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THE ROLE OF MONEY IN THE ECONOMIC GROWTH OF THE EARLY ISLAMIC PERIOD (650–1000)

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INTRODUCTION: FACTUAL AND CULTURAL ISSUES IN THE DEBATE OVER ISLAMIC ECONOMIC PERFORMANCE

The majority of economic historians have limited themselves to studying a single historical model of economic growth: that of Europe. They have investigated why and how Western Europe forged ahead and remained ahead so consistently, while other societies were unable to stage their own ‘rise’ through intensive growth, maintain it once it occurred, or indeed successfully emulate the European model. For the purpose of a paper devoted to exploring early Islamic economic growth, a subject historians do not usually cover when looking at the European model, it is out of the question to cover any of the vast literature unless it is directly relevant. For instance, in his recent account of Europe’s economic growth, D. North highlighted secure property rights and their influence on the economic behaviour of individuals and institutions;¹ others emphasized the need to undertake institutional change as part of the process of economic growth.² Yet others depicted the Islamic institutions as an example of institutional rigidity, arguing that the failure to undergo institutional change resided within Islam itself.³ The institutions chosen to illustrate how Islam was

¹ D. C. NORTH, R. P. THOMAS, *The Rise of the Western World: A New Economic History*, Cambridge, 1973; D. C. NORTH, *Institutions, Institutional Change and Economic Performance*, Cambridge, 1990.

² D. ACEMOGLU, S. JOHNSON, J. ROBINSON, *The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth*, in: *The American Economic Review* 95:3 (June 2005), pp. 546–579. The authors study several factors of institutional change, showing the effect of urbanization and the Atlantic trade on political institutions which enabled and facilitated behavior enhancing economic growth.

³ A. GREIF, *Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders’ Coalition*, in: *The American Economic Review* 283:3 (1993), pp. 525–548. Using the Geniza documents of Medieval Egypt, Greif argued that in theory Islamic trading institutions were inadequate and insufficient, creating the cultural paradigm known as “business familiarity” responsible for the small amount of Islamic investment partnership and the limitations on the cycle of investment possibilities. A. Udovitch has previously

inadequate ranged from the Islamic legal rules which failed to enable legal contracts to be enforced, to those creating asymmetric information in the markets, and still others which encouraged hostility towards institutional property rights.⁴ The rigidity of Islamic law prevented Islamic institutions from becoming efficient, efficient European style that is. Two key components, the law of partnership itself and the law of inheritance, prevented business partnerships from evolving independently. Since the inheritance law required that estates were to be divided immediately upon death and distributed according to fixed shares, it was impossible to maintain investments and keep wealth undivided. Islamic law also forbade usury, as did Christianity and Judaism. However, Christianity managed to overlook it, and Judaism lacked the state institutions to enforce it, Islam alone was unable to react institutionally to demands to abolish it. While European economic institutions were unhampered by cultural constraints from becoming “self destructive” through negative feedback, comparable Islamic institutions were impeded by Islamic law from receiving the feedback which might have led them to change. If we accept the theory that institutional change was crucial to economic progress, then a divine Islamic law which blocked this process ensured that economic progress in Islamic societies was historically unfeasible. Other arguments were less sophisticated but equally “cultural” in nature, focusing on the non-economic dimensions of traditional society, for example the unwillingness of agricultural Islamic society to adopt new techniques,⁵ or the failure of political institutions to ‘de-block’ innovations.⁶ European economic historians did not hide their disrespect. Robert S. Lopez wrote that:

Because nomadic grazing and caravan trade had been the basic occupations in their country of origin, the Arabs tended to despise farming and respected travelling commerce, the profession of Muhammed himself. But although

drawn attention to this paradigm, explaining that since trust was required for commercial entrepreneurship, and trust was based on personal knowledge of the contracting partners and consistently remained so, Islamic credit institutions were inherently limited.

⁴ T. KURAN, *The Islamic Commercial Crisis: Institutional Roots of Economic Underdevelopment in the Middle East*, in: *The Journal of Economic History* 63 (2003), pp. 414–446; idem, *The Absence of the Corporation in Islamic Law: Origins and Persistence*, in: *American Journal of Comparative Law* 3:4 (2005), pp. 785–834.

⁵ W. W. ROSTOW, *The Stages of Economic Growth*, in: *The Economic History Review*, New Series 12:1 (1959), p. 5.

⁶ J.-C. GARCIN, *The Mamluk Military System and the Blocking of Medieval Moslem Society*, in: J. BAECHLER, J. A. HALL, M. MANN (eds.), *Europe and the Rise of Capitalism*, Oxford, 1988, pp. 113–130; where he points out to the poverty of natural resources in Egypt as the source of its economic blockage, rather than the nature of the Mamluk military regime.

this unusual bent could provide a fresh stimulus to economic growth, it was partly offset by the Arabs' traditional disinclination for political order and teamwork.⁷

The numismatist Philip Grierson writing about the Umayyad monetary reform, said "(...) the Arabs, like many primitive peoples, were accustomed to use coins of their most sophisticated neighbours as weights."⁸ The rejection of the achievements of Islamic economic history on cultural grounds is intriguing since Europeans never denied their intellectual and cultural debt to their Islamic mentors in theology, science, philosophy, medicine etc. Even a recent paper which describes a sample of Islamic economic indicators as being superior for the years 700–900 is more interested in knowing why they failed.⁹ Achieving economic growth or economic progress is of immediate concern to present-day societies but it is also a process to which lessons from the past could be usefully applied.¹⁰ It may well be that the deplorable economic conditions of Islamic societies in the Middle East and Asia today have inspired the cultural attitude while India and China, yesterday's laggards, are today's emerging markets and thus spared the stigma of the blocking cultural paradigms.

From our perspective, the practice of targeting medieval institutions as representative of today's Islamic societies, has struck historians as being just as methodologically flawed as the act of comparing, implementing and judging actual conditions by standards of a theoretical model.¹¹ It has taken European institutions many centuries under a particular set of historical conditions to evolve into their final shape, and blaming the absence of these particular and unique patterns of change on the failure of society to acculturate in exactly the same way may appear both simplistic and

⁷ R. S. LOPEZ, *The Commercial Revolution of the Middle Ages 950–1350*, London, 1971, p. 24.

⁸ P. GRIERSON, *The Monetary Reforms of Abd al-Malik. Their Metrological Basis and their Financial Repercussions*, in: *Journal of the Economic and Social History of the Orient (JESHO)* 3:3 (1960), p. 255.

⁹ M. BOSKER, E. BURINGH, J. L. VAN ZANDEN, *From Baghdad to London: The Dynamics of Urban Growth in Europe and the Arab world, 800–1800*, Discussion Paper Series No. 6833, May 2008, Centre for Economic Policy Research, London.

¹⁰ Economists have applied lessons of the 1929 crisis to the recent economic troubles. See for example P. KRUGMAN, *That 30's Show*, in: *The New York Times*, July 3rd, 2009; one of many articles by the recent Nobel laureate calling for lessons from past to be implemented.

¹¹ For methodology chastisement see J. RUBIN, *Review of Umer Chapra, Muslim Civilization: The Causes of Decline and the Need for Reform*, in: *EH.NET* (June 2008), URL: <http://eh-net/bookreviews/library/1321>. See also M. COOK, *Islam: A Comment*, in: *Europe and the Rise of Capitalism*, pp. 131–135.

anachronistic. Niels Steensgaard was correct to say that, “descriptions of the historical markets as opposed to the market of economic theory will always be tales of imperfections, an endless catalogue of deviations from pure theory.”¹² A correct historical evaluation should be embedded in a chronological and factual context in order to be methodologically valid and scholarly argued.

In this paper my underlying hypothesis is that a process of economic growth did in fact occur in the Islamic Caliphate, 650–1000, and it can be argued for on the basis of the available evidence. Normally a common process of economic growth may be observed when a series of structural changes take place “in scale and patterns and level of agricultural output and productivity, manufactures, fluctuations in population and real income and patterns of trade”.¹³ My hypothesis is that it is possible to show how and why these changes occurred, that it was a process which begun with a major shock to the economy in the form of the severe depopulation resulting from a continuous series of plagues, starting before the fifth century and not ending until the eighth, and that it affected the population in the rural areas as well as in the cities. The result was the abandonment of villages, restricted agricultural cultivation and a decline in tax revenue. However, once the Islamic Empire came to power in the region it attempted to deal with the demographic crisis by importing slaves from Africa and central Asia, forced re-settlements, and encouraging savings in manpower through technical innovations. The most important factor however, was money. The reorganization of the monetary system, by increasing supply and circulation of money led to capital accumulation, first in the centre of government in Baghdad and later in the provinces and the regional centres, allowing capital to be invested in trade and manufacturing.¹⁴ The decline in cultivation in the Baghdadi hinterland was compensated for by taxes from the provinces which in turn enabled the resources to be utilized in a way which favoured the structural changes in the manufacturing and the service sectors. Other developments such as the creation of legal, credit and banking institutions, and intellectual and scientific discoveries also had a role, but it was the monetary system which provided the impetus and wherewithal to start the process. I will now show how the increased

¹² N. STEENSGAARD, *Emporia: Some Reflections*, in: R. PTAK, D. ROTHERMUND (eds.), *Emporia, Commodities and Entrepreneurs in Asian Maritime Trade, c. 1400–1750*, Stuttgart, 1991, p. 9.

¹³ See ROSTOW, *The Stages*, p. 4.

¹⁴ Momentarily, at least, it helped the economy to move beyond the “agrarian trap”, see E. GELLNER, *Introduction*, in: *Europe and the Rise of Capitalism*, pp. 1–5.

money supply occurred and point to the changes in the different economic factors affected by it. Sources examined here include numismatics, literary, archival and legal documents.

UNDERLYING CONDITIONS: MONEY IN THE CONTEMPORARY
MEDITERRANEAN ECONOMIES

Greek, Roman and Medieval Europe's economic historians held different opinions, not about whether money should be considered a factor in economic growth — they all agree on that — but how much of it was available to generate economic growth.¹⁵ When Maurice Lombard postulated that fourth century BC Macedonia could be seen as an earlier model of the Islamic economic expansion, he suggested that Alexander's excursion into Central Asia was in search of the precious metals of later Islamic fame.¹⁶ Moses Finley, on the other hand, did not think that Ancient Greece's economy had a large enough supply of money to generate economic growth: "money supply was often inadequate for the ongoing needs of the society, let alone for the prospects of economic growth."¹⁷ Did the Roman economy experience a dramatic change in conditions? Keith Hopkins thought so. He suggested that between 200 BC and 400 AD the Roman economy enjoyed a period of growth resulting from increased monetization, especially in the rural areas: "State consumption shifted from taxation in kind to monetary payments and spawned the development of markets, increasing division of labour and growth in the Roman world."¹⁸ For Byzantium, A. Laiou admitted that theories about "total demonetization in the Byzantine economy in areas outside Constantinople until the tenth century" cannot be dismissed.¹⁹ The Islamic conquest of Armenia was blamed for this region's loss of its place in international trade and for the

¹⁵ For Greece and Rome, W. V. HARRIS (ed.), *The Monetary Systems of the Greeks and Romans*, Oxford, 2008.

¹⁶ M. LOMBARD, *Monnaie et histoire d'Alexandre à Mahomet*, Paris, 2001, pp. 89–131.

¹⁷ Quoted in HARRIS, *Monetary*, p. 4.

¹⁸ K. HOPKINS, *Taxes and Trade in the Roman Empire (200 BC – AD 400)*, in: *Roman Studies* 70 (1980), pp. 101–125. See also P. F. BANG, *Trade and Empire — In Search of Organizing Concepts for the Roman Economy*, in: *Past and Present* 195 (2007), pp. 3–54.

¹⁹ On Byzantine trade in the seventh–tenth centuries see A. E. LAIOU, *Exchange and Trade, Seventh–Twelfth Centuries*, in: A. LAIOU (ed.), *The Economic History of Byzantium 2:712*, Washington, 2002. With silver disappearing after the loss of territories in Syria, Egypt, North Africa and the Balkans, and copper being used for daily transactions demonetization is hard to deny.

monetary crisis which followed the demonetization of the economy.²⁰ As for Western Europe, the situation was summed up by Spufford: “The second half of the ninth century saw in general a failure of minting in the Carolingian world, and not merely on its northern frontier (...) the true start of medieval coinage was only found in the tenth century.”²¹ Europe’s fate was blamed on the rise of Islam, in an argument known as the Pirenne Thesis, even though the prolonged decline in the amount of money, monetary circulation and monetization which engulfed the Mediterranean between 700 and 1000 also affected the Eastern Mediterranean regions conquered by the Muslims and delayed economic growth there.²² The numismatic evidence is most instructive in this regard: no European coins were ever found in Middle Eastern hoards between the late seventh and early tenth centuries and very few Muslim coins were found in Western Europe’s hoards. As we shall presently see, when the increased supply of money, increased monetary circulation and monetization of the economy took place, it occurred away from the Mediterranean, was fuelled by silver, not gold, the typical coinage of the Mediterranean, and resulted in a continental silver trading zone which linked the markets of the Middle East, central Islamic Asia and the Northeastern Europe, but excluded Western Europe.²³

ISLAMIC ATTITUDES TO MONEY

The sluggish monetary circulation and almost total disappearance of regular minting in the region, spurred great interest in the energetic measures

²⁰ On the supply of money and Europe’s medieval commercial revolution see P. SPUFFORD, *Money and Its Use*, Cambridge, 1988, pp. 50–53. See also LOPEZ, *Commercial Revolution*, pp. 70–71.

²¹ H. A. MANANDIAN, *The Trade and Cities of Armenia in Relation to Ancient World Trade*, tr. N. Garsoian, Lisbon, 1965.

²² On the Pirenne Thesis and money, see T. S. NOONAN, *When and How Dirhams First Reached Russia. A Numismatic Critique of the Pirenne Theory*, in: *Cahiers du monde russe et soviétique* 21:3–4 (1980), pp. 401–469; SPUFFORD, *Money*, p. 35.

²³ See discussion of the ‘Viking’ dirhams in SPUFFORD, *Money*, pp. 65–73; FINDLAY, O’ROURKE, *Power and Plenty*, pp. 73–80, who for some reason insist on calling it the “Viking silver”. I have examined the role and place of the Islamic monetary system and coins in the medieval Mediterranean, see my forthcoming paper, *The Islamic Mediterranean and Global Order — Money and Markets*. Keynote address to be published in the proceedings of the conference *La presència catalana a l’espai de trobada de la Mediterrània medieval: noves fonts, recerques i perspectives*. Barcelona, 13–16 May 2009. Also Tables infra.

of the Umayyads.²⁴ In fact, from the very beginning the conduct of the Umayyad rulers contradicts what Philip Grierson described as the Arabs' primitive attitude to money.²⁵ In an article published in 1986 Michael Bates traced the early Islamic coins minted under the Umayyads during the first 50 years of Islamic rule in order to demonstrate the inaugural stages of Islamic coinage. In the process he also charted measures which amounted to a clear policy and attitude towards money.²⁶ Existing mints were told to resume minting using local dies, issuing coins with minimal changes in shape and weight, but adding a unique hybrid of Muslim-Byzantine gold and copper, Muslim Sasanian, Muslim-Sogdian silver and Muslim-Ibero-Latin gold to the coins already circulating in each of the regions they conquered.²⁷ The Umayyad administration also refrained from recalling and re-minting the coins already in the market which could have adversely affected circulation.²⁸ Easing slowly into their coinage reform between 691 and 696, the Umayyad administration under 'Abd al-Malik introduced an easily recognized new type of gold, silver and copper Islamic coins, without creating a trauma in the system. Continuing to use the coins they found in circulation for daily transactions is another element of the Umayyads' attitude to money, as is the mentality of society in general. This attitude affected individuals. Chroniclers report that items made of precious metals were regularly melted down and made into coins.²⁹ Note that Arab society was not a hoarding society, like the Indian or Chinese were and that it viewed precious metals, whether silver or gold, either as a traded commodity or destined for minting or jewellery making,

²⁴ See C. MORISSON, *Le monnayage omayyade et l'histoire administrative et économique de la Syrie*, in: *La Syrie de Byzance à l'Islam VII^e-VIII^e siècles*, Damascus, 1992, pp. 309–318; M. BATES, *Commentaire sur l'étude de Cécile Morisson*, following Morisson's paper, pp. 319–321.

²⁵ See note 8 supra. For a general introduction see A. EHRENKREUTZ, *Money*, in: *Handbuch der Orientalistik*, Leiden, 1977, pp. 84–97; idem, *Monetary Aspects of Medieval Near Eastern Economic History*, in: M. A. COOK (ed.), *Studies in the Economic History of the Middle East*, Oxford, 1970, pp. 37–50; E. ASHTOR, *Histoire des prix et des salaires dans l'Orient médiéval*, Paris, 1969, pp. 39–41.

²⁶ M. L. BATES, *History, Geography and Numismatics in the First Century of Islamic Coinage*, in: *Revue Suisse de Numismatique* 65 (1986), pp. 231–261.

²⁷ In addition to Bates see on the continued circulation and minting immediately following the conquest, S. HEIDEMANN, *The Merger of Two Currency Zones in Early Islam. The Byzantine and Sasanian Impact on the Circulation in Former Byzantine Syria and Northern Mesopotamia*, in: *Iran* 36 (1998), pp. 95–112.

²⁸ Something similar was done by Louis the Pious who was blamed for further suffocating monetary circulation; see SPUFFORD, *Money*, pp. 43–44.

²⁹ J. F. RICHARDS, *Outflows of Precious Metals from Early Islamic India*, in: J. F. RICHARDS (ed.), *Precious Metals in the Later Medieval and Early Modern Worlds*, Durham, 1983, pp. 183–207.

but not for an ostentatious display of wealth.³⁰ The conquerors did not hoard the precious objects they found during their conquests, but melted them down for the purpose of minting. This attitude to money did not change; it remained the guiding policy in the actions of later dynasties, and also led to increased monetization rather than consumption. In the ninth and tenth centuries as we shall see below, the Sāmānids minted millions of dirhams for the purpose of trading with Northeastern Europe.³¹ It helped that the supply of gold and copper from the Byzantine sources was not completely interrupted at this early stage, while Sasanian *drachms* arriving in the form of taxes supplied the silver for some of the dirhams.³² Nonetheless, it was copper, the exact provenance of which has remained unclear, which dominated the daily transactions in the markets and continued to be minted in twenty locations in Northern Syria during the second half of the seventh century, following the patterns of minting in the Byzantine Empire.³³ If there were specific motives behind the Umayyad determination to restore intense monetary circulation in addition to general economic needs, it is hard to pinpoint them. H. Kennedy suggested that “there was clearly unmet demand for more coinage” to pay for soldiers’ stipends.³⁴ It is hard to see how the ‘political message’ motivation played out under the Umayyads, although this is certainly valid for later periods when supporters of the Abbasids carried out minting during the last years of the Umayyads. Coins from one dynasty did not, as a rule disappear after their demise. The Umayyad dirhams continued to circulate long after the dynasty fell and the coins of the Ṭāhirids, (821–873), Ṣaffārids, (867–910), Zaydis of Tabaristan, (864–928), continued to circulate within the Caliphate well after these dynasties had rejected the Abbasid Caliphs. Nevertheless, the Umayyad utilitarian approach to precious metals and therefore their attitude to money, remained a guiding policy for the dynasties which replaced them.

³⁰ See C. P. KINDLEBERGER, *Spenders and Hoarders. The World Distribution of Spanish American Silver 1550–1750*, in: *Asian Economic Research Unit, Institute of Southeast Asian Studies*, 1989, on India and China, pp. 57–73, on the Middle East, pp. 49–52.

³¹ R. K. KOVALEV, *The Mint of al-Shāsh: the Vehicle for the Origin and Continuation of Trade Relations between Viking-Age Northern Europe and Sāmānid Central Asia*, in: *AEMA* 12 (2002–2003), pp. 47–79.

³² HEIDEMANN, *The Merger*, p. 96.

³³ HEIDEMANN, *The Merger*, pp. 97–99.

³⁴ H. KENNEDY, *The Armies of the Caliphs, Military and Society in the Early Islamic State*, London — New York, 2001, pp. 68–69, offering one example, the need to pay the army money wages, p. 68.

DIRHAMS AND HOARDS

A quantitative expression of the growing amount of money in circulation is provided by the hoards. This evidence is most effective for the number of Islamic silver coins circulating in the tenth century but is also important for showing the increases in the eighth and ninth centuries, especially when studied together with the information about the mines.

Table 1. Number of Dirhams in Hoards According to Centuries³⁵

7 th century	8 th century	9 th century	10 th century	11 th century
158	16,640	66,946	183,116	62,027

The numbers in Table 1 derive from a comprehensive catalogue of all the Islamic silver dirhams contained in 1,212 hoards and minted by 273 mints between the seventh and the eleventh centuries. 81.19 % of the dirhams were retrieved from hoards outside the Islamic lands, mostly Northeastern Europe; the rest came from hoards located throughout the Middle East, North Africa and Central Asia. Most of the hoards containing Islamic dirhams were found in Russia, Scandinavia and the Baltic, and were studied by Thomas Noonan and his student R. Kovalev mostly as to their significance for trade.³⁶ 80 % of the dirhams found in the North-eastern hoards were struck in Central Asia and only about 70,000 dirhams in the Near East.³⁷ Neither gold nor copper coins were found in the North-eastern hoards, something which further highlights their singularity.³⁸ Nonetheless the hoards show significant increases in the quantity of dirhams deposited each century, and this indicates accelerated minting activities in the Islamic lands. The significance of the distribution patterns is that, unlike the Muslims, the Russians and Scandinavians who were the Muslims' trade partners hoarded the silver dirhams they received. The reason behind this difference in behaviour results from the primitive

³⁵ Based on R. K. KOVALEV, A. C. KÄELIN, *Circulation of Arab Silver in Medieval Afro-Euroasia: Preliminary Observations*, in: *History Compass* 5:2 (2007), pp. 560–580.

³⁶ For Thomas S. Noonan's publications see *Russian History / Histoire russe* 28:1–4 (2001), pp. 7–28, a bibliography compiled by R. Kovalev.

³⁷ T. S. NOONAN, *Volga Bulghāria Tenth-Century Trade with Sāmānid Central Asia*, in: *AEMA* 11 (2001), pp. 203–204.

³⁸ See T. NOONAN, in: *Medieval Islamic Copper Coins from European Russia and Surrounding Regions: The Use of the Fals in Early Islamic Trade with Eastern Europe*, in: *Journal of the American Oriental Society* 94:4 (1974), pp. 448–453.

economy of Northeastern Europe, where coins did not circulate and no infrastructure existed for their investment.

Minting was decentralized from the beginning and occurred everywhere, including in the mines themselves, and some dirhams bearing the term *al-ma'din* as minting location appear. The mints represented in the catalogue of the hoards cover the entire Islamic regions with the exception of Spain on which we will have something to say below. The eighth century mints were located in North Africa, Morocco and Ifriqiyya, Iraq (al-Basra, al-Kufa and Baghdad), Iran (Rayy, Isfahan, Sistan) and Transoxiana, or Mawarannahr (Balkh, Samarqand and Shash), as well as in Armenia.³⁹ The coins of the ninth century, in which Abbasid dirhams predominated, were minted mostly in the Middle East. Mints for the dirhams from the years 800–825 were located in North Africa but dirhams minted there all but disappeared beginning in the period 825–905. The rest were struck in Iran-Iraq. By the tenth century, when the quantity of dirhams increased by 75 % over the previous century most of them were minted in central Asian mints. The Sāmānid dirhams were minted in two dozen primary and secondary mints. The four primary ones were Shash (Tashkent), Balkh, Samarqand, Bukhara, with the Samarqand mint being the most productive mint throughout.

MINES AND MINTS

The existence of a large number of silver dirhams signals the existence of large deposits of bullion available for minting. The information about the exploitation of the mines comes from archaeological sites and from literary sources. There are no indications that any precious metals came into the Islamic world and the range of mines available and the efforts deployed in excavating them were intensive. In the eighth century, the mines which supplied the silver used for the minting of the early dirhams were located in Africa,⁴⁰ the Middle East, Central Asia and Armenia. The mints in Baghdad, al-Kufa and al-Basra, which produced most of the dirhams during this period, received their silver from the closest silver

³⁹ T. NOONAN, *Early Abbasid Mint Output*, in: *JESHO* 29:2 (1986), pp. 113–175. Noonan was able to articulate mint productivity only in comparative terms, namely in which year productivity increased or decreased, but he did not state overall production.

⁴⁰ On the Moroccan mines see B. ROSENBERGER, *Une mine d'argent au Moyen Age marocain*, in: *Hespéris Tamuda* 5 (1964), pp. 15–78 and D. EUSTACHE, *Les ateliers monétaires du Maroc*, in: *Hespéris Tamuda* 11 (1970), pp. 95–103.

mines in Yemen.⁴¹ Al-Hamdānī lists eight gold and three silver mines for Southern Arabia, though the Yemen did not mint gold until the early Abbasid period.⁴² Gold is also known to have been mined in the Hijaz and it appears that gold was minted there in the Umayyad period. The Yemeni mines are estimated to have produced enough silver to mint 20,000 dirhams weekly or about one million dirhams a year, using 3.1 tons of silver during the eighth–tenth centuries.⁴³ The silver for the greatly increased number of dirhams in the tenth century, perhaps in response to a growing demand from the traders for coins was supplied mainly from the central Asian mines.⁴⁴ Motivated by the silver dirham's domination in commercial exchanges the central and oriental mines which produced silver for the silver plates and other Sasanian artefacts from Sogdiana and its regions; Utrushana, Shash and Ferghana, reached their highest production levels during the ninth–eleventh centuries. Noonan estimated that the capacity of the silver mines was gigantic, producing 375,000 kg of extracted bullion, enough for minting the entire dirham export of 125,000,000 whole dirhams, each weighing 3.00 g to Northeastern Europe during the tenth century.⁴⁵ Four areas were identified as extraction zones during the tenth century. The first was the Talas valley with Shelji as its centre with 78 silver mines, several of which had furnaces for smelting.⁴⁶ The second zone was the eastern Mawarannahr with Ilak and Ferghana as the centres. In terms of individual mines, Burjakov estimated that the Lasherek mine alone produced 400 tons of silver during the Middle Ages and that the mines in

⁴¹ Basra minted silver from 647 and continued to issue dirhams in almost unbroken manner until 960. From the eleventh century the mint there ceased activity for two hundred years. N. M. LOWICK, *Trade Patterns on the Persian Gulf in the Light of Recent Coin Evidence*, in: DICRAN KOUYUMJIAN (ed.), *Near Eastern Numismatics, Iconography, Epigraphy and History: Studies in Honor of George C. Miles*, Beirut, 1974, p. 319.

⁴² N. M. LOWICK, *The Mint of Ṣan'ā': A Historical Outline*, in: R. B. SERJEANT & RONALD LEWCOCK (eds.), *Ṣan'ā', An Arabian Islamic City*, London, 1983, pp. 1–3.

⁴³ On the ninth century hoards see T. NOONAN, *Ninth-Century Dirham hoards from Northwestern Russia and the Southeastern Baltic*, in: *Journal of Baltic Studies* 13:3 (1982), pp. 220–244; idem, *Scandinavian-Russian-Islamic Trade in the Ninth Century*, in: *International Conference on Early Middle Ages* 15 (1990), pp. 53–63; idem, *Early Abbasid Mint Output*, in: *JESHO* 29:2 (1986), pp. 113–175; G. RISPLING, *Ninth-Century Dirham Hoards in Russia and the Baltic Region: A Report on Progress*, in: M. ANDERSEN, H. W. HORSNAES, J. C. MOESGAARD (eds.), *Magister Monetæ. Studies in Honour of Jørgen Steen Jensen*, Copenhagen, 2007, pp. 101–109.

⁴⁴ J. BURJAKOV, *L'extraction minière en Asie centrale aux VIII^e–XI^e siècles de notre ère*, in: É. DE LA VAISSIÈRE (ed.), *Islamisation de l'Asie centrale* (Studia Iranica 39), Paris, 2008, pp. 257–274. This article summarizes the studies done on the subject by Russian archeologists.

⁴⁵ NOONAN, *Volga Bulghāria*, p. 210.

⁴⁶ BURJAKOV, *L'extraction minière*, pp. 259 and 263.

the Ilak region produced 1.25 million cubic meters of silver-lead ore from about 13 mines. Kovalev estimated that the entire production of Ilak was 1,600 tons of silver.⁴⁷ Ilak, which produced bullion for the Shāsh mint also had a mint of its own and was surrounded by villages whose archaeological sites date from the ninth–tenth centuries, where the miners were lodged.⁴⁸ This region also produced the mercury used in the chemical separation of silver from other metals. The third zone was Sogdiana with various mines along the Zarafshan valley. The fourth was the Wakhan region between Mawarannahr and Khurasan. The Russian archaeologists who have studied the mines limited their investigation to the mining areas located within the regions of the former Soviet republics. This did not include the region around the Panjhir mines which were located in the Hindu-Kush mountain region in Northern Afghanistan, yet that region too, is believed to have been among the largest of those in the Islamic world exploited during the tenth century.⁴⁹ According to Lowick, the quality of the Panjhir silver is easily recognizable in chemical testing by the extremely low presence of gold and copper. This helped numismatists distinguish between two distinct groups of Islamic dirham hoards which differ from one another both chronologically and in mint location.

The mining industry provides a good demonstration of how the growing demand for silver had a stimulating effect on the local economy of the mining regions by encouraging manufacturing. It began with an increased demand for manpower, not only the miners but also those needed to cater for them, while mining towns grew up all around the mines. Housewares and clothing were discovered next to the mining tools and smelting installations.⁵⁰ The population of the mining areas also required supplies of food, animals and services which led to an expansion in agricultural cultivation in the neighbouring regions. The miners' needs for cloths, furniture and housing led to an increase in the manufacturing capacity of the towns and to the rise of new industries and provision of consumer goods. Last but not least, we may assume that the demand for bullion also led to an increase in wages, even though we cannot document it at this point.⁵¹ The labour related aspects of this cycle remain obscure, though labour may hold the key to the fact that, together with the almost complete disappearance of

⁴⁷ KOVALEV, *al-Shāsh*, p. 65.

⁴⁸ BURJAKOV, *L'extraction minière*, pp. 265–267.

⁴⁹ N. M. LOWICK, *Silver from the Panjhir mines*, in: *Metalurgy in Numismatics II*, London, 1988, pp. 65–69.

⁵⁰ BURJAKOV, *L'extraction minière*, pp. 263–270.

⁵¹ Compare with SPUFFORD, *Money*, pp. 132–133.

silver hoards in Northeastern Europe in the 990's,⁵² the Qarakhānids, who controlled the silver mines, minted dirhams which were gradually debased to the point that by 1050 they contained hardly any silver.⁵³

FLOW OF MONEY AND ECONOMIC GROWTH IN THE PERIPHERY

The changes in the quantity of money and accompanying developments such as increased circulation, monetization, did not happen systematically and uniformly throughout the Empire.⁵⁴ The production levels at the mints varied by region, depending on the availability of precious metal. Fiscal policies and economic conditions also varied enabling us to examine the relationship between money and economic growth in various regional patterns. Eighth century Islamic legal documents from Khurasan reflect monetization: Payments such as dowry, manumission or taxes were made in coins, albeit debased ones, while prices were set in "good" dirhams.⁵⁵ North Africa is another region which experienced slow monetization. More than a half of the dirhams found in Baghdad in 825–833 and sent to the Northeastern frontier have been struck in African mints between 775 and 795, but subsequently disappear from circulation. The monetary system of Muslim Spain is another example.⁵⁶ A hoard count of mint production in al-Andalus suggests a pattern of irregular dirham and dinar minting with intervals when no minting at all took place.⁵⁷ During the early years, 764–804, there was a modest, but stable, dirham production, which was followed by a lower degree of silver minting during the period

⁵² NOONAN, *Volga Bulghāria*, p. 206.

⁵³ KOVALEV, *Al-Shāsh*, p. 66.

⁵⁴ D. SOURDEL, *L'État impérial des califes Abbassides, VIII^e–X^e siècle*, Paris, 1999 — for a definition of the Abbasid state as an 'Empire' but with no attention given to the economy. For historical investigation of regional identity in Europe, see T. GRANIER, *Local or Regional Identity in Early Medieval Latin Southern Italy*, in: B. LANCASTER, D. NEWTON, N. VALL (eds.), *An Agenda for Regional History*, Newcastle, 2007, pp. 101–115.

⁵⁵ G. KHAN, *Arabic Documents from Early Islamic Khurasan*, London, 2007, p. 52. Khan concluded that the coinage used to denominate the sum of 500 dirhams pledged as a dowry were coinage which had a fifth of the value of standard full-weight dirhams.

⁵⁶ On the economy of Muslim Spain during the period under consideration see P. CHALMETA, *An Approximate Picture of the Economy of al-Andalus*, in: S. K. JAYYUSI (ed.), *The Legacy of Muslim Spain*, Leiden, 1992, pp. 741–758. On money see pp. 750–754.

⁵⁷ T. S. NOONAN, R. K. KOVALEV, *The Dirham Output of the Spanish Umayyad Amirate, ca. 756–929*, in: *Homenagem a Mário Gomes Marques*, Madrid, 2000, p. 254; O. R. CONSTABLE, *Trade & Traders in Muslim Spain. Commercial Realignment of the Iberian Peninsula, 900–1500*, Cambridge, 1994, pp. 38–41.

before 930.⁵⁸ From 889 to 929 mint production collapsed entirely, large scale production resumed from 940 onwards, producing double the amount of silver in the years following this date.⁵⁹ A similar situation can be observed in the minting of gold in al-Andalus. This ceased in 724 and did not resume until 929.⁶⁰ Unlike Umayyad Syria al-Andalus clearly experienced a delayed and slow recovery from the shortage of coinage in Spain under the Visigoths. This also throws into question the exploitation of ancient silver mines in Spain and whether or not the “loss of Spain to the Umayyads” actually had any relevance to money circulation in the eastern Caliphate, as Ehrenkrenz has suggested.⁶¹ In fact the numismatic evidence suggests that mint production in al-Andalus resembled the patterns of Western Europe rather than those of the Iraq-Iran and Central Asian regions.⁶² In his paper Chalmeta admitted that agricultural taxes were levied in kind in the ninth century but correctly observed the change which occurred in the tenth century, when revenue from commercial transactions increased.⁶³ Chalmeta claims that the Andalusian economic growth occurred because of the demographic growth; following the settlement of Berbers and that this was an increase in agricultural production alone without monetary circulation or trade activities. The correlation between economic growth and monetization is clear in this case: although observed in the tenth century it was delayed because of the sluggish monetary circulation which has persisted until the middle of that century.⁶⁴ In fact this persistence of monetary sluggishness in al-Andalus and its recovery later in the tenth century corresponds to the patterns of Mediterranean Europe rather than those of the Eastern Islamic regions as manifested by the small quantity of Arab coins found in Western European hoards, which bear witness to trade between Muslim Spain and the Carolingian Empire, its neighbour to the North.⁶⁵

⁵⁸ NOONAN, KOVALEV, *Spanish Umayyad*, p. 256.

⁵⁹ NOONAN, KOVALEV, *Spanish Umayyad*, p. 259.

⁶⁰ G. C. MILES, *Dinar*, in: *EP*.

⁶¹ A. EHRENKREUTZ, *Money*, in: *Handbuch*, p. 96.

⁶² P. SPUFFORD, *Money*, p. 36.

⁶³ The quote from Ibn Ḥawqal about the annual amount collected from the mint also refers to the tenth century, when minting resumed after 929. CHALMETA, p. 752.

⁶⁴ Both McCormick's book and the Noonan/Kovalev article were published after Chalmeta's paper but none discussed his conclusions.

⁶⁵ On the political relations between the two, see P. SÉNAC, *Les Carolingiens et al-Andalus (VIII^e-IX^e siècles)*, Paris, 2002. On the economy of Carolingian Europe see M. MCCORMICK, *The Origins of the European Economy, Communications and Commerce, A.D. 300-900*, Cambridge, 2001.

Table 2. Arab Coins in Western Europe Finds. Seventh–Tenth Centuries⁶⁶

Finds	Dinars	Dirhams	Copper
34	447	104	25

Hoards found along the routes leading from Muslim Spain to France reveal that between the years 692/694 and 844/845 only 22 coins, in all metals were found, and even those were coins partly struck in Ifriqiyya between 715 and 820.⁶⁷ There are 2 dinars in the group, one from Ifriqiyya, the other unidentified. As Professor McCormick observed, the Arab coins appear together with Byzantine ones in many cases, and their depositing patterns indicate movement up the rivers and across the mountains from the Mediterranean rather than across the Pyrenees. Typically enough, the single hoard containing silver dirhams which was discovered on the Northern border of the Carolingian Empire originated in the Northeastern trade and from the late ninth, early tenth century.

All of this makes the silver flow to Northeastern Europe even more significant. To what degree were European societies affected by the large quantity of money flowing into their territories for three consecutive centuries? Based on the earliest hoard found in the Caucasus (Azarbaydjan) in 771–772, the chronology of the Islamic/Northeastern trade was established as beginning in the second half of the eighth century and trade with Russia by a hoard dating from 786 to 787. From that date onwards, with almost no interruption until the mid eleventh century, the depositing of Islamic silver coins continued. In some regions such as Russia and Gotland, dirhams were deposited as late as c. 1150.⁶⁸ Further North a “second hand” trade with Sweden, Finland, Denmark, Norway, Poland, and the South-east Baltic which began as early as 770, was responsible for the 114,200 dirhams found in that region. With the Swedish Vikings dominating the Baltic trade with the East during the second half of the ninth century, the value of imports into Sweden totalled approximately 24,561 dirhams compared with 1,656 for Poland and Germany.

⁶⁶ M. McCORMICK, *Origins*, p. 344.

⁶⁷ McCORMICK, *Origins*, pp. 344–346.

⁶⁸ The reasons for the ending of the Northeastern trade are not clear. The standard explanation suggests political upheaval in the region. See on the role of the central Asian silver under the Mongols A. KURODA, *The Eurasian Silver Century, 1276–1359: Comensurability and Multiplicity*, in: *Journal of Global History* 4 (2009), pp. 245–269.

Table 3. Export of Islamic Coins to the Baltic

Area	Estimated No. of Dirhams Found	Estimated No. of Dirhams Imported
Sweden	70,000	140,000,000
Finland	1,700	3,400,000
Denmark	4,000	8,000,000
Norway	500	1,000,000
Poland/Polabia	30,000	60,000,000
South-eastern Baltic	8,000	16,000,000
Totals	114,200	228,400,000

The quantity of Islamic silver dirhams shipped to Europe was large by any stretch of the imagination and its flow was relentless since the Islamic/European trade consisted of strictly cash transactions. Yet, there is little evidence that it led to economic growth here, at least not in the terms of the structural changes in agriculture, manufacturing and services that we shall presently see taking place in the Islamic Empire. The impact of the Islamic money may have been felt in the courts of the Khazars, the Volga Bulgars, or the Kievan Rus, but not elsewhere. There is no evidence that the Muslims either exchanged manufactured goods in return for the furs they purchased from the Rus, or that they received coins, for the simple reason that their European partners did not have a monetary economy and no money; this also explains the intensive hoarding. All in all, the lack of any obvious impact of the Islamic money indicates that the availability of money alone would not result in structural changes if economic structures were non-existent or not sufficiently developed, which makes the case for the role of money in the economic growth of the Islamic Empire so pertinent and significant.

THE EFFECT OF MONEY ON DIFFERENT ECONOMIC SECTORS: MANPOWER

Two elements prevented the Umayyad Mediterranean economy from taking off during the seventh–eighth centuries: slow recovery in money supply and the long term effect of the demographic decline which took place during the late antiquity period. Further plagues continued to occur

up to and during the ninth century resulting in a population decline in the Jazira and Iraq. Archaeologists have concluded that a long term demographic decline occurred in eighth century Iraq as this was manifested by deserted villages and abandoned towns, which the study claimed, continued uninterrupted until the end of the medieval period.⁶⁹

Table 4. Estimated Number of Plague Deaths according to the Syriac Chronicle⁷⁰

Date	Estimated No. of Deaths	Location
541–543	5,000–16,000/day	Constantinople
541–543	Majority of population	Egypt
541–543	Entire villages and towns depopulated	Palestine
557–558	35,000 in three months	Amida
Mid 6 th — Mid 8 th century	Population repeatedly decimated	Levant
743–744	600,000 in one month	Bostra and Hawran
743–744	100,000	Mesopotamia
743–744	1,000/day	Lower Mesopotamia (Mawsil)
841–843	500/day	Ramla
841–843	Many villages deserted	Mesopotamia to Syria and the coast
841–843	1/3 of population	Palestine

In addition a detailed study of Arabic sources for the period concludes that the coastal cities were largely destroyed by the Byzantines before and during the conquest and that the Muslim authorities embarked on a project of settling soldiers there by raising their salaries and providing them with buildings both in the cities and in the immediate hinterland.⁷¹

⁶⁹ R. MCCORMICK ADAMS, *Land Behind Baghdad. A History of Settlement of the Diyala Plains*, Chicago, 1965. See also M. SHATZMILLER, *Labour in the Medieval Islamic World*, Leiden, 1994, pp. 55–68 on population size.

⁷⁰ M. G. MORONY, 'For Whom Does the Writer Write?' *The First Bubonic Plague Pandemic According to Syriac Sources*, in: L. K. LITTLE (ed.), *Plague and the End of Antiquity: The Pandemic of 541–750*, Cambridge, 2007.

⁷¹ A. ELAD, *The Coastal Cities of Eretz-Yisrael in the Arab period 640–1099 according to the Arabic sources* (in Hebrew), in: *The Jerusalem Katedra* 82 (1982), pp. 156–178.

Still, the sources show that in the middle of the seventh century a pronounced movement of people, both Arabs and Persians, who had lived in other cities took place, while in the mid-eighth century, Jews, gypsies, Slavs, and Christian peasants moved into the depopulated areas. In the ninth century the transfer of the gypsies from Iraq continued and attempts were made to settle nomads there. In addition to encouraging settlements by offering financial rewards, slaves were purchased from areas not affected by the plague and this was facilitated by the growing amount of money available. Most of these slaves were acquired from African sources (Blacks), Central Asia (Turks) and Northeastern Europe (Slavs). Research into the slave trade with sub-Saharan Africa has now established that a regular, yearly supply system had been in place since the beginning of North Africa's Islamization. Some slaves were brought to the Mediterranean for sale, while others were sold in East African ports as the demand came mostly from the Islamic Middle East.⁷² Austen estimated that between 650 and 1500 the entire slave trade involved about 5 million slaves, with at least 2 million to 2.5 million captured directly from the regions bordering the Red Sea, thus avoiding the "Western" road, via Sijilmasa and Fez, where it joined the gold export route. In the eighth–tenth centuries according to E. Savage slave export was managed single handedly by the Ibadī slave traders of Ifriqiyya.⁷³ Black soldiers were a common phenomenon in the Islamic armies of North Africa, particularly in Ifriqiyya where the dynasties more commonly employed servile black units, but there were also black soldiers in the Eastern armies, which may explain the military success of the Zanj revolt in ninth century Iraq.

Table 5. Estimated Number of Islamic Slaves⁷⁴

Number of Slaves	Where Slaves from	Where slaves taken	Period/Year
6,000,000	Africa	Islam	650–1500
60,000	Sind, South Asia	Inner Asia and Persia	712–13

⁷² R. AUSTEN, *African Economic History, Internal Development and External Dependency*, London, 1987, p. 59.

⁷³ E. SAVAGE, *A Gateway to Hell, a Gateway to Paradise*, Princeton, 1997, pp. 67–89.

⁷⁴ W. G. CLARENCE-SMITH, *Islam and the Abolition of Slavery*, Oxford, 2006, pp. 11–16.

Number of Slaves	Where Slaves from	Where slaves taken	Period/Year
Several million	Turks	Central Islam	9 th –14 th centuries
70,000–100,000+	Turks	Caliphate Turkish Military Slave Corps	9 th century
?	Circassian military slaves	Egypt	From 1382
Thousands	India	West Turkistan	Late 14 th century
Millions (only slightly less common than Turks and Africans)	Europe, Egyptians, Syrians, Persians, Berbers, and Iberians	Islam	Up until 16 th century
200,000	Balkans	Ottomans	1400–1650
2,500,000	North of Black Sea (incl. some Circassians)	Ottomans	1450–1700
1,750,000	North of Black Sea (Ukrainians, Poles, Russians)	Ottomans	1468–1694

The import of Turks also increased in the ninth century, something which has been documented by the Abbasid chroniclers as they trace the role of the Turkish guard in the civil wars of 815–889. This guard, which accompanied the Caliph to the new capital Samarra, were slaves brought to Iraq from Transoxiana and the Caucasus, especially the Khazar lands.⁷⁵ The size of the guard is given as 4,000 strong. The great slave markets were located in Basra, Baghdad and Khwarazm.

⁷⁵ The story of the Turkish guard is told in M. S. GORDON, *The Breaking of a Thousand Swords. A History of the Turkish Military of Samarra (A.H. 200–275/815–889 C.E.)*, Albany, 2001. In spite of the recent interest in the Turkish military slaves there has been little research into the economic dimensions of the phenomena, prices, numbers, organization, dynamics etc. See also P. CRONE, *Slaves on Horses. The Evolution of the Islamic Polity*, Cambridge, 1980; D. PIPES, *Slave Soldiers and Islam. The Genesis of a Military System*, New Haven — London, 1981.

Table 6. Prices of Slaves in the Islamic World Eighth–Tenth Centuries⁷⁶

Year	Gender	Location	Price/slave
Second half of the 7 th century	?	Kūfa	50 dinars (600 dirhams)
Umayyad period	Pretty girls for harem	?	400 dinars (5000 dirhams)
772	Both (young)	Abbasid Empire	0.4 dinars (5 dirham)
Second half of the 8 th century	?	Baghdad	17 dinars (200 dirhams)
Middle of the 8 th century	Young girls	Gondeshapur	66 dinars (800 dirhams)
End of the 8 th century	?	?	150 dinar
End of the 8 th century	?	?	70 dinars
End of the 8 th century	?	Baghdad	50 dinar
First half of the 9 th century	Male	Basra	30 dinars
First half of the 9 th century	?	Oman	30 dinars (king price) 160 dinars (other)
First half of the 9 th century	?	Iraq	20–30 dinars
10 th century	?	?	300–333– 1000 dinar

European historians were intrigued by the effect of the Muslims' increased supply of money and its effect on the European economy. Spufford has observed that the decline in the money supply during the latter ninth century and the early tenth century, the considerable decline in the use of money and the quantity of coin in circulation may be explained by the cessation of slave exports from Europe to the Islamic lands. According to him slaves were paid for in gold coins of the *mancus* fame, money which

⁷⁶ ASHTOR, *Prix et Salaires*, pp. 57–59.

was used by nobles and churchmen to buy oriental goods, particularly spices, but also garments.⁷⁷ When the gold ran out, payments were made to the Muslims in silver, this, too eventually ran out when the European silver mines became depleted.⁷⁸ As a result the increased amount of money available in the Islamic lands had an immediate effect on Europe's monetary circulation, once the trade in slaves ceased. G. Duby claimed that the Muslims' superior monetary power played a crucial role in bringing an end to slavery in Europe.⁷⁹ He argued that it was neither the Church, nor the end of military raids on the margins of the Carolingian Empire which brought about an end to slavery in medieval Europe; rather it was the constant demand for slaves coming from the Muslim world and their power to pay for them, something which Europe did not have.⁸⁰ As a result Europeans had to abolish slavery entirely.

Even if the increase in slave imports together with new settlements and natural growth did not change the demographics in the Empire, it at least improved the manpower situation. The structural changes in agriculture, manufacturing and trade cannot be understood without it.

AGRICULTURE, TAXES IN CASH, KIND AND *SUFTAJAS*

Table 7. Annual Taxes Collected from the Abbasid Provinces Circa 785⁸¹

Province	Cash Dirhams	Cash Dinars	Collected in Kind
Sawad	27,780,000+ 14,800,000		200 Najrāni cloaks, 240 pounds sealing clay
Kaskar	11,600,000		
Tigris counties	20,800,000		
Hulwan	4,800,000		

⁷⁷ SPUFFORD, *Money*, p. 61.

⁷⁸ *Ibid.*, pp. 55–73, on the slow revival of deniers' minting by Carolingian and post or sub-Carolingian mints, *Money*, p. 60.

⁷⁹ See P. BONNASSIE, *From Slavery to Feudalism in South-Western Europe*, Cambridge, 1991, pp. 1–60, summarizing and correcting M. Bloch's thesis on the reasons for the disappearance of slavery in Europe.

⁸⁰ G. DUBY, *The Early Growth of the European Economy, Warriors and Peasants from the Seventh to the Twelfth Centuries*, tr. by H. Clarke, London, 1974, p. 40; BONNASSIE, *Slavery to Feudalism*, pp. 6–7, and that of the religion and the Church, pp. 25–32.

⁸¹ IBN KHALDUN, *The Muqaddimah* I, tr. F. Rosenthal, pp. 362–363 (see the following note).

Province	Cash Dirhams	Cash Dinars	Collected in Kind
Al-Ahwaz	25,000		30,000 pounds sugar
Fars	27,000,000		30,000 Rose water bottles, 20,000 pounds black raisins
Kirman	4,200,000		500 Yemenite garments, 20,000 pounds dates, 1,000 pounds cumin seeds
Mukran	400,000		
Sind	11,500,000		150 pounds Indian alce wood
Sistan	4,000,000		300 checkered garments, 20,000 pounds sugar-candy
Khurasan	28,000,000		1,000 Silver ingots, 000 pack animals, 1,000 slaves, 27,000 garments, 30,000 pounds myrobalan
Jurjan	12,000,000		1,000 silk pieces
Qumis	1,500,000		1,000 silver ingots
Tabaristan, ar-Ruyyan, Nihawand	6,300,000		600 Tabaristan carpets, 200 robes, 500 garments, 300 napkins, 300 goblets
Ar-Rayy	12,000,000		20,000 pounds
Hamadhan	11,800,000		1,000 pounds Pomegranate marmalade, 12,000 pounds honey
The region between al-Basra and al Kufah	10,700,000		
Masabadhan and ar-Rayyan	4,000,000		
Shahrazur	6,000,000		
Mosul	24,000,000		20,000 pounds white honey

Province	Cash Dirhams	Cash Dinars	Collected in Kind
Azerbaijan	4,000,000		
Al-Jazira and Euphrates districts	34,000,000		
Karaj	300,000		
Jilan	5,000,000		1,000 slaves, 12,000 bags honey, 10 falcons, 20 robes
Armenia	13,000,000		20 embroidered carpets, 20,580 pounds variegated cloths, 10,000 pounds salted fish, 10,000 pounds herring, 200 mules, 30 falcons
Qinnasrin			1,000 loads raisins
Damasous			
Jordan		400,000	
Palestine		420,000	300,000 pounds raisins
Egypt		96,000	
Barca	1,000,000	310,000	
Ifriqiyya	13,000,000	1,920,000	120 carpets
Yemen			Excluding garments
Hijaz		300,000	
Total	313,780,000	3,816,000	

The capacity of the Islamic Abbasid Empire to tax effectively and regularly has been disputed, in spite of the existence of financial records in the form of state budgets.⁸² The bureaucracy in Baghdad was responsible

⁸² The numbers are calculated based on Ibn Khaldun's list. IBN KHALDŪN, *The Muqaddimah* I, tr. by Frantz Rosenthal, Princeton, 1958, pp. 361–365. For variations on this list see SALEH AHMAD EL-ALI, *A New Version of Ibn al-Mutarrif's List of Revenues in the early Times of Hārūn al-Rashīd*, in: *JESHO* 14:3 (1971), pp. 303–310. Several variations of the Abbasid state budgets were studied by A. VON KREMER, *Kulturgeschichte des Orients* I, Vienna, 1875, p. 263. Von Kremer was able to use about five different contemporary sources but no comparative or quantitative work was done on the lists.

for recording, estimating, and calculating the relevant amount of taxes and recording them in cash and kind, which is by itself an indication of a sophisticated level of administration, not to be experienced by any of the European states for quite some time to come.⁸³ However, one of the more difficult points to establish is whether taxes recorded in the ledger as cash were actually paid in cash. The significance for the economy is clear. It means that there was sufficient money in the rural areas, markets and efficient exchanges, and wide range of transactions. From an administrative perspective when rents and taxes are paid in cash they are cheaper and more effective to collect, transfer and use. As a rule, Medieval and pre-modern societies had a low monetization in the countryside, and as they became able to increase their cash payments, the effect on economic and social relations was palpable. A claim that in the Roman economy the rural areas had sufficient specie to pay cash taxes is far from being proven.⁸⁴ Neither has the question of whether taxes were paid in cash in the areas under Byzantine rule between the eighth and the tenth centuries been resolved,⁸⁵ since barter trading continued in the rural areas, where textiles were traded by merchants against produce. For instance, in Carolingian Europe landowners received cash taxes in various amounts, ranging from 3 % in silver, as in the case of lands held by the Church, to 24 % in deniers from free holders, the rest was paid in kind and services.⁸⁶ By the end of the ninth century a lower level of monetary circulation returned, and rents, even from the cities, were paid in honey, cheese or salt.⁸⁷ In comparison the figures of 313,780,000 dirhams and 3,816,000 dinars as tax income for 785 are impressive and may be taken as a sign that an increased monetization of the economy occurred; if indeed all taxes were paid in cash, it is a testimony to the amount of money then in circulation. However, there is some evidence that the administration may have preferred to collect taxes in cash and tried to enforce it but that this caused disruption in the economy. The attempt of the first Abbasid Caliph al-Manşūr in 755 to collect taxes in cash from Armenia resulted in a major decline in the price of produce in the markets.⁸⁸ Despite of the fact that this attempt failed there was another attempt in the tenth–eleventh centuries, shows that the

⁸³ See R. HELLIE, *Russia, 1200–1815*, in: R. BONNEY (ed.), *The Rise of the Fiscal State in Europe, c. 1200–1815*, Oxford, 1999, pp. 481–505.

⁸⁴ HOPKINS, *Taxes*.

⁸⁵ LAIOU, *Exchange and Trade*, pp. 708, 733.

⁸⁶ SPUFFORD, *Money*, 47.

⁸⁷ *Ibid.*, *Money*, pp. 60–61.

⁸⁸ H. A. MANADIAN, *The Trade and Cities of Armenia in Relation to Ancient World Trade*, tr. by N. Garsoian, Lisbon, 1965, pp. 132–134.

administration saw it as a priority.⁸⁹ The demand to pay taxes in cash would force the peasants to sell their produce in the market to raise the money they need. This problem could well have lain behind a decision taken in 895 by the administration to postpone remittance of the taxes from April to June to allow time for the crops to ripe and make produce available to peasants to sell.⁹⁰ In the eighth century documents from Khurasan showed that the amount of taxes was calculated in cash but G. Khan conclude that “The tax may have been paid in cash, in kind or in a combination of the two, as was frequently the practice in later periods.”⁹¹ However, since the government’s demand to pay taxes in cash resulted in low prices for rural products in the markets during the tax collection period, it may be suggested that in an effort to prevent this slump in prices, some of the regions had their taxes directly denominated as payable in kind and were transported to the capital. The large quantity of food items: 30,000 pounds of sugar from Ahwaz, 20,000 sugar candies from Sijistan, 1,000 pounds of pomegranate marmalade and 12,000 pounds of honey from Hamadhan, 20,000 pounds of honey from Mosul, 12,000 bags of honey from Jilan, and large amounts of raisins, salted fish, cumin seeds and myrobalan, could have been used to supply the markets in the capital with specific items, used in the court or sold in the local markets to raise cash. The silver mining areas like Qumis and Khurasan also sent taxes in silver ingots, paying 28,000,000 dirhams. Transferring of the taxes in kind from the regions on the periphery to the centre in Baghdad would have been equally expensive and this explains why in many instances the means of transportation were included as part of the tax payment. In the case of Armenia, for example, 200 mules transported 20 embroidered carpets, 20 variegated cloths, 580 pounds salted fish, 10,000 pounds herring, and 30 falcons. Similarly, in the case of Khurasan, 4,000 pack animals carried 1,000 silver ingots, 1,000 slaves, 27,000 garments, and 30,000 myrobalan. When slaves were included, as in the case of Khurasan and Jilan, they may well have been used as porters to help transport the goods. The numbers which appear in the successors’ state budgets such as the Ṭāhirid or the Sāmānid, point to a consistently greater degree of monetization. By the ninth century the Abbasid administration had an annual income from within Samarra of 10 million dirhams, which included

⁸⁹ Ibid., p. 141.

⁹⁰ A. AL-HASAN, *The Financial Reforms of the Caliph al-Muʿtaḍid (279–89/892–901)*, in: *Journal of Islamic Studies* 18:1 (2007), pp. 5–6.

⁹¹ KHAN, *Arabic Documents*, p. 48.

rent from shops.⁹² But agricultural revenue was still the major source. In 845 the Tāhirid state had a total revenue of 44,846,000 dirhams from *kharāj* lands in Khurasan.⁹³ By the tenth century the Sāmānid dynasty had an annual budget of 45,000,000 dirhams, out of which it paid 20 million a year to the army.⁹⁴ By comparison, only 1.25 million dirhams representing 2.7 % of the annual Sāmānid budget were spent yearly in trade with northern Europe.⁹⁵

A further indication of the effect of the increased amount of money in circulation is the emergence of credit instruments, best documented through the use of the *suftaja* for the transfer of tax money from the provinces to the capital. As a precursor or equivalent of the cheque the *suftaja* should not be confounded with a letter of credit, or bill of exchange typical of the European commercial revolution. In an article published in 1975, Abraham Udovitch discussed the role of credit in the Islamic international trade, concluding that “not only was international trade impossible without the use of credit, but credit sales were the surest, if not always the swiftest, method of achieving profit.”⁹⁶ In another publication, he added “(...) it (credit instruments) contributed to trade by enabling merchants to do business in an age when the supply of coins was frequently inadequate.”⁹⁷ However, at that period credit did not appear in international trade transactions between Muslim traders and certainly not between Muslims and Vikings, Khazars or Bulgars. The international trade was conducted in cash, but the combined tasks of the merchant cum tax collector, found in tenth century Baghdad, may illustrate the connection. *Suftajas* were devised precisely in order to avoid transporting a large amount of specie, especially tax money by means of overland or maritime transport. Tax collectors accumulated capital and had it deposited in pseudo-banks, or family firms in Baghdad, and elsewhere so an order of pay could be drawn on accounts instead of sending cash. Much of the information on the *suftajas*, dates from the tenth century and has been collected from the activities of

⁹² GORDON, *Breaking*, p. 120, note 151.

⁹³ *Ibid.*, p. 35.

⁹⁴ KOVALEV, KAELIN, *Circulation of Arab Silver*, p. 9. By comparison the Turkish officers in Samarra were paid 400,000 dinars annually, GORDON, *Breaking*, p. 120.

⁹⁵ KOVALEV, KAELIN, *Circulation of Arab Silver*, p. 8.

⁹⁶ A. L. UDOVITCH, *Reflections on the Institutions of Credit and Banking in the Medieval Islamic Near East*, in: *Studia Islamica* 41 (1975), p. 9.

⁹⁷ A. L. UDOVITCH, *Bankers without Banks: Commerce, Banking, and Society in the Islamic World of the Middle Ages*, in: *The Dawn of Modern Banking*, New Haven — London, 1979, p. 262. Most of the empirical data discussed in the paper is based on S. D. GOITEIN, *Bankers Accounts from the Eleventh Century A.D.*, in: *JESHO* 9 (1966), pp. 26–68. The legal authority discussed is al-Sarakhsī who was active in the eleventh century.

the Jewish traders, who doubled as tax collectors and as bankers to the Caliphs.⁹⁸ Payment of taxes in *safātij* were made from the provinces of Ahwaz, Fars, Isfahan and the Eastern provinces, after a ship carrying the tax revenue from Ahwaz was robbed in 931.⁹⁹ The usefulness of *suftaja* as a financial tool is explained by the time consuming process not only of collecting the taxes but also, in the case of taxes collected in kind, the need to sell them in the local market and raise cash in the provinces.

MANUFACTURING AND DIVISION OF LABOR

Table 8. Number of Occupations in Sectors of Employment¹⁰⁰

Sector of Employment	Number of Unique Occupations (Cases) 8 th –11 th Century	Number of Unique Occupations (Cases) 12 th –15 th Century
Primary/Extractive	49 (63)	29 (35)
Secondary/Manufacturing	418 (697)	398 (679)
Tertiary/Service	522 (736)	883 (1175)

Labour was an important component of the economic growth scenario, and changes in the labour scene were so important that they altered the ‘scale of manufacturing’ in terms of efficiency, cost, productivity, and volume. Since sufficient evidence on wages, real or otherwise is still lacking, I will use the results of my study on labour organization and in particular on division of labour, to document the structural changes in the sector.¹⁰¹ Extended division of labor in manufacturing maximizes the usage of manpower, by making the manufacturing process more efficient and results in increased productivity. Using a technique named occupational classification in economic sectors, the study concluded on the basis of the statistics achieved, that a considerable division of labour occurred in both the manufacturing sector and the service one. To illustrate the linkages we may examine the case of the textile industry.

⁹⁸ W. J. FISCHER, *Jews in the Economic and Political Life of Medieval Islam*, New York, 1969, pp. 1–44. Whether or not credit was indeed operative “from as early as the eighth century” remains to be further investigated. UDOVITCH, *Bankers*, p. 262.

⁹⁹ See FISCHER, *Jews in the Economic and Political Life*, pp. 17–21.

¹⁰⁰ M. SHATZMILLER, *Labour in the Medieval Islamic World*, Leiden, 1994, p. 170.

¹⁰¹ SHATZMILLER, *Labour*.

Table 9. Textiles as Taxes the Abbasid State Budget of 785¹⁰²

300 checkered garments from Sijistan
27,000 garments from Khurasan
600 Tabaristân carpets
200 robes
500 garments
300 napkins
20 robes from Jilan
20 embroidered carpets
20 variegated cloths from Armenia
120 carpets from Ifriqiyya

As Table 9 shows growth in the manufacturing sector is expressed in the large quantity of textiles in the tax list but growth appeared across-the-board. Not only did the number of occupations related to mining and minting increase, but the financial and commercial occupations related to activities in commerce, transport, exchange and finance showed an extensive division of labour.¹⁰³ The formation of the state's legal and fiscal institutions involved with budgets, tax collection and legislation occurred in the eighth and ninth centuries, and as a result the number of occupations in the service sector related to them, also increased. In the case of the textile industry the rise in the number of textile manufacturing occupations corresponded to the increase in number of occupations in all sectors related to textile production. What was the spark which initiated the growth in this case? Opinions varied: Spufford, who traced the increase in the amount of money in circulation to the activities in the mining towns,¹⁰⁴ was not convinced that such was the case elsewhere. He denied that there was a connection between the rise of industries in the thirteenth century, in particular the textile industry in Flanders, with the demands generated in the mining areas of Meissen or Bohemia,¹⁰⁵ though the evidence from trade records for Europe also indicates clusters of textile producing centres along the trade routes.¹⁰⁶

¹⁰² IBN KHALDUN, *The Muqaddimah* I, tr. F. Rosenthal, pp. 362–363.

¹⁰³ SHATZMILLER, *Labour*, pp. 259–275.

¹⁰⁴ SPUFFORD, *Money*, pp. 132–162.

¹⁰⁵ *Ibid.*, p. 143.

¹⁰⁶ H. VAN DER WEE, T. PEETERS, *Un modèle de croissance interséculaire du commerce mondial*, in: *Annales*, É.S.C. 25:1 (1970), pp. 100–126. On medieval woolen textiles 800–1500,

The increased productivity in the textile industry may be argued on the basis of the state budgets where the surplus was collected as taxes and registered side by side with cash taxes in dirhams and dinars, as we saw in Table 7.

Table 10 Occupations in the Manufacturing Sector According to Type¹⁰⁷

Type	Number of Unique Occupations (Cases) 8 th –11 th Century, 12 th –15 th Century
Chemical	16 (29), 11 (26)
Construction	50 (64), 39 (58)
Food Processing	88 (156), 86 (170)
Glass	13 (20), 8 (13)
Leather	39 (72), 38 (64)
Metal	68 (111), 63 (100)
Paper	4 (8), 3 (9)
Pottery	17 (26), 9 (10)
Textile	80 (128), 90 (145)
Wicker	20 (26), 17 (22)
Wood	32 (50), 35 (53)
General	5 (6), 7 (9)

But it is Egypt's textile industry which provides a demonstration of the link between capital accumulation in the hands of tax collectors and investment in industries. In an article drawing on papyri and chronicles, Gladys Frantz-Murphy has shown that the landowners who collected the taxes for the government did not actually remit them to Baghdad. Instead they invested them in the development of textile "industry", by ordering large amounts of finished cloths and paying for them in advance, in a sense creating factories for the sake of trade.¹⁰⁸ This was the rationale behind the improved agricultural conditions on their land. By making these investments, the tax collectors turned entrepreneurs managed to

see J. MUNRO, *Medieval Woollens: Textiles, Textile Technology and Industrial Organisation*, in: D. JENKINS (ed.), *The Cambridge History of Western Textile*, Cambridge, 2003.

¹⁰⁷ SHATZMILLER, *Labour*, p. 201.

¹⁰⁸ G. FRANTZ-MURPHY, *A New Interpretation of the Economic History of Medieval Egypt*, in: *JESHO* 24:3 (1981), p. 295.

take advantage of their situation and accumulate the capital needed to effect a transition from a “subsistence economy” into a more sophisticated and prosperous market economy, in other words, commercialization. The political and economic consequences were important. From the ninth until perhaps the late thirteenth century flax was the primary commercial crop in Egypt, and Frantz-Murphy concluded that the prosperity of Fatimid Egypt, in the tenth–eleventh centuries should be attributed “to the development of the textile industry in the Tūlūnid period”.¹⁰⁹ The Abbasid administration which was successful in collecting large amount of taxes from the rich agricultural sector in Egypt during the eighth century, spent its resources during the ninth and tenth centuries engaging in battles with the governors of the country over the taxes, sending their armies and administrators. In terms of our study of the process of economic growth, the behaviour of these individual entrepreneurs as capitalistic agents fits the behaviour patterns of the tax collectors observed earlier in Baghdad.

TRADE

We have seen how the increase in money supply helped capital accumulation in the hands of merchants, and how it made possible the creation of industries. However, merchants contributed to the process in other ways of distinct capitalistic features. They made transactions more efficient, by shifting traditional trade routes to more profitable ones, encouraging urbanization and industrialization along the new routes. The hoards show that the amount of dirhams minted for trade purposes increased at intervals, and that the money supply increased thanks to the availability of silver bullion, but they also hint at how Islamic trade also became more efficient and cost saver. When the Northeastern trade resumed, after the inauguration of Islamic rule, the Viking traders came directly to Baghdad with their merchandise. This changed partly through the rise of intermediaries, the Khazars and then Volga Bulgars, but more importantly, because Muslim traders took the initiative and travelled themselves in order to be closer to the supply sources. This also allowed them to control the exchange, verify prices, control the amount of the items, their volume and make on the spot decisions on the payment. By executing the deals closer to the border, merchants active in the international trade cut costs, travelling shorter distances, and deciding where the transaction will take

¹⁰⁹ *Ibid.*, p. 277.

place, which was sometimes in proximity to either the mines or mint routes leading to the Caucasus, the Black Sea, the Caspian Sea and the Aral Sea. The size of the North-eastern trade caravans grew to 2,000 camels a caravan and as a result the amount of merchandise acquired for the Islamic markets also grew. The demand for Islamic silver also made it possible for the Muslim traders to impose these transaction costs. Relations with the intermediaries increased too and resulted in acculturation to Islamic norms, religion and money; this made the exchange more secure, more regular and more stable. Khazars, Bulgars, and Kievan Rus all minted pseudo-Islamic imitations of *dirhams*, which they used as an economic tool.¹¹⁰

A more vigorous structural change in the Islamic trade was the shift of the trade routes themselves from maritime to overland and from inter-Mediterranean to intercontinental. Islamic trade, especially the one associated with the Pirenne Thesis and the early period, is frequently associated with Mediterranean and the Indian Ocean models, described by K. N. Chaudhuri, which is none other than an adaptation of the Braudelian model of the Mediterranean lands as connected by water, complete with the notion of the *longue durée*, in other words, geographical and social paradigms which have created long term, long-lasting structures in the region for hundreds of years.¹¹¹ However, the evidence of the chronicles, geographers as well as the location of mines, mints and hoards point to a different network of routes, one which went overland from Baghdad North and East towards Russia and only rarely crossed Central Asia towards China. Furthermore, the sources make no mention of any Red Sea trade in the pre-Geniza documents period and no evidence is found that Islamic states along the Indian Ocean minted silver dirhams or dinars of their own.¹¹²

¹¹⁰ Even the Rus made imitations of *dirhams* with cross and bird inside the Kufic dirham legends. See G. RISPLING, *Coins with Crosses and Bird Heads: Christian imitations of Islamic Coins?*, in: *Fornvännen* 82 (1987), pp. 75–87.

¹¹¹ See K. N. CHAUDHURI, *Trade and Civilization in the Indian Ocean*, pp. xi–xiii, 1–6. In spite of criticism of the Braudel's Mediterranean model, the idea of organizing economic activity around a body of water is alive and well. See for analysis of the Atlantic ocean case B. BAILYN, *Atlantic History: Concept and Contours*, Cambridge, 2005.

¹¹² M. SHATZMILLER, *Transcontinental Trade and Economic Growth in the Early Islamic Empire: The Red Sea Corridor in the 8th–10th centuries*, in: *Connected Hinterlands. Proceedings of the Fourth International Conference on the People of the Red Sea Region*. Society for Arabian Studies, 2009, pp. 119–130; and M. SHATZMILLER, *A Misconstrued Link: Europe and the Economic History of Islamic Trade*, in: *Relazioni economiche tra Europa e mondo islamico. Secc. XIII–XVIII*, a cura di S. Cavaciocchi, Firenze, 2007, pp. 237–415. *Le Monnier / Istituto Internazionale di Storia Economica "F. Datini"*, Atti delle Settimane di Studi e altri convegni, p. 38.

This state of affairs is further demonstrated by the lack of any manufacturing facilities in the port cities of the Persian Gulf, the Arabian coast and the Red Sea, neither for local consumption nor for export. These areas lacked an agricultural hinterland and could only serve as depots for merchandise arriving and leaving the port on its way to somewhere else. Instead we have evidence for both local and export geared manufacturing along the new overland trade routes, together with new urban centers.

Table 11. Exported Merchandise to Baghdad from the Trading Zone 10th Century¹¹³

Location	Items exported
Naysabur	11 different items of clothing and garments, including veils and turbans, all made of expensive cloth, sometimes silk, sometimes plain cloth as well as bracelets, clothing of hair of superior yarn, iron. From Naysabur's rural districts, much thick clothing
Nasa and Abiward	Silk and silk clothes and clothes of Zanbaft, sesame and its oil, fox fur
Tus	Superior earthenware pots, mats and grain
Harat	Much cloth, silk brocade of inferior quality, taffeta, raisins, syrup steel, pistachios and confections
Marw	Garments, veils of silk, silk, cotton, cattle, cheese, cottonseed oil, sesame oil, copper
Sarakhs	Grain and camels
Sijistan	Dates, woven baskets, ropes of bast, mats
Quhistan	White clothing, rugs fine dates
Balkh	Sesame, soap, rice, walnuts, almonds, raisins, dried grapes, clarified butter, honey from grapes, figs, pomegranates, vitriol, sulphur, lead, yellow herb, arsenic, incense, armor, garments, oil, fat, skins
Garj al-shar	Gold, felt, fine carpets, saddle bags, excellent horses and mules

¹¹³ AL-MUQADDASĪ, *The Best Divisions for Knowledge of the Regions, a translation of Ahsan al-Taqasim fi ma'rifat al-Aqalim*, tr. B. A. Collins, Reading, 1994, pp. 285–288.

Location	Items exported
Tirmidh	Soap, asafetida [a natural resin]
Walwalij	Sesame, sesame oil, walnuts, almonds, pistachios, rice, chick-peas, coverlets, cheese, clarified butter, horns, fox pelts
Bukhara	Soft fabrics, dried dates, prayer-carpets, woven fabrics for covering the floors of inns, copper-coloured lamps, hanging Tabari tissues, horse-girths (which are woven in prisons) Ushmuni fabrics, tallow and the 10 th century sheepskins, oil for anointing the head. There is nothing to equal the meats of Bukhara, and a kind of melon they have called ash-shaq (or ash-shaf)
Karminiya	Napkins
Dabusiya and Wadhar	Wadhari fabrics which are dyed in one color. I have heard that one of the sultans of Baghdad called them the satin of Khurasan
Rabinjan	Winter cloaks of red felt, dried dates, prayer-carpets, pewter ware, skins, strong hemp and sulphur
Khorezmia (Khawarazm)	Sables, squirrels, miniver, ermines and the fur of steppe foxes, martens, foxes, beavers, spotted hares and goats, wax, arrows, birch-bark (cork), high fur caps, fish glue, fish teeth (walrus), castoreum oil, amber, prepared horse hides, honey, hazelnuts, falcons, swords, armour, khalanj wood (birch wood), Slavonic slaves, sheep and cattle. All these came from Bulghar. Khorezmia also exported jujubes, raisins, almond pastry, sesame, fabric of striped cloth, carpets, blankets cloth, satin for royal gifts, veils of malham fabric, locks, Aranj arrows for bows which only the strongest could bend, rakhbin (a kind of cheese) yeast, fish, boats hewn and smoothed (the latter also exported from Tirmidh). Bows of Khorezmia
Samarqand	Silver colored fabrics (simgun), and Samarqandi stuffs, large copper vessels, artistic goblets, tents, stirrups, bridle-heads and straps. Satin which is exported to the Turks and red fabrics known by the name of mumarjal, sinizi cloth, many silks and silken fabrics, hazel and other nuts. Paper of Samarqand
Dizak	Fine kinds of wool and woolen clothes
Banakath	Turkistan fabrics

Location	Items exported
Shash	High saddles of horsehide, excellent quality quivers, tents, hides (imported from the Turks and tanned), cloaks, prayer carpets, leather capes, linseed, fine bows, needles of poor quality, cotton for export to the Turks, and scissors. Porcelain of Shash
Farghana and Isfijab	Turkish slaves, white fabrics, arms, swords, copper, iron
Taraz (Talas)	Goatskins
Shalji	Silver
Turkistan and Khuttal	Horses and mules are driven to those places, and also from Khuttal

Table 11 list of cities and the manufactured items they exported illustrates the link between trade and the development of urbanization and industries, includes also the international portion of the trade with Russia of items entering the Islamic world through Khwarazm. The appearance of a trade model which brings together interregional trade and clusters of cities along the overland routes resembles another model proposed by Herman van der Wee and Theo Peeters for similar conditions in Europe.¹¹⁴ The authors argue that there was an observable link between European prosperity and overland routes and that that link was the encouragement of industries along the routes. The authors show that while the twelfth, thirteenth and sixteenth centuries were indeed periods of global economic expansion, they actually corresponded to prosperous transcontinental European commerce. The fourteenth, fifteenth as well as much of the seventeenth centuries were periods of economic regression, characterized by a retreat, recession or decline of the transcontinental European trade but an intensification of maritime expansion.

That link, between overland trade and the development of industries observed in the Islamic case was the final stage of the process of economic growth, the culmination of the effect of increased agricultural productivity, division of labour, market formation, consumer demand etc.

¹¹⁴ H. VAN DER WEE, T. PEETERS, *Un modèle*, p. 101.

CONCLUSION

In this paper I have argued that between the seventh and the tenth centuries the Islamic lands displayed considerable economic growth which was achieved by an interaction of several factors. I argued that the main factor was an increased money supply which was the result of a deliberate policy on the part of the first Islamic rulers and led to continuous exploitation of rich resources of silver mines. The regular supply of dirhams throughout the entire period enabled structural changes to take place in the three sectors of agriculture, manufacturing and service and sustained economic growth throughout. I further corroborated the centrality of the increased money supply to the process by showing that the regions where it was absent, such as Muslim Spain, or the Syrian coastline, could not benefit from the same growth. Individual degrees of accelerated or sluggish minting activities, determined monetary circulation which in turn affected economic growth. The lack of a sufficient amount of money in circulation, whether in the rural areas or in the cities, prevented capital accumulation and investment. Furthermore, the Islamic silver revolution, because this is what it was, occurred away from the Mediterranean and thus failed to affect Mediterranean Europe. It may have had some effect on the Russian and Scandinavian regions, but this, as well as the effect on the Carolingians, remains to be shown. Then, as today, while the role of money is a central component, comparative regionalism, with a centre and a periphery, or simple geography, may make or break a better functioning economy.