Land price trends as markers of economic cycles? Inflation, debasement and exchange rates in the central Middle Ages

by Lorenzo Tabarrini

Can we write a meaningful history of land prices during the early and central Middle Ages? According to a line of research inspired by economic anthropology, the answer would be no: land primarily served to construct networks of alliance and cannot be regarded as a mere commodity. Nevertheless, several classic studies have used price fluctuations as tools for periodisation – sometimes, in fact, as markers of profound social and economic changes. Yet this raises a further problem: scholars have not always attributed the same importance to monetary dynamics as factors capable of influencing prices. This article reviews the existing historiography on these issues with reference to northern and central Italy; its concluding remarks focus on a specific aspect of price analysis, namely exchange rates.

Si può fare la storia dei prezzi della terra durante il Medioevo alto e centrale? Secondo una corrente di pensiero ispirata dall'antropologia economica, la risposta sarebbe negativa: simboli di prestigio e mezzi per costruire reti di alleanze, i beni fondiari non possono essere considerati come una merce tra le altre. E tuttavia, alcuni classici della medievistica hanno attribuito all'andamento dei prezzi un valore addirittura periodizzante, considerandoli, cioè, specchio di movimenti più profondi dell'economia e della società. Un altro problema, però, emerge a questo punto: non tutti gli autori hanno fatto uso del dato numismatico (e, in generale, della storia monetaria) come di un elemento utile a indagare l'andamento dei prezzi. Il presente articolo si propone di riconsiderare l'intera questione attraverso una rilettura della storiografia esistente per l'Italia centrale e settentrionale; la sezione finale è dedicata invece al problema delle variazioni dei tassi di cambio.

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1. *Introduction*

The study of land prices during the Middle Ages has raised serious methodological questions, especially over the last forty years. It has been argued that land was not an ordinary commodity: it symbolised the status of its owner and was often exchanged in order to build or consolidate networks of alliance or allegiance. As a consequence, the value at which land was marketed in pre-modern economies was determined not only by the laws of supply and demand, but also by the wider social environment in which buyers and sellers operated, and which inevitably influenced the formation of prices. Some scholars, in fact, doubt that the laws of the modern economy can be usefully applied to the early Middle Ages at all.[1] This interpretative framework, nourished by anthropological thinking, has generated a certain scepticism regarding the construction of price series for landed estates and their scientific reliability. Are we really entitled to draw price curves and analyse price trends if the very reasons that prompted individuals to conclude each transaction – kinship, patronage, profit? – can hardly be discerned? Not to mention that, especially for the earlier periods, the surviving evidence is so fragmentary that any quantitative reasoning would be simply misplaced. As a result, even historians of medieval rural societies have sometimes deliberately avoided investigating the prices of landed estates.[2]

This leaves us with the question of how we should interpret the land-price trends that have been identified, including those presented in some classic studies that will be discussed in the following pages. Such trends have generally been regarded as reflections of underlying economic dynamics, if not as markers of specific economic cycles. It has often been implicitly assumed that the market provides the only possible explanation for the long-term tenden-

I would like to thank Tiziana Lazzari, Alessia Rovelli, and Chris Wickham for critiquing this paper.

[1] A seminal article on the subject, centred on Tuscany, is Wickham, "Vendite;" see the essays collected in Wickham and Feller, *Le marché*, and Feller, Gramain, et Weber, *La fortune*. Examples of dissatisfaction with the use of classical economic theory and its application to the early medieval period can be found in Feller, *Richesse* (see, for instance, 55, where mercantile exchange is said to become the norm for the circulation of wealth only from the 12th century onwards) and Little, *Religious Poverty*, 8, where the author argues that a profit-oriented economy replaced a gift economy only after 1050.

[2] As has been acutely remarked – for the Kingdom of Italy between the 10th century and the last quarter of the 12th – by Menant, "Les transactions," and by Carocci, "Il mercato," section 2. On the formation of prices and the existence of different systems of evaluation, the research carried out by Wendy Davies is essential: see, for instance, Davies, "Sale."

cies observable when a sufficiently large number of land prices is examined over several decades; hence the need to frame these prices as elements that may be relevant to the periodisation of medieval economy. But here another problem arises. It is generally acknowledged (though not universally, as we will see) that the quality of the coinage influenced the formation of prices. Since the value of the currency was not determined solely by the trust placed by the public in the issuing authority – a principle that became fully generalised only from the mid-19th century[3] – the intrinsic value of the coins (i.e., their material characteristics, especially weight and fineness) could help determine the purchasing power embodied in one particular specie. If the quality declined, nominal prices might rise as a result; and this decrease in material quality is what we refer to as debasement.[4]

This should nonetheless be seen as a tendency, rather than a rule. Users' awareness of debasement is difficult to ascertain – and so too is is the precise correlation between changes in coin quality and changes in prices.[5] However, the idea that debasement affected prices, at least to some extent, has often been recognised by scholars, as a couple of examples taken at random can illustrate. In a recent overview of the well-known inflationary spike of the early 4th century, Gilles Bransbourg emphasised that the reduction in the silver fineness of the Roman *nummi* from 301 and their weight reduction from 307 – both decided by the ruling authorities (through what we would call state-driven or, when explicitly declared, 'official' debasement) – could hardly go unnoticed by users, thereby adding to the price increases that had already begun in the 270s.[6] Another spike which is worth mentioning occurred in England in the early 13th century. Paul Latimer convincingly attributed a central role to the deteriorated state of the coinage – in this case caused by coin-clipping, the fraudulent trimming of coins by private individuals for profit – in triggering inflation. With the royal recoinage announced in late 1204 for the following year, the public began to lose confidence in the currency, particularly as a store of wealth, and hastened to dispose of low-quality money; sellers, in turn, raised prices.[7] The amount of information concerning debasement-induced inflation increases massively for the later medieval period and has allowed for more sophisticated analyses of the relationships between the mint prices offered for precious metals, the reductions in weight and fineness, and the resulting variations in exchange rates and domestic prices.[8]

3 With the widespread creation of central banks: see Capie, Goodhart, and Schnadt, "The Development."
4 This dual standard in determining the value of a currency reflects the distinction between the *cours légal* (set by the ruling authority) and the *cours commercial* (determined by the general public), as already emphasised by Bloch, "Mutations."
5 See, for instance, Naismith, *Money*, 165-6.
6 Bransbourg, "Inflation."
7 Latimer, "English Inflation."
8 For a comprehensive overview, see Spufford, "Debasement." A macro-example is France during the Hundred Years' War: Sussman, "Debasements." A local example, studied relatively

With this theoretical background in mind, the following pages offer a review of the existing historiography on land-price trends in northern and central Italy during an earlier period, the central Middle Ages. The discussion will focus on two phases marked by upward movements: the decades straddling the 10th and the 11th centuries (although followed by a price drop in some regions during the 1020s), and the final quarter of the 12th. I shall also briefly consider Catalonia, which has been the subject of a long and influential tradition of studies and must be taken into account if we are to set out fully the range of issues worth examining here. Broadly speaking, land-price trends have been used as proxies for economic growth or depression, much as a modern price index would be. Yet we must ask whether inflation was driven by the expansion of aggregate demand, or whether it stemmed from a crisis of confidence in the currency. In fact, the two types of inflation could coexist. One of the explanations for debasement – alongside the scarcity of bullion, the rising scale of minting and the increased use of coinage – is the expansion of state demand. The state sought to make the public deficit and the payment of military salaries more sustainable by issuing debased currency whose nominal value nevertheless remained unchanged. The crisis of confidence that could result from that policy was, in that specific context, a by-product of state demand.[9] Despite this potential overlap, the distinction between inflation driven by demand and inflation driven by distrust – and the possible relations between the two – seems to me particularly important. Drawing such a distinction may bring closer to grasping the actual historical-economic meaning of the land-price trends and may add a further element to the anthropologically oriented analytical framework that has gained prominence in recent years. As I will try to show, there is still research to be done on this point. The authors I will discuss have, in fact, offered very different assessments of the role played by monetary phenomena in influencing price dynamics.

The final section is devoted to a particular aspect of the history of prices, namely exchange rates, and focuses exclusively on the 12th century. Much like land prices, the exchange rates between different currencies can be – and have been – used to reconstruct broader political and economic dynamics. However, the principles underpinning the formation of rates remain, to an extent, obscure. Was the intrinsic value of the coins the main factor determining the foreign-exchange rate of a given specie? Or was it the trust placed by the public in the issuing authority? And if both factors played a role, what was the balance between them? Again, these questions seem important to me: a ruler's capacity to impose legal tender – that is, a rate not dependent on the material characteristics of the coinage – is an expression of political power and economic dominance. This makes it all the more relevant to outline the

recently, is Albi in the 1350s: Biget, "Monnaies." For some general remarks, see also Allen, "Currency Depreciation;" Santiano, *La monnaie*, 347-53.

9 A classic reference on the causal relationship between economic expansion, on the one hand, and devaluation and debasement, on the other, is Cipolla, *Le avventure*, 21-46.

problem for northern and central Italy after 1100, a period that witnessed the successful attempts of urban communes and rural lordships to assert their authority at the local level – a development usually described in the historiography as 'seigneurial transformation' or 'feudal revolution'.[10]

In general, the main thrust of this essay is a call for closer collaboration between historians of the written evidence on the one hand, and archaeologists and numismatists on the other. This seems the only fruitful way to advance research on debasement, prices and exchange rates. While the study of nominal prices must rely on notarised charters and registers, the serial analysis of coin finds provides the essential foundation for any attempt to achieve a comprehensive understanding of these phenomena. Admittedly, my *pars construens* is modest; the following pages aim simply to outline a couple of potential research avenues that may merit exploration in the future.

2. *Land prices (late 10th-11th century)*

I take as the starting point of my analysis the recent overview of medieval economic history by Paolo Cammarosano (2020). The reason is simple: he has provided, in an original way, a comparative summary of the evolution of land prices across several regions of Latin Europe during the 10th and 11th centuries, drawing on the classic studies by Cinzio Violante (on the Milanese hinterland), Pierre Bonnassie (on Catalonia) and Laurent Feller (on the Abruzzi). According to Cammarosano, the fact that land prices followed similarly upward trends from roughly the 960s/970s to the 1020s leads to the conclusion that the only possible explanation for this evenly paced inflation – even in regions that were distant from one another and barely integrated, if at all – was the general increase of agricultural production, followed by a slowdown towards the middle of the 11th century.[11] Cammarosano explicitly rejected the possibility that the variations in the intrinsic value of a given specie could affect price levels; indeed, he appears to consider such variations ultimately unimportant. In a footnote, he remarks that

> the value of money is simply the quantity of commodities it can purchase; prices do not go up because coins contain a certain percentage of precious metal (…). Things change when sovereign power deliberately reduces one specie and assigns to it a nominal value higher than its real value; this occurred only in the fourteenth century, however, and does not alter the fundamental fact that the value of money consists solely in the

[10] An overview of the Kingdom of Italy is provided by Fiore, *The Seigneurial Transformation*; for the place of urban communes within this framework, see Wickham, "The 'Feudal Revolution'."

[11] Cammarosano, *Economia*, 127-49. The slowdown seems harder to explain: according to Cammarosano (148), "it coincided with an adjustment and a new balance between the rural areas framed within the territories ruled by castles and the development of cities" (translation mine).

> quantity of commodities and services it can buy. In the long term, any diminution of the specie rapidly leads to a rebalancing of the value of money.[12]

Cammarosano had taken a somewhat different stance in his book on the Sienese family of the Berardenghi (1974), where he appeared to assign greater importance to monetary dynamics in the formation of land prices, particularly with regard to the issue of money supply – a classic problem of economic history. He argued that the overall increase in the provision of money towards the end of the 12th century may have been one of the factors that caused the devaluation of the specie used in Siena, thereby possibly contributing to the general inflationary trend recorded in the northern outskirts of the city between 1171 and 1220.[13] It has to be noted, however, that the key term here is devaluation, not debasement. As one commodity among others, money is subject to the law of supply and demand: if its overall quantity increases, its unit cost declines. The study of the material characteristics of coins – and thus of changes in weight and fineness – was not considered relevant.

I shall return later to the chronology proposed by Cammarosano for the onset of 'official' debasement (which, he argued, began only after 1300). For now, I would like to focus on the three authors he cited in his 2021 book, beginning with Cinzio Violante. Violante's volume on Milanese society in the centuries preceding the full development of the urban commune (1953)[14] included a meticulous analysis of the evolution of land prices from the 9th to the 11th century, based on slightly more than 100 documents. He showed that prices remained fairly stable until the 960s/970s; then they rose steadily until the end of the century. Between 1000 and 1025, they continued to increase, albeit with a tendency towards stabilisation. In the decades 1025-50, by contrast, it is more difficult to discern a general trend because of major oscillations in the recorded prices.[15] Violante interpreted this inflation as a symptom of the broader resurgence of social and economic life, whose earliest signs he detected under Ottonian rule. More specifically, Violante criticised the view expressed by Alfredo Bosisio in his volume on the origins of the Milanese commune (1933). Bosisio believed that inflation reflected a crisis of confidence in the currency, which he claimed had lost around 65% or 75% of its value by the end of the 10th century. This, in turn, was taken as evidence of a broader crisis in that period and of the uncertainty it engendered (Bosisio, however, did not explicitly connected uncertainty to debasement).[16] Violante acknowledged that the absence of data on the quantity of circulating coins and on the avail-

[12] Cammarosano, 143, n. 34 (translation mine).
[13] Cammarosano, *La famiglia*, 350: "the importance of rents in kind and tenancy relations based on the *colonatus*... may have been determined by the *de facto* devaluation of the currency" (translation mine).
[14] Violante, *La società*.
[15] Violante, 99-110.
[16] Bosisio, *Origini*, 25-8.

ability of precious metals effectively left him with no option but to interpret the evolution of prices as part of the changing social and economic structures of the central Middle Ages. Yet he did take numismatics – and the problem of intrinsic value – into account. He noted that from the age of Charlemagne to that of Conrad II the silver *denarius* appears to have lost half its weight; this decline, however, could not, in his view, explain a thirty-fold increase in land prices over the same period.[17] At this point, one must ask whether the relationship between debasement and prices is one of strict inverse proportionality, or whether, conversely, decreases in weight and fineness may have exerted a multiplicative effect on inflation. This, for now, remains an open question.

I will now turn to Pierre Bonnassie's classic study on Catalonia (1976).[18] To begin with, it should be noted that Bonnassie's main dataset consisted of prices for vineyard land measures (*modiata*), which were numerous enough – though not very numerous: ninety-five between 970 and 1050 – to construct a series. These prices were expressed for the most part in gold coins or ounces; and even if gold species did circulate to some extent in eastern Iberia, one must assume that notaries sometimes used them merely as units of account – the actual transactions being conducted in other silver and gold currencies. At any rate, Bonnassie's results basically matched Violante's: from the 980s to around 1020, prices in Catalonia increased fivefold (with a peak of +311% from 981 to 990 compared to the previous decade); the thirty years between the 1020s and the 1050s witnessed a downturn trend, before inflation resumed from 1050 onwards.[19] Again, not unlike Violante, Bonnassie believed that inflation was both a symptom and a driving force of commercial expansion and thus, more generally, of growing prosperity – even though, in an earlier article, he attributed the surge in the price of agricultural commodities (not land) during the 980s to the disastrous aftermath of the Muslim military campaigns against Barcelona and Pamplona.[20] According to Bonnassie, there were two possible reasons for the slowdown which occurred in the first half of the 11th century: the hoarding (*thésaurisation*) of coins and the limited availability of precious metals, both of which would have had deflationary effects. However, the evidence for either phenomenon is weak (let alone for their scale), and it is equally difficult, if not impossible, to demonstrate that hoarding and bullion famine occurred *precisely* in the decades during which inflation temporarily came to a halt.[21] It should be stressed that Bonnassie did not consider the possible effects of devaluation and/or debasement on price trends, although some isolated clues point in that direction. He himself noted

[17] Violante, 110-17, 133-4.
[18] Bonnassie, *La Catalogne*.
[19] Bonnassie, vol. 1, 391-5, 397-8, 409-14 and vol. 2, 911-26.
[20] Bonnassie, "Une famille," especially 270-7. I cannot expand further on the Iberian Peninsula here, but it should be stressed that Bonnassie relied on Sanchez Albornoz, "El precio" (on Castile; see, for instance, 390 about the effects of war) and Sáez, "Nuevos datos" (on Galicia).
[21] Bonnassie, *La Catalogne*, vol. 1, 398.

that around the year 1050 the silver *denarius* appeared to have lost much of its purchasing power and that in 1056-7 one could obtain ten *mancosi* from a gold ounce, whereas the ratio had been 7:1 in previous decades.[22] As I will argue in the concluding lines of this section, greater importance can be attributed to debasement than Bonnassie allowed for.

Let us next look at the Abruzzi region, as examined in a landmark monograph by Laurent Feller (1998).[23] From 925 to 1075, the evolution of land prices can be reconstructed on the basis of 327 documents. The analysis shows that nominal prices rose steadily from the second half of the 10th century to the first quarter of the 11th (+116%); they then fell sharply until 1075, where the study ends.[24] In Feller's view, this increase was driven by the economic dynamism of the upper strata of the peasantry, who became members of the clientele of the royal monastery of Casauria. They received substantial grants of land and in turn had dependent tenants of their own. They were able to accumulate savings and boost agricultural production. Seigneurial rents, which began to be levied as the process of castle-building expanded, did not hinder the accumulation of profits by these elite peasants. From the second quarter of the 11th century, however, this picture changed dramatically: land prices – especially those of low-quality lands – declined, while agrarian rents increased. According to Feller, these developments reflected a strong seigneurial reaction that progressively impoverished the peasantry. The dissolution of Carolingian public structures paved the way for a new economic system in which *castelli* represented the expression of lordly oppression. This, in turn, led to the contraction of the peasants' purchasing power and, ultimately, to deflation.[25]

One may also add David Herlihy, Pierre Racine and Jörg Jarnut to the authors cited by Cammarosano. Herlihy identified an upward movement in average land prices in the countryside of Lucca beginning in the mid-970s (although he considered only seventeen land transactions up to 1000) and continuing uninterruptedly from 1000 to 1100 (as shown by 336 sales, about half of which, however, date to the final quarter of the 11th century). He attributed this growth to the restructuring of ecclesiastical estates and to the increasing mobility of the land market, but he also appeared to suggest a monetary explanation. He noted that the most pronounced rise occurred between 1050 and 1100, when the Lucchese coinage lost half its value – a development that, in his view, made Lucchese coins highly competitive and widely used in central Italy.[26] Racine examined land prices around Piacenza into the mid-13th century (and for this reason I will return to him in the next section). For the moment, it is enough to note that he observed a doubling of prices between

22 Bonnassie, vol. 1, 377, n. 30 and 388-9.
23 Feller, *Les Abruzzes*.
24 Feller, 394-6, 405.
25 Feller, 416-8.
26 Herlihy, "L'economia."

975 and 1025 – although it must be stressed that Racine had only a handful of documents at his disposal – and that this increase continued throughout the 11th century, particularly in the immediate environs of the city. Racine acknowledged that the deterioration of the silver coinage used in Piacenza during this period was an issue worth considering, but, like Violante, he downplayed its significance. The currency had lost half of its value (–50%), whereas prices had increased tenfold; the main reason for inflation, in his view, was aggregate demand, which outstripped supply.[27] Jarnut studied land prices in the Bergamo countryside from the mid-10th century to the year 1100, drawing on roughly 100 documents.[28] He identified a small increase in nominal prices beginning at the end of the 10th century, a surge in the second quarter of the 11th, and then of stagflation from around 1050 onwards. The upward trend was especially pronounced in the immediate proximity of the city and within the city itself. Jarnut attributed this to the limited availability of cultivable land, although I would add urban demand – and thus proximity to the city market – to the range of explanatory factors. In Jarnut's view, changes in the intrinsic value of coins were less important than the broader socio-economic context of the period (on which point he cited Violante).[29] Finally, it is worth mentioning briefly Étienne Hubert's book on the city of Rome from the 10th century to the end of the 13th.[30] His work differs from the studies summarised so far, since he examined only the urban property market and building land, not the countryside. Moreover, he did not translate his data – based on about 500 documents for the entire period – into a proper series. Nevertheless, his findings are relevant here, as they further complicate the picture sketched so far. According to Hubert, prices were high in the early 11th century; they declined from 1050 to 1130, then rose continuously until the 14th century. He interpreted these shifts as direct reflections of fluctuations in the intensity of the urbanisation process – a process that, indeed, came to a halt in the second half of the 11th century.[31]

We need to ask whether, and to what extent, these accounts are comparable. The numbers of available documents fall broadly within the same order of magnitude, although it should be kept in mind that for the Abruzzi they are about three times more numerous than for Milan, Bergamo and Catalonia, and that for Lucca, Piacenza and Rome the evidence for the period in question is quite meagre. Even so, the data available for all these regions point to an increase in nominal prices during the second half of the 10th century and to some slowdown in the first quarter of the 11th – with the exceptions of

[27] Racine, *Plaisance*, vol. 1, 93-7.
[28] Jarnut, *Bergamo*.
[29] Jarnut, 256-9.
[30] Hubert, *Espace*.
[31] Hubert, 333, 349-51. I set aside Bois, *La mutation*, 80-3, who gathered only a few – indeed, too few – prices for vineyards in the area of the Burgundian village of Lournand; but it is worth noting that he too observed a sudden price surge from the 970s onwards.

Lucca, Piacenza and, possibly, of the high urban prices identified by Hubert for Rome. The similarities, however, can hardly be pushed any further: the end points of the six regional analyses differ (Violante and Bonnassie stop at 1050, Feller at 1075, Jarnut at 1100, Herlihy, Racine and Hubert extend into the central and late Middle Ages), and so do the trends observed after 1050. Bonnassie suggested a sudden surge; Feller described a continuing downward trend; Jarnut and Hubert identified the *beginning* of a decline, whereas Herlihy and Racine observed an upward movement throughout the entire 11th century. More importantly, the interpretations diverge markedly. Feller attributed deflation to the seigneurial mutation; Bonnassie focused on hoardings and the problem of metal supply; Hubert emphasised the intensity of urbanisation; Violante and Jarnut did not offer specific hypotheses for the price slowdown; Herlihy explained continued inflation by pointing to both the restructuring of Church estates and the debasement of the coinage, while Racine stressed the expansion of demand.

If we regard inflation as a consequence of the growth of aggregate demand, we must conclude that such growth was fairly uniform between 960 and 1000, became less intense around the turn of the century, and then varied significantly from region to region. These variations probably depended on contingent factors; still, the causes of the partial setback between 1000 and 1025, and of the diverging economic trends from around 1050 onwards, remain rather unclear. In addition – and this is the main contention of this paper – greater consideration should be given to the effects of monetary variations on prices, and to debasement in particular. We are now slightly better informed about its pace than we used to be when the land-price analyses discussed above were produced. All the coinages of northern and central Italy experienced some instability in weight and fineness precisely during the period in which inflation occurred, albeit to different degrees – and even though one cannot speak, at present, of a consistent debasement. This was the case with the imperial *denarii* of Pavia under Otto III (983-1002) and possibly already under Otto II (973-83), which also circulated in the southern part of the Kingdom and remained fairly stable throughout the 11th century; and, more markedly, with the *denarii* of Milan, Venice and Verona from the end of the 10th century onwards.[32] Concerns over the standard of gold dinars, and signs of a crisis of confidence in the currency, are documented in Catalonia during the 980s and were accompanied by reforms aimed at controlling, at least, the weight and fineness of silver coins through the issuing of better-quality specie.[33]

[32] Rovelli, "Il denaro," 81-3; Day, Matzke, and Saccocci, *Medieval European Coinage*, vol. 12, 42, 52; for some nuances, see Rovelli, "*De pondere*."

[33] Jarrett, "Currency," 235. For the decline in value of gold mancuses in the county of Barcelona over the 11th century, see also Crusafont, Balaguer, and Grierson, *Medieval European Coinage*, vol. 6, 79-80.

Interestingly, debasement occurred, broadly speaking, at a moment when silver mining appears to have intensified. For the Kingdom of Italy – whose monetary system was monometallic and based on silver – it is difficult to attribute debasement to a shortage of precious metals.[34] A further hypothesis can be set out. Recent research on the royal domain in northern and central Italy during the Ottonian period has shown substantial investment in fiscal estates, which served as centres for the production of niche goods and, possibly, some bulk goods that were later transported to – and perhaps marketed in – distant locations.[35] One may therefore suggest that the expansion of state demand was at least one of the reasons for the rise in nominal prices. This rise may in turn have been reinforced by growing distrust in the lower-quality coinage that began to be issued, and which may have been employed to facilitate long-distance exchange networks and to remunerate royal officials and soldiers in cash for their service.[36] Clearly, much work remains to be done: new coin series need to be analysed in order to flesh out the chronology and pace of debasements and recoinages, thereby allowing these monetary changes to be compared more precisely with inflationary trends. Tentatively, however, I would suggest that both demand-driven inflation (public demand, in this case) and distrust-driven inflation may have contributed to sustaining, and perhaps even initiating, the inflationary movements observed so far. I will discuss this issue further with regard to the late 12th century.

3. *Land prices (late 12th century)*

I would like to continue questioning Cammarosano's claim that state-driven debasement occurred only after 1300 by turning to the second half of the 12th century, generally regarded as one of sustained economic growth in northern and central Italy.[37] I shall focus primarily on Tuscany, for which we possess a considerable body of excellent research on both monetary dynamics and land prices (indeed, it is the only region to have been extensively studied in both respects). I shall then briefly turn to Piacenza.

Money first. The studies of the Lucchese and Pisan coins dating to 1150 onwards, based on both numismatic and written evidence, have shown a decrease in the silver content of these two coinages over the decades leading up to 1200.[38] This is all the more significant when one considers that the overall silver supply in western Europe expanded again in the 1160s, thanks to the

34 Spufford, *Money,* ch. 4.
35 Bianchi, "Rural Public Properties;" Bianchi, *Archeologia*.
36 These forms of remuneration (which must not be confused with regular salaries) were indeed part of Carolingian warfare, as noted by Nelson, "The Church's Military Service."
37 From 1150 onwards, northern Italian cities began to catch up with the most developed regions of the Mediterranean world: Wickham, *The Donkey,* ch. 6.
38 The best synthesis is Day, "The Early Development," 174-6, 520-32.

discovery of new mines in the territories of modern Germany and Hungary.[39] Even if the use and the long-distance spread of this new silver have not been properly investigated yet, it seems difficult to explain debasement by invoking a shortage of precious metals; and it seems equally excessive to attribute debasement, exclusively or even mainly, to coin-clipping. I would turn, instead, to a political-economic explanation. Some urban governments in northern and central Italy were beginning to implement the earliest forms of temporary public deficit, and the state of large-scale warfare during Frederick Barbarossa's military campaigns (1154-83) is likely to have made the recruitment of mercenaries and the maintenance of armies a matter of public interest (if not of public expenditure). It is therefore conceivable that city authorities sought to make these outflows more manageable not only by levying taxes, but also by issuing progressively lighter and lower-quality coinage, whose nominal value nevertheless remained unchanged.[40]

This context affected nominal prices, and therefore rents (and arguably salaries, although we know nothing about them). I can be briefer here than in the previous section, as the explanations offered in the studies summarised below are quite similar – at times, in fact, they coincide. I begin with two well-known documents from the archives of the cathedral chapter of Lucca. The first, dating to 1191, records that the canons promised not to increase their exactions on the people of the castle of Massarosa, which was under their lordship, "in view of the debasement (*deterioratione*) of the Lucchese coin." The second, issued in 1195, demands a payment in the coinage struck thirty years earlier, which was considered to be worth twice as much as the currency then in circulation.[41] Arnold Esch, in his *Habilitationsschrift* on the city of Lucca and its environs during the 12th century (building on Herlihy's analysis) showed that land prices rose by approximately 300% from 1165 to 1195 – particularly in the areas closest to the city – compared to the first half of the century. He attributed roughly half of this increase to heightened aggregate demand and the other half to the lower quality of the currency – that is, to debasement.[42] Going south from Lucca, Monica Baldassarri has calculated that land prices in the Pisan Valdarno increased seven- to eightfold from around 1150 to the beginning of the 13th century. Not unlike Esch, Baldassarri argued that this growth depended both on debasement and on the investment in landed estates by Pisan citizens – that is, on the expansion of private demand, which seems to be demonstrated by the unusually high number of transactions involving relatively small landed properties throughout the

[39] The classic reference is Spufford, *Money*, ch. 5.
[40] See Matzke, "Vom Ottolinus," 169-79; for Lucca and Florence, Tabarrini, *Estate*, 60 and *passim*. One must be cautious, however, and avoid projecting the characteristics of 14th-century public expenditure onto earlier periods, as acutely noted by Ginatempo, "Esisteva."
[41] The documents are summarised in Guidi, e Parenti, *Regesto del capitolo di Lucca*, vol. 3, 98-100, no. 1642 (1191 August 23) and 181-4, no. 1728 (1195 January 21). See Day, "The Early Development," 523-4.
[42] Esch, "Lucca," ch. 1.

second half of the 12th century.[43] Further inland, the Florence area has been studied by Enrico Faini, who showed that land prices rose by 330% in the hinterland of the city and by 262% in the open countryside between 1176 and 1200 compared to the previous twenty-five years. In his view, this growth was caused by the increase in the overall monetary supply, the progressively lower quality of the coinage, and the intensification of commercial exchanges – all of these phenomena being closely interconnected.[44] Finally, Jean-Pierre Delumeau identified an increase in land prices across the countryside of Arezzo from the 1170s onwards, even though he did not construct a series and did not link debasement to inflation.[45] If we add to these accounts Cammarosano's above-mentioned research on the northern outskirts of Siena,[46] we may conclude that, from the standpoint of land-price fluctuations, much of Tuscany had become a fairly integrated economic area by around 1200. The inflationary trend followed an approximately similar curve in each of the cities considered, occurring at much the same time as the weight and fineness of Lucchese and Pisan money declined.

It is beyond doubt that the main reasons for this process lie in the expansion of both public demand (deficit and taxes) and private demand (purchases and investments). But the public reaction to the deteriorated state of the coinage should also be considered – and, in fact, it has been taken into account more consistently here than in the analyses of the turn of the 11th century summarised above. Moreover, the history of price changes and debasement over the 12th century may help shed light on the monetary policies adopted by urban governments around 1200. One may propose that the issuing of large-size, full-weight silver coins in the first decades of the 13th century by Tuscan mints – the *grossi*, whose earliest northern Italian examples come from Genoa and Venice[47] – played a role comparable to that of the royal recoinage in England. The prolonged circulation of excessively underweight coins may have created difficulties in monetary transactions and may well have produced pronounced inflationary effects in the long run, making it necessary to introduce a mitigating measure (specifically, issuing better-quality specie intended to restore trust in the currency).[48]

Outside Tuscany, the only study on northern and central Italy that considers the evolution of land prices during the late 12th and early 13th centuries is the aforementioned book by Pierre Racine on Piacenza and its countryside. Racine showed that between 1190 and 1240 land prices – as well as the prices of certain staple and industrial commodities – doubled in comparison with the previous fifty years. This upward movement, however, which appears to

43 Baldassarri, "La monetazione," Appendix 6; see also Tognetti, "Produzioni," 128.
44 Faini, *Firenze*, 111-6.
45 Delumeau, *Arezzo*, vol. 2, 865-9 on prices and 869-80 on currency.
46 See above, n. 13.
47 Day, Matzke, and Saccocci, *Medieval European Coinage*, vol. 12, 259-68, 557-8, 637-40.
48 On Tuscan *grossi*, see Day, "The Early Development," 528-9; Blomquist, "Alle origini."

have been less intense than around Florence and Lucca, was regarded by the author as partly deceptive, for in the first decades after 1200 the silver *denarius* minted in Piacenza was heavily debased.[49] Racine concluded that

> in order to foster a constantly expanding market, the city authorities were pushed to produce petty money by adding a growing quantity of copper to silver. In a sense, inflation led to inflation, and this was part of a never-ending spiral which brought about the increase of prices.[50]

Here, the intertwined relationship between demand-driven and distrust-driven inflation is fully acknowledged, even if the author could not specify the relative weight of the two. One may hope that future studies will adopt this analytical framework and flesh it out further, in order to better clarify the chronology and pace of demand and debasement, and their respective influence on prices. It is equally desirable to renew research into the history of land prices across northern and central Italy during the central Middle Ages, which – Tuscany aside – still requires more systematic investigation and tighter comparative analysis. Finally, fluctuations in land prices can serve as a benchmark for assessing the degree of market integration across different regions, something that has likewise been undertaken only rarely for the decades between roughly 1000 and 1250. The Tuscan data suggest a higher degree of interconnectedness among local economies around 1200; whether this applies to the rest of northern and central Italy remains a question worth exploring.

4. *Conclusion: a note on exchange rates (12th century)*

In conclusion, it is worth saying a few words about the problem of exchange rates, which may be regarded as a specific area of study within the broader history of prices; after all, exchange rates establish the market value of one coin (i.e., its price) in relation to the market values of other coins. Medieval exchange rates from 1250 onwards were the subject of a monumental study by Peter Spufford (1986).[51] The fact that Spufford began his analysis in 1250 was no accident. With the introduction in 1252 of the Florentine gold coin (*fiorino d'oro*), whose weight and outward appearance remained largely

[49] Racine, *Plaisance*, vol. 2, 438-63. I set aside the article on food and clothing prices in Venice and Pisa by Buenger Robbert, "Twelfth-Century Italian Prices," as it does not discuss land; however, the author does emphasise the considerable fluctuation of prices during the period she examined (food and clothing are indeed subject to more frequent variations than landed estates). It is also worth mentioning the appendix on the few prices of Roman *casali* from the final years of the 12th century to the first three decades of the 13th century – which, however, do not reveal any recognisable trends: see Carocci, e Vendittelli, *L'origine*, 187-92.
[50] Racine, 492 (translation mine).
[51] Spufford, *Handbook*.

unchanged until the 15th century, the whole of Latin Europe acquired a stable standard of reference against which other circulating currencies could be measured. Variations in foreign rates were sometimes recorded on a daily basis.[52]

Any analysis focused on earlier periods must rely on a far more meagre evidence base. For northern and central Italy, the only comprehensive study of exchange rates during the 12th century is Alfred Haverkamp's work of 1970-1.[53] It is noteworthy that Haverkamp compared the variations in the rates among coins minted in Italian cities solely on the basis of their weight. Although weight is indeed an essential component of the intrinsic value of a specie, one may observe that fineness, too, should be taken into account. Moreover, attempts to impose legal tender status on a particular coinage must likewise be considered.

Haverkamp himself showed an awareness of this problem when discussing the commune of Genoa in the mid-12th century. He focused on a document dating from 1146, which records that the inhabitants of *Gamundio* (modern Castellazzo, south of Alessandria) concluded a military treaty with Genoa and agreed to several provisions concerning monetary matters. In particular, the *Gamundienses* accepted the Genoese *denarius* as the "head of all coins" (*capud omnium monetarum*); other currencies were not admitted, "if not at the exchange rate of the above-mentioned coin". One hundred men from *Gamundio* swore to abide by the Genoese currency "whatever currency the Genoese chose" (*quacumque Ianuenses habeant*).[54] According to Haverkamp, this meant that while foreign coins were to be exchanged in *Gamundio* – and probably throughout the Genoese territory – on the basis of their weight, the Genoese *denarius* would retain its value regardless of its material characteristics. This would amount to a specific form of legal tender. Haverkamp may have over-interpreted the admittedly laconic Latin text, but nonetheless highlighted a problem that remains far from resolved today.

At present, it remains unclear whether exchange rates were determined – exclusively or primarily – by the intrinsic value of a currency, or by the capacity of rulers to impose legal tender, as the following example shows. Andrea Saccocci, in his study of the coinage produced by the mints of Ravenna, Rimini and Ancona towards the end of the 12th century, argued that the rate of exchange between them and the Lucchese coins (which served as a standard of reference) was 1:1 – even though the latter were probably superior in both weight and fineness. In his view, this is demonstrated by the simultaneous presence of these coins in hoards: their outward appearance was almost identical, whereas their silver content could vary by as much as 20%. Moreover, contemporary notarial deeds allowed payments to be made indiscriminately

52 Spufford; on the political context, see Sbarbaro, "Circolazione," and most recently Locatelli, *The Florentine Florin*.
53 Haverkamp, *Herrschaftsformen*, vol. 2, chart no. 3.
54 Rovere, *I* Libri Iurium, doc. 46, 152-4.

in the money of Lucca, Ravenna or Ancona, which makes it difficult to believe that their nominal value differed; otherwise, they could not have functioned easily as means of payment, except through the mediation of money-changers.[55] Saccocci's view was explicitly challenged by another major specialist in medieval monetary history, William Day, who doubted that coins with such significantly different material characteristics could have possessed the same purchasing power. Day underlined that the Lucchese *denarius* lost half its value during the last quarter of the 12th century, whereas the *denarius* of Ancona remained fairly stable.[56]

To my knowledge, there is no prevailing view on this problem; indeed, it may well be that different regions followed different rules. In north-eastern Italy, the exchange rates between Veronese and Venetian *denarii* appear to have depended, at least to some extent, on changes in weight and fineness towards the end of the 12th century. In 1170, the Venetian *denarius* was worth half the Veronese one. After the reform carried out under Doge Sebastiano Ziani (1172-8), parity was established until 1185. In that year, Verona introduced a slightly debased *denarius* bearing a cross on both sides (hence the name *crociato*). Later, during the dogeship of Enrico Dandolo (1192-1205), the silver *grosso* (see section 3 for a definition) was struck. Owing to its weight and purity, the *grosso* became a solid standard of reference: Venice probably needed a strong currency to support the stability of its Mediterranean commercial networks, whereas Verona seems to have preferred a debased coinage for its inland exports of cloth, leather and timber.[57] This, however, lies outside the central concerns of this paper. What I wish to stress is that the intrinsic value of the coins appears to have played a role in the formation of foreign exchange rates.

At any rate, just as I have advocated closer attention to the issue of debasement – and therefore, primarily, to archaeological data – in the study of price fluctuations, especially for the late 10th and early 11th centuries, it seems clear that the history of exchange rates would benefit from further research into the political and economic relations among the polities that issued currency. The material characteristics of the coins constitute only one part of the analytical framework that requires examination. Through closer collaboration between historians and archaeologists, Haverkamp's chart of exchange rates in northern and central Italy during the 12th century could be completed and refined. The same applies, I believe, to the broader problems of debasement and inflation throughout the central medieval period – or so I hope this paper has suggested.

55 Saccocci, "Relazioni."
56 Day, "Prima."
57 Day, Matzke, and Saccocci, *Medieval European Coinage*, vol. 12, 556-9 and 637-40; Rippe, *Padoue*, 704-7; on commercial networks, see Wickham, *The Donkey*, 502-34.

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