military one. In order to induce the knights that are required for such warfare to stay loyal the provision of privileges and luxury is required (Duby 1981, 230). The court lords thus have to hold implies that they have to bear considerable fixed costs. For this purpose extensive duties are imposed over serfs. The larger the land over which a lord has authority, the more means are available to support knights and the larger the power of the lord hence becomes. Nonetheless, land (including the inhibiting serfs) is attached to a lord by

[11] The existence of the clergy as a subsumed class is an important feature of a feudal society that provides the conditions of existence of the fundamental class. The church had fiefs themselves and even claims for tithes. As a result they intensified exploitation but hardly altered the class structure.

birthrights and a market for land (or a market for serfs) does not exist. The only possibility for a lord to extend his power is to defeat another vassal on the battle field in order to appropriate his fief. The resulting fact that warfare is an intrinsic feature of the European feudal mode of production justifies the existence of the lord protector. Lords as a class of warriors are needed to protect from the uncertainty of warfare, which in turn exists because a class of warriors – the lords – exists.

The complex system of cross-loyalties and multiple obligations rests upon feudal class relations. From the small castellan up to the high count the ruling class bases its position on the attribution and exhaustion of legal exploitative entitlements in exchange for war services. Furthermore courts, manorial households and the warrior caste of knights cause considerable costs which necessitates intensive exploitation. Thus lords force their wards to work heavy on their demesnes in the most work intense periods of the year and have the control over considerable parts of the serfs' harvest trough tithes and other dues. Moreover they may have ban rights entitling them to exclusive privileges and monopolies e.g. the duty of serfs to use the lord's mill. This systematic expropriation is based on their military function and often is expressed most obviously in their judicial function (Hilton 1985, 120). The surplus they expropriated subsequently is either consumed directly or exchanged against luxury produce in towns. While lords thus exploit heavily they share a common destiny with their serfs with regard to the uncertainty of their revenues.[12] Crop failure – a constant threat in all pre-industrial economies – certainly may also occur on manorial estates. This usually coincides with a crop failure on the serfs' fields which further erodes the revenues of lords from monopolies, tithes and similar dues. In addition to these economic uncertainties lords also

[12] Certainly the uncertainties associated with crop failure largely on the evolvement of the weather which – according to Keynes statement above – is only slightly uncertain. Yet, uncertainties are not an ontological constant but contingent on specific social formations. The essential dependence of the feudal mode of production on its agrarian output so to speak is a multiplier of these slight uncertainties.

face personal uncertainties as warfare is intrinsic to the feudal mode of production. Thus in addition their position forces them to face the uncertainties of warfare. Thus while lords face a medium degree of uncertainty with regard to economic aspects of uncertainty their systemic exposure to uncertainty is high.

As indicated above, the adventures of lords in the military arena are enabled through the surplus that serfs produce. This class of producers is “bound” to the lords. They are not able to move freely and are subject to a variety of obligations. Serfs can dispose over a certain amount of land. Thus they have direct access to means of production which is protected by common law. This enables them to produce their means of subsistence themselves. This land nonetheless is assigned to a lord by privilege (*nulle terre sans seigneur*). Thus as compensation for being allowed to attend the lords’ fields, they have to perform soccage on the lords demesnes. Furthermore serfs are obligated to provide a variety of tributes. In extreme cases these tributes might reduce the crop over which serfs can freely dispose to a quarter of the total output. (Bauer and Matis 1988, 68). They are heavily exploited and typically unable to retain a substantial surplus. A minor part of the surplus is sold in small towns and regional markets. Once serfs have obtained property (which is hard enough) it is protected by common law. A stratification of serfs accompanies feudal societies (Hilton 1985, 139 ff.).

Nonetheless even a “wealthier” serf is hardly able to build up substantial reserves of staple food in a feudal society. Serfs depend heavily on what their fields yield and a crop failure might have disastrous effects. Economically they are, by and large, exposed to the same uncertainties as their lords. Still, as horrible as its impact can be, this is the only major uncertainty they face. The land that they attend to usually is entitled to them by common law and the installment of a new lord will make little difference to them economically. Once they have obtained the right to attend to this or that field they barely run the danger of loosing it again. Neither the course of the business cycle nor even the arbitrariness of lords can substantially alter this situation. The given situation of duties and allegiances is protected by common law (Hilton 1985, 110). Despite their vulnerability to natural disasters serfs thus can be regarded as being exposed to a medium state of economic uncertainty.

In a society which is based to a considerable extent on an intrinsic conflict within the ruling class it is hardly a surprise that a class of (potential) confederates can exist. Burghers living in urban conglomerates, where they enjoy a range of privileges, form this particular class. Economically such independent towns are not a necessary part of a feudal mode of production. Within the class relations between serfs and lords burghers hold a neutral class position. [13] Towns contribute to the welfare of lords through luxury products and aggravate warfare through the production of armory. Politically, their existence results from their position as potential allies within the politically fragmented system of feudalism.[14] The most important activities of burghers are craftsmanship and long-distance trade. As serfs produce most of the tools and goods of daily use themselves towns cannot expect considerable demand from them (Roehl 1978, 73f.). Thus the most important production is the manufacture of armory and of luxury goods for the nobles (Thrupp 1978, 160 f.). In addition urban privileges are an important factor contributing to the welfare of burghers. They can tariff goods, have a variety of exclusive rights (e.g. to hold fares) and are institutionally protected from attacks of greedy lords.

The internal economic nature of towns is characterized by a corporatist gild-system. Guilds

[13] Within towns however there also exist relations based on dependency and potential exploitation. Having employees themselves they can be part of a non-feudal exploitation process.

[14] The origin of towns often has been attributed to the intrinsic feudal conflict between a typically weak king and typically strong lords. Hereby towns could – originally – flourish as potential allies under the kings' protection.

control the supply and prices (Le Goff 1978, 53) and thus to a considerable extent regulate economic aspects of uncertainty to which burghers might be exposed. In addition guilds (often) provide some minimum social security for their members. Hence it is hardly surprising that membership of guilds is an exclusive and rather expensive affair. Though, once it is obtained, it guarantees relative security and comfortable wealth. Together with the privileges of towns, long-distance trade and their capital reserves guilds help to mitigate the uncertainty of a bad harvest which can erode large components of the demand for a towns' production. Economic uncertainty is moderated considerably in towns (for burghers). To a substantial extent feudal towns can consider themselves to be relatively secure. And indeed the exposure to economic uncertainty in towns is relatively small. However this is " … a feeling of security that still c[an] be convulsed by catastrophes… ." (Le Goff 1978, 48). Of course epidemics or similar catastrophes still maintain the urban population in a higher state of personal uncertainty.

Table 2 offers a stylized summary. Despite the personal uncertainty associated with arbitrary attacks of competitors lords are attributed with a medium degree of economic uncertainty. They exploit via a variety of tributes and soccage. The proportionate character of the bulk of these tributes though forces them to share the uncertainty associated with natural disasters and crop failures with their serfs. The economic uncertainty of serfs on the other hand also derives from the uncertainty that is associated with crop failure. Yet, in normal times they produce their own means of subsistence and they do not face the danger of being fired. Customary law prevents a straightforward expulsion from their lands. Thus – while being heavily exploited – serfs can be associated with a medium state of uncertainty. Burghers finally hold a by and large neutral position with regard to feudal exploitation. The surplus lords transfer to towns as well as serfs that flee feudal exploitation relate them with the feudal system but by no means does feudal production presuppose the existence of towns. They face personal uncertainties as those of epidemics that are intrinsic to medieval towns. Nonetheless, being organized in a corporatist manner and as the centers of trade they are able to largely mitigate economic uncertainties.

Table 2 Uncertainty and Exploitation in the feudal mode of production

	Position with regard to exploitation			
Exposure to economic uncertainty		**Yes**	**Intermediate/ Neutral**	**No**
	High			
	Medium	**Serf**		**Lord**
	Low		**Burgher**	

Distribution of uncertainty in the (ancient) slave mode of production

In order to analyze the typical features of a slave mode of production, the economy of ancient Rome seems to be the best reference period. On the one hand it was the dominating societal model of its days and not a mere anomaly of a world-wide capitalist system as the South American slavery system (Marx 1987, 59). On the other hand the pragmatist and institutionally homogenous character of the ancient Roman world – as opposed e.g. to the rather politically allotted character of ancient Greece – simplifies the analysis considerably without altering the results. Specifically the discussion will be based on the Roman Empire in the 1st to 2nd century.

Two fundamental class positions are the defining element of each slave mode of production: slave owners and slaves. Slave owners own the largest part of the means of production, i.e. arable land, large parts of the production facilities *and* slaves. In a slave economy not the labor power of the slave is purchased for a definite amount of time but the slave himself for an indefinite amount of time (i.e. his remaining life span). The slave then literally has to do whatever the slave owner commands him to do. Typically, hereby the largest part of slaves is allocated to agrarian production as it is easier to exploit slaves in the relatively unqualified activities on fields. This system of slave-based agrarian production then allows for a more intensive production and thus a higher output than e.g. subsistence peasantry. This higher output then serves two purposes. Firstly, it is used for the slaves' subsistence. Secondly and more importantly it allows for a considerable surplus which is used for the enrichment and luxury consumption of remote urban slave owners and is sold on urban markets. The defining element of a slave mode of production is *not* that most of the production is effected by slaves. As long as there is a substantial surplus at all the defining element is that most of the appropriated surplus originates from slave production (De Ste. Croix 1984, 107).

As a result of the existence of an agrarian surplus there is a certain role for markets within the overall economy (Temin 2006). The three most important markets that we thus can identify are: a market for slaves, a market for basic consumption goods (where especially the agrarian surplus is traded) and a market for luxury products. In addition it is worth noting that (contrary e.g. to feudalism) also arable land is tradable.

From a slave owner's point of view a slave then is nothing but an investment good or respectively a good for luxury consumption that has to be obtained on slave markets (Schumacher 2001, 44 ff.). A good fraction of the slaves that are traded (and of the overall slave population) is obtained through warfare and also through some trade with external clans. As a result the supply of slaves crucially depends on international relations and slave markets are subject to fluctuating prices; steadily increasing in peace time and dropping sharply in (successful) wartimes.[15]

The institutional mechanism around which the class relations between slaves and slave owners are organized is the total, legally sanctioned commoditization of the members of one of the respective classes, i.e. the slaves. For slaves it means that they cannot (legally) own anything, that they cannot (bindingly) marry and overall that they are a regarded as (capital) goods. Once slaves are obtained, all they produce is at the owner's command. Slave owners do not engage in productive activities themselves. In fact slave owners economically depend on the slaves' output. Still, it is possible that slaves become ill or injured, that they flee or commit suicide. Even if slaves are able to work properly, there is no guarantee that slave owners obtain a profit. Falling demand or a supply overhang for certain products might push prices down. The agrarian sector in slave economies might be struck by substantial harvest failure. It is possible that slaves do not even produce an output that is sufficient to maintain their own subsistence, not to mention a surplus. This is where the double-edged character of a slave – being legally an object, but physically a human being – becomes relevant. If in capitalist production there is a temporal increase say in the costs of energy, it is possible to turn off engines and restart them later. Certainly, "turning off" a slave is feasible. The open question however is how to restart the slave again. A rational slave owner will always accept costs to maintain his capital, i.e. his slaves (see Schumacher 2001, 277; Finley 1985, 120; most explicitly Bradley 2006, 74). This is a basic fact of slavery already identified by Engels (1988, 352). Thus slaves signify fixed costs. This is even more important as the slave supply usually is instable and fluctuating. In order to guarantee a sufficient workforce slaves have to be maintained over long periods. Thus, slaves also can signify sunken capital. The uncertainty of harvest failure and fluctuating prices has to be entirely borne by slave owners and can not

[15] This especially is the case as the mortality amongst slaves is high (Schumacher 2001) and the typical work in which slaves are engaged leads to at least some degree of sexual segregation (Anderson 1974).

be shifted e.g. through firing. Moreover, in times of crop failures slave owners have to "maintain" their slaves and have to obtain the required means of subsistence for them elsewhere (e.g. as in ancient Rome trough imports). As an overall result slave owners exploit heavily. Given the combination of considerable fixed costs with the possibility of substantial harvest failure however they are also exposed to a substantial extent of economic uncertainty at the same time.

The total commoditization of course has very important implications for slaves as well. Firstly, as already implied above, it is in the natural interest of slave owners to properly provide their slaves with sufficient food, clothing and shelter in order to preserve their capital. The deliberation of slave owners about their slave investment is a central feature of a slave economy. In the case of Rome this is very well documented in a seemingly endless row of accurate slave oriented prescriptions in the Roman civil law covering virtually every conceivable aspect of life (e.g. damage compensation in case of the 'damage' of a rented slave, slave owners' discretion of punishment of slaves even after capital crimes etc.). The flipside of this however is that a slave can be relatively sure to be nourished well enough to survive – if hardly more than that. Starvation of the slave or incapability to work is not in the interest of the owner. The seemingly comfortable economic security slaves thus have comes with being subject to discretion (including corporal punishment) by the owner and to the most extreme forms of exploitation. Both result in a generally lower life expectancy of slaves. Hard labor and a total lack of leisure characterize a slaves' life. All that the slave produces, earns or possesses first of all is the property of the slave owner by definition.[16] Under slavery

[16] Being a good themselves slaves where not entitled to *own* anything. Especially, if slaves where deployed in more sophisticated activities such as craftsmanship, the workshops often where led under *peculium*. This was a kind of separate estate on which a slave had extended *possession* rights. Legally, it still was the owner's *property* and could be taken away from the slave anytime. The interesting observation hereby is that when exploitation is

exploitation is total including the legal entitlement to sexual abuse and the right to own and dispose of slaves' offspring.

An actual slave economy is more complicated than a fundamental class analysis suggests. An intermediate class position is held by the *proles urbana*[17]. The maintenance of a slave system – both with regard to a steady slave supply (through expansionist warfare) as well as with regard to the suppression of eventual slave insurgences – requires the existence of a large, free class of potential recruits. The urban population usually forms the backbone of this army (Weber 2002, 245). On the other hand the existence of a large non-agrarian population presupposes a substantial surplus which (contrasted with systems based on subsistence peasantry) only is possible in through a slave-based economy. This surplus is controlled by the politically powerful class of slave owners who typically oppress the *proles*. Slave owners control the political process together with the agrarian surplus and own the largest entities. In normal times this enables them to skim a considerable surplus off the proles. As a consequence slave owners try to transmit fluctuations in agrarian output via prices to the *proles*. Still, the urban *proles* are by and large different to rural slaves. People are poor but free. As such they form the medium stage in the tripartite dichotomy that characterizes Roman slave society: slaves are unfree and poor, the *proles* are free and poor and the aristocracy is free and rich. The interplay of these factors demonstrates that the solidarity of the *proles* with regard to other classes is ambiguous. As free beneficiaries of the agrarian surplus they support the maintenance of a slave mode of production, but being poor they often show their solidarity with slaves (see e.g. Finley 1985, 122). Especially the agglomeration of masses of

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extended over more sophisticated activities it seemingly becomes necessary to introduce uncertainty (artificially) into the relationship.

[17] In a slave society also a part of free, poor population might live and work in the countryside. These whatsoever either hold a neutral position as free peasants or help to make the exploitation of slaves more efficient as daytallers and are not overly important to our analysis.

people increases the propensity to revolt. It is true that (apart from the city of Rome) regular welfare measurements were lacking in Roman antiquity. Such measurements were outside the interests of the ruling, slave owning aristocracy. Still, the evidence is overwhelming that public authorities and politically ambitious benefactors regularly stepped in when the situation on the food markets caused the danger of public insurgencies. Indeed "[t]he alleviation of food crises by private benefactors was so regular as to be an institutionalized feature of the society" (Garnsey, 1988, 15). The risk that solidarity between the *proles* and slaves arose on a broad scale simply could not be borne. Such interventions can be assumed as a structural feature of a tripartite class-structured slave economy

In a stylized way the characteristics described above are summarized in table 3. Slaves are exploited heavily. The discretion over the distribution of virtually everything they produce accrues to their owners. They neither receive a certain pay for their work nor do they have the possibility to produce anything for themselves. They are personally subject to arbitrary treatment by their owners. Nonetheless their commoditization and existence as mere goods substantially moderates the scope of the owners' arbitrariness. Indeed, slave owners usually will be prudent about their property and provide the means to keep their slaves alive. While slaves are exposed to a high level of personal uncertainty, there is little economic uncertainty (with regard to their means of subsistence). The reverse applies to the situation of slave owners. They do heavily exploit as the entire produce of slaves is at their disposal. Still, the fixed costs associated with slave-based production as well as the specific characteristics of a pre-industrial agrarian economy expose them to a high degree of uncertainty. With a twinkle of Jupiter's eye a crop failure can turn their surplus production into heavy losses. Consequently slave owners face a high level of economic uncertainty. This carries even more weight as they are structurally prevented from transforming a reduced output into price-increases. This is due to the existence of an amassment of poor but free urban *proles*. Given the hierarchical situation on the markets of an ancient slave society they are subject to steady – even though relatively (as compared to slaves) modest – exploitation. Too sharp a price increase on the food market – vital for a chronically malnourished (Morris and Manning 2005, 141) population – however runs the danger of being the last straw that triggers revolt amongst the very class that constitutes the back of the army. This leaves the *proles* in a situation of medium economic uncertainty as their uncertainty is mediated by the ruling slave owners.

Table 3 Uncertainty and Exploitation in an ancient slave mode of production

	Position with regard to Exploitation			
Exposure to economic uncertainty		**Exploited**	**Intermediate / Neutral**	**Exploiter**
	High			**Slave Owner**
	Medium	**Proles**		
	Low	**Slave**		

Conclusion

This paper has investigated the relations between exploitation and uncertainty in three different modes of production. We are now in a position to compare the results (Table 4). To simplify the comparison this section will only look at fundamental class positions. The key finding is that the configurations differ substantially. Slavery is unique in that the exploited is exposed to little economic uncertainty, but high personal uncertainty. This is due to the complete subordination of the slave to his owner, who has full discretion over the slave, but also has an economic interest in the slave's survival. The slave can be (relatively) certain to get exactly enough for survival, but no more. In this case extreme exploitation comes with little exposure to economic uncertainty. This aspect of uncertainty is entirely borne by the slave owner. In feudalism the exploited serfs are exposed to a medium level of uncertainty. They have direct access to their means of production and are able to provide for their own subsistence. The economic uncertainties faced by feudal lords originate out of the possibility of crop failure. They also face the personal uncertainties associated with warfare. Finally, capitalism is unique in that economic uncertainty plays a key role for the exploitation process itself. Not only has the capitalist the possibility of firing workers in the case of a recession (whereas a feudal landlord could not and would not wish to “fire” serfs), and thereby shift the burden of macroeconomic uncertainty to workers. The firing threat is an important means to maintain discipline in the capitalist factory. As wage laborers have no means of reproducing themselves outside the capitalist process, they depend on employment. Hence Joan Robinson’s dictum: “The misery of being exploited [in capitalism] is nothing compared to the misery of not being exploited” (Robinson 1962, 46).[18] It is only in capitalism that the lack of legal subordination of the exploited class has to be compensated by economic means, uncertainty being an important component of this.

Table 4.: Exploitation and economic uncertainty: fundamental classes

	Position with respect to exploitation		
Exposure to economic uncertainty		**Exploited**	**Exploiter**
	High	**Wage laborer**	**Slave owner**
	Medium	**Serf**	**Feudal lord** **Capitalist**
	Low	**Slave**	

Some points of clarification are necessary. First, while the analysis is mostly derived from

[18] We are grateful to Gary Langer for helping us locate this citation that has taken on a life of its own and is frequently found in the literature without precise reference.

theoretical concepts, the distribution of uncertainty can have immediate social significance and has indeed been subject to political struggles. Polanyi (1957, 92) cites David Davies confirming that rural workers experience the transformation to (urban) wage labor as associated (with a strongly disliked) increase in uncertainty: ”Workmen who are today fully employed may be tomorrow in the streets begging for bread (…) Uncertainty of labor conditions is the most vicious result of these new innovations.” More recently, the struggles over the welfare state can, of course, be interpreted as struggles over the distribution of uncertainty.

Second, it should have become clear that there is no direct correspondence between the exposure to uncertainty and welfare. Rather the mode of production implies certain configurations of exploitation and uncertainty. The welfare effects of the distribution of uncertainty can only be analyzed within a specific mode of production. Exposure to economic uncertainty presupposes some degree of personal freedom and a minimum level of income and wealth. Therefore for a slave an increase in uncertainty could well be a welfare improvement as it had to come with an increase in freedom and possession. Whereas in capitalism an increase in uncertainty (brought about for example by a abolition of unemployment insurance system) will certainly have negative welfare effects for the wage laborer, as an increase in uncertainty will weaken his bargaining position with respect to the capitalist.

The cross fertilization of Marxist and Post Keynesian concepts thus has proven fruitful and allows for a richer understanding of the notion of uncertainty as well as of that of class relations. Modes of production are not only characterized by a set of class relations but also come with a particular distribution of uncertainty. Uncertainty plays different roles in different modes of production and is closely linked, if historically in different forms, to the processes and social foundations of exploitation. Uncertainty and its distribution are shaped by social structures and institutions. Different types of uncertainty are experienced by different classes in different modes of production.

These findings raise many questions for future research. First, our analysis of the distribution of uncertainty between social classes implied an ordinal measure of uncertainty. Similarly, in the *Treatise on Probability* Keynes gives an ordering of different qualities of uncertainty. This ordinal concept of uncertainty deserves further elaboration. Second, the role of the state and other institutions has only been mentioned in passing. The welfare state in modern times as well as medieval guilds provides income security and insurance against an uncertain future. Thus institutions mediate the effects of uncertainty and historical analysis may prove insightful for understanding the changing role of institutions. Third the paper has focused on the nature and distribution of economic uncertainty across classes. The effects of different types of uncertainty on economic behavior and macroeconomic performance need more elaboration. Forth there are several possible lines of extension of our argument. As this paper has analyzed the distribution of uncertainty between classes in stylized modes of production, natural extensions include the distribution of uncertainty within classes and to incorporate other social divides such as race and gender into the analysis. Moreover one could analyze the configuration between uncertainty and exploitation for modes of regulation within the capitalist mode of production.

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