“Westward the Course of Empire Takes its Way”: The Western Han Empire’s Expansion to the Hexi Region

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Abstract

This thesis investigates the Western Han empire's strategies for addressing the logistical challenges associated with its imperial expansion, with a particular focus on how the court established control over remote areas and overcame the obstacles presented by vast distances. The research specifically targets the Hexi region, which serves as a pivotal case study for understanding the Han's approach to distance. Chapter 1 utilizes the Least Cost Path Analysis (LCPA) to construct a database from the *Mileage Book of Postal-Relay Stations* and the *Document of Mileage*, identifying efficient routes and analyzing distances between key locations. Chapter 2 scrutinizes the significant expenses incurred during the Hexi Campaign and the subsequent costs of maintaining a military presence in the area. It also examines the economic reforms implemented under Emperor Wu's rule, highlighting new taxes and fiscal reforms aimed at supporting distant military operations. Chapter 3 discusses the establishment of agro-military settlements in the northwest, which were instrumental in bridging both physical and cultural distances. By fostering agricultural development and encouraging Han settlement in frontier regions, the policy sought to integrate these territories more closely with the imperial core, reducing the economic burden of logistics.

Résumé

Cette thèse examine les stratégies de l'empire des Han Occidentaux pour relever les défis logistiques liés à son expansion impériale, en se concentrant particulièrement sur la manière dont la cour a établi le contrôle sur les territoires éloignés et surmonté les obstacles posés par les vastes distances. La recherche cible spécifiquement la région du Hexi, qui sert de cas d'étude crucial pour comprendre l'approche des Han vis-à-vis de la distance. Le chapitre 1 utilise l'analyse du chemin de moindre coût (Least Cost Path Analysis, LCPA) pour construire une base de données à partir du Livre des distances des stations de relais postales et du Document des distances, identifiant les itinéraires efficaces et analysant les distances entre les lieux clés. Le chapitre 2 examine les dépenses importantes engagées pendant la campagne du Hexi et les coûts suivants de maintien d'une présence militaire dans la région. Il étudie également les réformes économiques mises en œuvre sous le règne de l'empereur Wu, mettant en lumière les nouvelles taxes et réformes fiscales visant à soutenir les opérations militaires éloignées. Le chapitre 3 discute de l'établissement de colonies agro-militaires dans le nord-ouest, qui ont joué un rôle clé dans la réduction des distances physiques et culturelles. En favorisant le développement agricole et en encourageant l'établissement de la population Han dans les régions frontalières, la politique visait à intégrer ces territoires plus étroitement au noyau impérial, réduisant ainsi le fardeau économique de la logistique.

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Introduction

This thesis explores the physical and cultural distances between the imperial heartland and the newly established frontiers, and the challenges imposed by such distances during the Western Han dynasty (202 BCE–9 CE). During the reign of Emperor Wu 武帝 (re. 141–87 BCE), his government initiated military campaigns against the Han empire's enduring northern adversary, the Xiongnu 匈奴, and expanded into remote foreign lands while overcoming the logistical and military challenges presented by vast distances. The Hexi region 河西地區, one of the distant new territories annexed into the Han realm by Emperor Wu's court, was emblematic of the Han expansion. The Han conquest of the region was a consequence of its victory in the Hexi Campaign when General Huo Qubing 霍去病 travelled over 2000 *li* and defeated the Xiongnu in 121 BCE.[1] Yet, the Han court did not complete the process of annexation during Emperor Wu's rule; the Han empire continued the expansionary project during the reigns of Emperor Zhao 昭帝 (re. 87-74 BCE) and Emperor Xuan 宣帝 (re. 74-49 BCE) and beyond.

The strategic management of distance by the Han empire—manifested through the Han-Xiongnu wars occurring afar and the integration of the remote Hexi region—illuminates a broader theme in imperial governance: the ability to assert control and extend influence across distant areas. This raises critical questions: How did the Western Han empire tackle the logistical challenges presented by its imperial expansion, and what strategies were employed to bridge these vast distances? I contend that the empire sought to implement Han administrative practices

[1] *SJ* 110, 2906. Transmitted sources are cited with the chapter number (*juan* 卷) followed by the page number, so *SJ* 110, 2906 means *juan* 110, page 2906 in the *Zhonghua shuju* edition of the *Shiji* [*The Grand Scribe's Records*] (*See* "Primary Sources" in Bibliography for a complete citation of the transmitted historiographical texts). The *Hanshu* is cited in the same style throughout the thesis.

in its remote outposts as a means to surmount the spatial, economic, and cultural challenges imposed by distance.

The Hexi region, sometimes referred to as the Hexi Corridor 河西走廊, is nestled between the Mongol and Tibetan Plateaus 青藏高原. This critically important corridor served as a conduit to what is now known as Xinjiang 新疆, but was, during the Han dynasties termed the Western Regions 西域, which made possible the Han court's furthering its westward expansion. The Hexi region, spanning approximately 1,100 kilometers in length and varying from a few kilometers to over 100 kilometers in width, exhibits a distinctive topography that slopes from east to west and from south to north, with elevations predominantly ranging between 1,000 to 1,500 meters.[2] The natural landscape of the corridor demonstrates marked variations between its eastern and western parts; to the east of Zhangye 張掖, loess is prevalent, while to the west, the expansion of deserts becomes increasingly significant, accompanied by the presence of salt marshes.[3]

Climatically, the Hexi Corridor is characterized by an arid desert climate, experiencing intense solar radiation and ample sunlight.[4] These climatic conditions vary significantly across different parts of the corridor: the northern section falls within the temperate arid zone, offering favorable conditions for agriculture and serving as the main distribution area for the corridor's oases; the western part lies within the warm temperate arid zone, which is ideal for the cultivation of grain and cotton due to superior heat and light conditions; and the southern section,

[2] Wu Niaxiang 吴礽骧, *Hexi Hansai diaocha yu yanjiu* 河西汉塞调查与研究 [*Investigation and Analysis on Han Fortifications in the Hexi Region*] (Beijing: Wenwu chubanshe, 2005), 1.

[3] Wu, *Hexi Hansai diaocha yu yanjiu* 河西汉塞调查与研究, 5.

[4] Wu, 5.

a cold semi-arid zone, boasts well-vegetated slopes of the Qilian Mountains 祁連山 that serve as excellent natural pastures.[5]

The term "Hexi," etymologically derived from its geographical position west of the Yellow River, has traditionally served as a broad geographical descriptor rather than a precise administrative designation within the Chinese historical context.[6] In contemporary discourse, the term "Hexi region" is frequently synonymous with modern Gansu Province 甘肅,[7] while the "Hexi Corridor" is strongly associated with the so-called Silk Road. In fact, this corridor spans only a portion of present-day Gansu Province, between the Gobi Desert 戈壁沙漠 and the Qilian Mountains, extending westward to its terminus in modern Dunhuang 敦煌. Historically, during most of the Western Han dynasty, post-conquest, the Hexi region referred to the four commanderies, Wuwei 武威, Zhangye 張掖, Jiuquan 酒泉, and Dunhuang 敦煌. Those were founded by Emperor Wu's court after the two Xiongnu kings, the King of Hunye 渾邪王 and the King of Xiutu 休屠王, surrendered to the renowned General Huo Qubing 霍去病.[8] These

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[5] Wu, 5-6.

[6] The term, the Hexi region, literally means "west of the river," so it could refer to modern Shaanxi province 陝西 or the Qin state 秦 in the context of the Warring States in the Han dynasty. One can find many examples in Sima Qian's *Shiji*; for instance, a prince of the state of Jin, Yiwu spoke to Minister Baili Xi of the state of Qin: "If [I] am able to ascend the throne, I will cede the eight walled towns of the state of Jin in the Hexi region to the state of Qin" (誠得立，請割晉之河西八城與秦) (*SJ* 5, 187).

[7] The use of the Hexi region as a secondary name of Gansu province can be traced back to the early Qing dynasty when the Qing court under the sceptre of Emperor Kangxi 康熙 separated Gansu from the Shaanxi province of the Ming dynasty. The geographer of the early Qing dynasty, Liu Xianting 劉獻廷 used the term "Hexi" and Gansu interchangeably in his 廣陽雜記; for example, Liu wrote, "Wang Dingshan, a person from Liaoning, served as a military commander in the unit commanded by Zhang Yong, the Marquis of Jingyong in the Hexi region" (遼人王定山為河西靖勇侯張勇中軍) under the reign of Emperor Kangxi (Liu Xianting 劉獻廷, *Guangyang zaji* 廣陽雜記 (Beijing: Zhonghua shu ju, 1985), 60).

[8] Sima Qian, a contemporary of Emperor Wu, referred the territories of the four commanderies as Hexi. In *Shiji*, he recorded, "Since the Han empire already acquired King of

commanderies approximately correspond to the regions encompassing today's Gansu province west of Lanzhou and the Alxa League 阿拉善盟 of present-day Inner Mongolia 內蒙古.

The purpose of this thesis is to investigate the Western Han empire's annexation of the Hexi region, employing it as a focal case study to explore the empire's strategies to overcome the cultural and physical distances. Inspired by Clifford Ando's analysis of the power of the Roman empire, which posited that Rome's dominance extended beyond mere military might to include sophisticated local governance systems and infrastructural projects, this study seeks to determine if similar dynamics were at play within the Western Han empire.[9] Specifically, the research will examine whether the Western Han empire also utilized infrastructure such as roads and local governance mechanisms as strategic tools for managing distance, which was crucial for empire building. Ando's insights into the role of transportation infrastructure in facilitating the movement of people and goods, and the spread of religious beliefs and ideologies, underscore the importance of these structures in ancient statecraft.[10] I intend to ascertain the extent to which these strategies were instrumental in the Western Han's administrative control and territorial expansion, thereby offering a nuanced understanding of ancient empire management.

This thesis will utilize a comprehensive and multifaceted methodology that combines a diverse array of sources and analytical tools to thoroughly investigate the management of distance in the Western Han empire. A central component of this methodology is the employment

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Hunye, there were less Hu invaders in Longxi, Beidi, and Hexi" (於是漢已得渾邪王，則隴西、北地、河西益少胡寇) (*SJ* 110, 2909).

[9] Clifford Ando, "Chapter 4. The Ambitions of Government: Territoriality and Infrastructural Power in Ancient Rome," In *Ancient States and Infrastructural Power: Europe, Asia, and America*, edited by Clifford Ando and Seth Richardson (Philadelphia: University of Pennsylvania Press, 2017), 120-9. https://doi-org.proxy3.library.mcgill.ca/10.9783/9780812294170-005.

[10] Ando, "The Ambitions of Government," 129-135.

of the Least Cost Path Analysis (LCPA), a sophisticated Geographic Information System (GIS) tool. This tool will be used to model and analyze the theoretically optimal route from the imperial core to the Hexi region.

Additionally, this research will involve meticulous cross-referencing of archaeological findings with key historiographical texts. Among these are the *Records of the Grand Historian* (*Shiji* 史記) by Sima Qian 司馬遷 and the *History of Han* (*Hanshu* 漢書) by Ban Gu 班固. These texts, while providing invaluable insights into the broader historical context, offer fragmented records of the Hexi region, thus necessitating a careful and critical analysis to piece together a coherent narrative of the region's administrative and logistical history.

These classical texts will be complemented by secondary works from modern historians and contextual insights from archaeological discoveries throughout the 20th and 21st centuries. Significant among the archaeological finds are the Juyan Han Slips 居延漢簡 discovered by explorers like Sir Marc Aurel Stein in modern-day Gansu province early in the 20th century.[11] Subsequent discoveries, such as the New Juyan Han Slips 居延新簡 and the Dunhuang Slips 敦煌漢簡, and notably the Xuanquan Han Slips 懸泉漢簡 unearthed in the 1990s near the site of the Xuanquan postal-relay station 懸泉置, have provided substantial primary data for analysis.[12]

[11] Gansu Juyan Archaeological Team 甘肅居延考古隊, "Juyan Handai yizhi de fajue he xin chutu de jiance wenwu" 居延漢代遺址的發掘和新出土的簡冊文物 [Excavation of the Juyan Site in the Han Dynasty and the Newly Unearthed Slips and Cultural Artefact], in *Hanjian yanjiu wenji* 漢簡研究文集 [Collection of Research on Han Slips], edited by Gansu Provincial Museum 甘肅省博物館 and Gansu Working Team of Cultural Artefact 甘肅文物工作隊 (Lanzhou: Renmin chubanshe, 1984), 476-7.

[12] Hidemasa Nagata 永田 英正, "Xuzhang Zhongguo jiandu yanjiu de xianzhuang yu keti" 序章 中國簡牘研究的現狀與課題 [Preface: Status Quo and Topics of Research about Chinese Slips], in *Juyan Hanjian yanjiu* 居延漢簡研究 [Research about Han Slips in Juyan] translated by Zhang Xuefeng 張學鋒 (Guiling: Guangxi shifan daxue chubanshe, 2007), 17-9.

Additionally, much Chinese scholarship contributes significantly to the study of excavated slips. Notable among them are *A Summative Analysis of Bamboo Slips and Wood Boards in the Hexi Region* (河西簡牘綜論) edited by Sun Zhanao 孫佔鰲 and Yi Weixian 尹偉先; *Research on Han Slips in the Hexi Region about Social History* (漢簡河西社會史料研究) by Wang Zijin 王子今; and *Research on the Classification of Juyan Han Slips* (居延漢簡簿籍分類研究) by Li Tianhong 李天虹.[13] These secondary sources provide invaluable insights into the analysis of bamboo and wood slips, enriching the academic discourse on the region's historical and cultural complexities and offering critical insights into the Han empire's administrative strategies in managing its frontier territories. However, none of them have explored the role of infrastructure in overcoming not just physical but also cultural distance. Mostly they regard the area as a *tabula rasa*, available for settlement by the Han, after the Xiongnu had been driven back.

While numerous Chinese scholars have extensively explored the physical distances and historical routes from Chang'an to the Hexi region, there is a notable gap in the exploration of cultural distances in academia. For example, Li Bingcheng 李並成 in his monograph *Historical Geography of the Hexi Corridor* (*Heix zoulang lishi dili* 河西走廊歷史地理) focuses on the geographical locations of county seats and fortresses during the Han dynasty, drawing from both field surveys and traditional texts.[14] Similarly, Wu Niaxiang 吳礽驤, in his work *Investigation*

[13] *See* Sun Zhanao 孫占鰲 and Yin Weixian 尹偉先, *Hexi jiandu zonglun* 河西簡牘綜論 [A Summative Analysis of Bamboo Slips and Wood Boards in the Hexi Region], Lanzhou: Gansu renmin chubanshe, 2016; Wang Zijin 王子今, *Hanjian Hexi shehui shiliao yanjiu* 汉简河西社会史料研究 [*Research on Han Slips in the Hexi Region about Social History*], Beijing: Shang wu yin shu guan, 2017; Li Tianhong 李天虹, *Hanjian bu ji fenlei yanjiu* 居延漢簡簿籍分類研究 [*Research on the Classification of Juyan Han Slips*], Beijing: Ke xue chu ban she, 2003.

[14] *See* Li Bingcheng 李並成, *Heix zoulang lishi dili* 河西走廊歷史地理 [*Historical Geography of the Hexi Corridor*], Lanzhou: Gansu Renmin chubanshe, 1995.

and Analysis on Han Settlements in the Hexi Region (Hexi Hansai diaocha yu yanjiu 河西漢塞調查與研究), primarily bases his findings on field research, examining the routes used by Han dynasty couriers across the four commanderies in the Hexi region.[15]

Scholarship in European languages addressing the history of the Hexi region during the Han dynasty is notably limited. One of the seminal contributions is by Éric Trombert in his study, "Notes pour une évaluation nouvelle de la colonisation des contrées d'Occident au temps des Han," where he posits that the "colonies militaires agricoles" (*tuntian* 屯田) established in the Hexi region and extended into the Western Regions were not the primary objective but rather a secondary outcome of these efforts. Trombert not only critically assesses the impact of the "colonies militaires agricoles" but also elucidates the limitations inherent in the Han expansionary efforts, pointing out the significant challenges faced by Han migrants and the eventual waning of Han influence in the Western regions.[16] Further, in his monograph *Le glaive et la charrue. Soldats et paysans chinois à la conquête de l'ouest: l'histoire d'un échec*, Trombert argues that the Western Han empire utilized military power not only to assert control but also implemented the "colonies militaires agricoles" to propagate Han-style agricultural practices and the Han civilization within conquered territories. However, he notes that these outposts struggled to be self-sustaining, often failing to produce sufficient food to cover their costs and lacking necessary support from the central government.[17]

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[15] *See* Wu Niaxiang 吴礽骧, *Hexi Hansai diaocha yu yanjiu* 河西汉塞调查与研究 [*Investigation and Analysis on Han Settlements in the Hexi Region*], Beijing: Wenwu chubanshe, 2005.

[16] Éric Trombert, "Notes pour une évaluation nouvelle de la colonisation des contrées d'Occident au temps des Han," *Journal Asiatique* 299.1 (2011): 67-113, DOI: 10.2143/JA.299.1.2131060.

[17] *See* Éric Trombert, *Le Glaive et La Charrue. Soldats et Paysans Chinois À La Conquête de l'Ouest: L'histoire d'Un Échec*, Paris: Collège de France, Institut des Hautes-études chinoises, 2021.

Chun-shu Chang also contributes significantly to this discourse in his two-volume monograph *The Rise of the Chinese Empire*.[18] In Volume I, *Nation, State, and Imperialism in Early China, ca. 1600 B.C.-A.D. 8*, Chang explores the strategic importance of territorial expansion and frontier colonization in the evolution of the imperial state during the Western Han dynasty, focusing particularly on Han expansionism and colonization of foreign territories.[19] Volume 2, *Frontier, Immigration, and Empire in Han China, 130 B.C.-A.D. 157*, provides an in-depth analysis of the structure and function of the northwestern frontier, with special attention to the Juyan area. These works collectively provide a nuanced understanding of the complexities and challenges of frontier management and the broader implications for the Han empire's administrative strategies.[20]

Distinct from Trombert and Chang, who concentrate on the Western Han dynasty, Wicky W. K. Tse's examination in *The Collapse of China's Later Han Dynasty, 25-220 CE: The Northwest Borderlands and the Edge of Empire* shifts focus to the northwestern frontier of the Eastern Han empire. Although Tse's work does not specifically address the Hexi region, he views the region as an integral entity of the northwestern frontier of the Han empire. Tse portrays this

[18] Chun-shu Chang's two-volume work has elicited varied responses from the academic community. Notably, Mark Edward Lewis critiques the initial fifty-five-page prologue of the first volume as being both questionable and tangential, suggesting that it may detract from the overall value of the volume for readers. Despite this criticism, Lewis acknowledges the significant merits of Chang's second volume. He commends it for its potential to serve as a definitive monographic introduction to the Han colonies in the Hexi region and the slips excavated in Juyan (Mark Edward Lewis, "*The Rise of the Chinese Empire. Volume 1: Nation, State, and Imperialism in Early China, ca. 1600 B.C.-A.D. 8; Volume 2: Frontier, Immigration, and Empire in Han China, 130 B.C.-A.D. 157*," *T'oung Pao* 94, 4 (2008): 365-7, doi: https://doi-org.proxy3.library.mcgill.ca/10.1163/008254308X385914).

[19] *See* Chun-shu Chang, *The Rise of the Chinese Empire*: *Nation, State, and Imperialism in Early China, ca. 1600 B.C.-A.D. 8*, Ann Arbor: University of Michigan Press, 2007.

[20] *See* Chun-shu Chang, *The Rise of the Chinese Empire*: *Frontier, Immigration, and Empire in Han China, 130 B.C.-A.D. 157*, Ann Arbor: University of Michigan Press, 2007.

region as a "highly militarized society,"[21] a characterization that stands in stark contrast to the idealized vision of scholar-officials at the central court. Utilizing the "core-periphery" theory from political geography, Tse frames the debate over retaining or abandoning the northwestern frontier as "conflicts between the periphery and center."[22]

This thesis is organized into three distinct chapters, each addressing critical aspects of the Han dynasty's management of distance within the Hexi region. Chapter 1 constructs a comprehensive database of the Han road network in the Hexi region, primarily utilizing data from the Mileage Book of Postal-Relay Stations (*zhuan zhi daoli bu* 傳置道里簿) found among the Juyan slips and the Document of Mileage (*lichen jian* 里程簡) unearthed at Xuanquan. Employing the Least Cost Path Analysis (LCPA), this chapter identifies the most theoretically efficient routes from the imperial core to the Hexi region and computes the distances between specific locations mentioned in the two mileage documents. A comparative analysis between the distances recorded in the slips, Euclidean distances, and those estimated via LCPA is conducted. The chapter concludes by affirming the Han court's attention to the physical distances between its settlements and offers several hypotheses to reconcile the sometimes remarkable differences observed between the slip distances and those determined by LCPA.

Chapter 2 explores the significant economic implications of maintaining control over the physically distant territories of the Hexi region. It begins with a detailed examination of the expenditures incurred during the Hexi Campaign of 121 BCE and the costs associated with sustaining a military presence in the region. This analysis sets the stage for examining how these

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[21] *See* Wicky W. K. Tse, *The Collapse of China's Later Han Dynasty, 25-220 CE: The Northwest Borderlands and the Edge of Empire.* London: Routledge, 2018. https://doi.org/10.4324/9781315532332.

[22] Tse, *The Collapse of China's Later Han Dynasty, 25-220 CE*, 4.

logistical challenges impacted the overall financial strategy of the empire under Emperor Wu. The chapter delineates the sources of income available to the court prior to Emperor Wu's reign and discusses the new taxes and state monopolies introduced during his administration. Furthermore, it examines the institutional changes implemented within the central court to manage these new economic measures effectively.

Chapter 3 examines the *tuntian* policy 屯田, a crucial strategy employed by the central court of the Western Han empire to create agro-military settlements that ostensibly served dual purposes: they were agricultural bastions and strategic military outposts. The chapter begins with an exploration of the genealogy of the agro-military settlements, drawing insights from the political rhetoric in the ministers' memorials, Jia Yi to Emperor Wen, Sang Hongyang to Emperor Wu, and Zhao Chongguo to Emperor Xuan. The chapter then focuses the dual-pronged rationale—economic and cultural—behind establishing these outposts in the Hexi region. Economically, the establishment of agro-military settlements was aimed at reducing the logistical costs associated with transporting grain from the imperial heartland to the frontier, a challenge exacerbated by the physical distance. Culturally, the policy aimed to diminish the cultural distance by transforming the Hexi region into a more familiar environment akin to that of the imperial core, encouraging the migration of civilian populations. This strategy was intended to integrate the frontier more closely with the central regions, effectively shrinking both the physical and cultural gaps that separated the Hexi from Chang'an.

Chapter 1: Measuring Distance in the Empire

The Western Han empire, under the vigorous reign of Emperor Wu, embarked on expansive military campaigns that extended its frontiers deep into the Hexi Corridor, thus redefining the boundaries of the empire. This strategic westward push positioned the Hexi region as the new frontier distant from the imperial centre, posing new challenges about the governance and logistical capabilities to the Han administration. Those challenges prompt a crucial question: What was the significance of the distance travelled by historical agents during the Western Han dynasty when they moved between the imperial center, Chang'an, and the newly established settlements in the Hexi region? This question extends beyond the simple Euclidean measurement; for instance, while the straight-line distance between Chang'an and Dunhuang is approximately 1,420 kilometers, the implications of such travel were far more complex.

This was the first time the Qin and Han empires extended their reach so far west, marking a pivotal moment in its expansion, comparable to the Qin dynasty's earlier campaigns to the south. The movement of people—whether soldiers sent to fight, defensive forces sent to maintain control, or merchants and civilians sent to effect cultural integration—resulted in distinct interactions with a landscape different from than those of the Central Plains, that had been exploited with crops and agricultural techniques other than those in vogue in the Han dynasty's heartland.[23] Unlike many of its Roman counterparts, which survive and are still in use today, the paths carved by the Han empire have vanished beneath the sands of time. Therefore, historians utilize archaeologically retrieved textual records to determine how and to what extent their travel paths deviated from straight lines, and how this might be explained. The routes that historical agents actually traversed from Chang'an to Dunhuang must have differed from a straight line on

[23] Trombert, *Le Glaive et La Charrue*, 62-3.

a map. The path taken by the historical agents was connected by different "state spaces," i.e. the postal-relay stations or walled settlements, where state could effectively concentrate populations to exert military, administrative, and economic power.[24]

This chapter seeks to illuminate how the Han empire's understanding of distance influenced their strategic decisions. I will begin with leveraging two significant archaeological findings: the "Mileage Book of Postal-Relay Stations" (*chuan zhi dao li bu* 傳置道里簿) excavated at Pochengzi site, Guazhou county in 1974 and the "Document of Mileage" (*licheng jian* 里程簡) excavated at Xuanquan site, Dunhuang prefecture in 1990. Predicated upon the two primary sources, along with previous scholarship, I construct a database of the Hexi road web including the coordinates and places and the distances between them recorded by the Han people. This database is particularly useful for the next step when I employ the Least Cost Path Analysis (LCPA), a Geographic Information System (GIS) tool, to reconstruct the likely path between Chang'an and the Hexi region and to estimate the distance travelled through the likely path. The LCPA, moving beyond tracing lines on a map, renders the theoretically most optimal route, which might correspond to the historical path used by the Han people. Thus, through a comparative analysis of distances recorded in the primary sources, those estimated through LCPA-generated routes, and those through theoretical Euclidean calculations, I hope to shed light on the Han people's understanding and interaction with distance.

1. From Chang'an to Hexi

1) Distances Recorded in Han Dynasty Mileage Slips (*Lichengjian* 里程簡)

[24] Maxim Korolkov and Anke Hein, "State-Induced Migration and the Creation of State Spaces in Early Chinese Empires: Perspectives from History and Archaeology," *Journal of Chinese History* 5, no. 2 (2021): 203–4. https://doi-org.proxy3.library.mcgill.ca/10.1017/jch.2020.45.

Roman historians reconstruct historical routes based on the Itinerary of the Emperor Antoninus (*Itinerarium Antonini Augusti*) and the Jerusalem Itinerary (*Itinerarium Hierosolymitanum*), historians specializing in the Han dynasty have comparable *itineraria*.[25] A similar genre of geographical documents in China, known as "books of travel route distances" *daoli shu* 道里書, "mileage books" *lichen shu* 里程書 or "mileage books of postal-relay stations" *zhuanzhi daoli bu* 傳置道里薄, delineates the empire's land roads and the distances between nodes within the road network. The two slips examined in this chapter—the "Mileage Book of Postal-Relay Stations" from the New Juyan Slip collection and the "Document of Mileage" from the Xuanquan Slip collection—belong to this genre. According to Rong Xinjiang, such geographical documents were widely produced across the empire, in regions with established postal stations.[26] For instance, two manuscripts, *Jiaotong licheng shu* 交通里程書 and *diming licheng jian* 地名里程簡 from the Qin empire were discovered in Hunan and Hubei provinces, far from the excavation sites of the two slips discussed here.[27]

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[25] For an example of historians specializing in ancient Rome using the two documents, *see* Benet Salway, "Travel, Itineraria and Tabellaria," in *Travel and Geography in the Roman Empire*, edited by Colin Adams and Ray Laurence, 22-66, London: Routledge, 2001. https://doi-org.proxy3.library.mcgill.ca/10.4324/9780203995594.

[26] Rong Xinjiang 荣新江, "Chutu wenxian suo jian sichou zhi lu gaishuo" 出土文献所见丝绸之路概说 [A Survey on the Silk Road as Seen in the Documents Unearthed along the Silk Road], *Journal of Peking University (Philosophy and Social Sciences)* 北京大学学报（哲学社会科学版）53 no. 1 (2016): 108-114.

[27] Titles of both documents are assigned by modern scholars, because no title was recorded in the verso of the slips. For the Mileage chart discovered in Hubei, *see* Xin Deyong 辛德勇, Beida cang qin shui lu lichen jiance yu zhanguo yiqi qin mo de yang ji yangcheng wenti 北大藏秦水陆里程简册与战国以迄秦末的阳暨阳城问题 [On the Qin Bamboo Slips of Route Distances on Land and Water, and the Issue about the Location of Yang and Yang Town from the Warring States Period to the Late Qin Dynasty], *Journal of Peking University (Philosophy and Social Sciences)* 北京大学学报（哲学社会科学版）52 no. 2 (2015): 21-28. For the Mileage chart discovered in Hunan, *see* Wu Rongzheng 吴荣政, "Liye qin jian wenshu dangan chu tan" 里耶秦简文书档案初探 [Research on Qin Dynasty Bamboo － slip Documents and

Li Ling identifies this genre of geographical documents as "lists of distances for travel routes" or "books of travel route distances" (*daoli shu* 道里書) or "books of mileage" (*lichen shu* 里程書).[28] He explains that the term *dao* 道 refers to a travel route, while *li* 里 denotes a unit of distance.[29] However, He Shuangquan refers to both slips as the "Mileage Book of Postal-Relay Stations" *zhuanzhi daoli bu* 傳置道里薄, differentiating them by appending their respective excavation locations, Juyan and Xuanquan, to the titles.[30] Y. Edmund Lien notes that the term *zhuanzhi* 傳置 is interchangeable with *zhi* 置, which refers to a governmental institution functioning as both a relay station and postal station.[31] For the purposes of this thesis, I will distinguish the two slips by adopting the following names: I will refer to the slip excavated at Juyan as the "Mileage Book of Postal-Relay Stations" and the slip from Xuanquan as the "Document of Mileage."[32]

Archives in Liye], *Journal of Xiangtan University (Philosophy and Social Sciences)* 湘潭大学学报（哲学社会科学版）37, no. 6 (2013): 141-6.

[28] Li Ling, "7. The Editing and Publication of Ancient Books Written on Bamboo and Silk," translated by Constance A. Cook, in *Bone, Bronze, and Bamboo: Unearthing Early China with Sarah Allan* edited by Constance A. Cook, Christopher J. Foster and Susan Blader (Seattle, WA: SUNY Press, 2024), 167 and 179. https://doi-org.proxy3.library.mcgill.ca/10.1515/9781438499017-009.

[29] Li, "The Editing and Publication," 188.

[30] He Shuangquan 何双全, "Handai xibei yidao yu chuanzhi – Jiaqu houguan, Xuanquan Han jian zhuanzhi dao li bu' kaoshu" 汉代西北驿道与传置–甲渠候官、 悬泉汉简 《传置道里薄》考述, *Journal of National Museum of China* no.1 中国国家博物馆馆刊 第 1 期 (1998): 62.

[31] Y. Edmund Lien, "Reconstructing the Postal Relay System of the Han Period," in *A History of Chinese Letters and Epistolary Culture*, edited by Antje Richter (Leiden, The Netherlands: Brill, 2015), 48. DOI: https://doi-org.proxy3.library.mcgill.ca/10.1163/9789004292123_003

[32] Since the two exhumed slips do not contain titles on their versos, historians have the liberty to assign titles to the manuscripts (Li, "The Editing and Publication," 178).

The former slip is part of the Juyan New Slips collection 居延新簡, excavated in 1974, while the latter belongs to the Xuanquan Slip collection 懸泉漢簡, unearthed in 1990. Although the exact production dates of the two slips remain uncertain, a probable timeframe can be inferred through a comparative analysis of transmitted texts and the slips themselves. Zhou Zhenghe notes that Jiuquan Commandery was established in 121 BCE, followed by the establishment of Zhangye and Dunhuang Commanderies in 111 BCE and Wuwei Commandery in 67 BCE.[33] Consequently, the earliest possible date for the slips could be as early as 121 BCE. Zhou also suggests that most counties mentioned in the "Treatise on Geography" were founded in 111 BCE,[34] making 111 BCE a more likely lower bound for the production date. Additionally, according to Wang Xinqian's comments on the "Treatise on Geography," the county of Zhaowu 昭武 was renamed Quwu 渠武 during Wang Mang's rule, suggesting that the slips might have been produced as late as before 9 CE.[35] Furthermore, Hu and Zhang, based on the slips, propose that Zhaowu once served as the commandery capital, although Ban Gu recorded that the capital of Zhangye Commandery was Lude in 10 BCE.[36] Thus, it is reasonable to conclude that the two slips were produced between 111 BCE and 10 BCE.

The Juyan document is a wood slip measuring 22.6 cm in length and 3.1 cm in width, structured into two sections separated by a blank space. Each section comprises two rows of text, with each row containing four vertical lines.[37] In contrast, the Xuanquan record measures 18 cm

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[33] Zhou Zhenghe 周振鶴, *Xihan zhengqu dili* 西漢政區地理 [Political Geography of the Western Han Dynasty] (Beijing: shangwu yinshuguan, 2017), 183.

[34] Zhou, *Xihan zhengqu dili* 西漢政區地理, 186.

[35] *HS* 28B, 1613.

[36] Hu Pingsheng 胡平生 and Zhang Defang 張德芳, eds. *Dunhuang Xuanquan hanjian shicui* 敦煌懸泉漢簡釋粹 (Shanghai: Shanghai guji chubanshe, 2001), 58.

[37] Ma Yi 马怡 and Zhang Rongqiang 张荣强, eds. *Juyan xinjian shi jiao* 居延新简释校 (Tianjin: Tianjin guji chubanshe, 2013), 625.

in length and 2.2 cm in width.[3839] The "Mileage Book of Postal-Relay Stations" is accessible for study through high-resolution images of its wood slips, which allows for a comprehensive analysis of its physical characteristics.[40] However, the image of the "Document of Mileage" has only just been published while the review of this thesis was already in progress. Therefore, my analysis will primarily rely on the unannotated transcription of the original texts in the anthology compiled by historians specializing in the field. Li Tianye's reconstruction of the "Document of Mileage" provides images of two other slips that contain similar geographical information.[41] However, due to the largely unrecognizable distances recorded on these slips, Li's reconstruction offers limited utility for the research presented in this chapter. Hence, I will limit my focus to the one slip where distances are legible.

According to Ma Yi and Zhang Rongqiang, the "Mileage Book of Postal-Relay Stations" reveals mileage data and the transportation routes stretching from Chang'an to Dichi county 氐池縣, Zhangye commandery 張掖郡 while the "Document of Mileage" delineates the route from west of Cangsong county 倉松縣, Zhangye commandery to Yuanquan county 淵泉縣, Dunhuang

[38] Hu and Zhang, eds. *Dunhuang Xuanquan hanjian shicui* 敦煌懸泉漢簡釋粹, 56.

[39] Given the absence of visual access or a more detailed description of the "Document of Mileage," it is challenging to ascertain the precise material—whether wood or bamboo—from which the manuscript was crafted. This uncertainty complicates the application of the correct terminological distinction between "slip" (*jian* 簡) and "board" (*du* 牘). However, scholars Sun Zhanao and Yin Weixian suggest that the term "slip" can be generically used to denote both bamboo slips and wood boards (Sun and Yin, *Hexi jiandu zonglun* 河西簡牘綜論, 7). In light of this, and for the sake of consistency, I will continue to use "slip" to refer to both the "Document of Mileage" and the "Mileage Book of Postal-Relay Stations" throughout this thesis.

[40] For high-quality images of those slips, *see* 中央研究院歷史語言研究所簡牘整理小組 Slip Sorting Group, Institute of History and Philology, Academia Sinica, *Juyan Han jian (san)* 居延漢簡（參）, Taipei: Institute of History and Philology, Academia Sinica, 2016.

[41] Li Tianye 李天野, "Liang han helong diqu jiaotong Luxian yanjiu" 两汉河陇地区交通路线研究 [A Study on the Traffic Routes of Helong area in Han Dynasty] (Master diss., Lanzhou University, 2020), 83-4.

commendary 敦煌郡.[42] Rong claims that with the two slips, historians can reconstruct the postal roads from Chang'an to Dunhuang.[43] Jidong Yang's analysis further emphasizes the strategic importance of the postal-relay stations within this network, highlighting how these slips reflect the operational status and administrative importance of these nodes within the Han's expansive territorial reach.[44] Notably, the "Mileage Book of Postal-Relay Stations" and the "Document of Mileage" are currently the only two mileage charts created by Han officials that archaeologists have discovered. Wang Hanmei points out that the two manuscripts stand out for their granular detail compared to the transmitted historiographical records, offering precise names of places, distances, and routes.[45]

Based on the names of the two slips and the genre of the documents, their purpose was to delineate the spatial distances between important towns and the imperial capital. Wang Hanmei notes that the imperial court's concern with these distances stemmed from the relationship between political power and spatial organization.[46] As such, documenting these distances in

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[42] Wang Hanmei 王含梅, "Juyan xin jian 'zhuan zhi dao li bu' diming xin zheng" 居延新簡 《傳置道里簿》地名新證 [New Study on the Post Station Mileage-books of Ju-yan New Bamboo Slips], *Journal of Chinese Historical Geography* 33, no. 3 中國歷史地理論叢 33 第 3 輯 (July 2018): 55.

[43] Rong, "Chutu wenxian suo jian sichou zhi lu gaishuo" 出土文献所见丝绸之路概说, 109.

[44] Jidong Yang, "Transportation, Boarding, Lodging, and Trade along the Early Silk Road: A Preliminary Study of the Xuanquan Manuscripts," *Journal of American Oriental Society* 135, no. 3 (2015): 422-4. https://doi.org/10.7817/jameroriesoci.135.3.421.

[45] Wang, "Juyan xin jian 'zhuan zhi dao li bu' diming xin zheng" 居延新簡 《傳置道里簿》地名新證, 55.

[46] Wang Hanmei 王含梅, "Chuantong youyi xitong de shi-kong jiegou yu qingdiguo quanli wangluo—cong *daqing huidian* yicheng kan qingdai tongxun shouduan de shixiao kunjing" 传统邮驿体系的时-空结构与清帝国权力网络———从《大清会典》驿程看清代通讯手段的时效困境 [The temporal-spatial structure of traditional postal system and the power network of the Qing Empire: Time constraints of communication means in the Qing Dynasty from the perspective of travel distance in The Comprehensive Statutes of the Great Qing

geographical records, including the two excavated slips, reflects the imperial court's desire to maintain a "spatial political hierarchy" (*kongjian zhengzhi chixu* 空间政治秩序—in other words, ensuring state control over its territories.[47] As the imperial authority sought to consolidate its spatial dominance and extend its influence from the political center to the peripheral regions, measuring the distances from Chang'an to the capitals of commanderies and regional kingdoms became essential. Moreover, these geographical records had practical implications for envoys, troops, officials, citizens, and couriers who needed to traverse these distances on behalf of the state. He Shuangquan interprets the two slips as courier documents crucial for calculating the "length of the postal routes" (*youcheng* 邮程) during the Western Han dynasty.[48]

The mileage chart unearthed in Juyan illustrates the approximate distances among twenty walled towns and stations from Chang'an to Dunhuang:

> 長安至茂陵七十里，茂陵至茯置卅五里，茯置至好止七十五里，好止至羲置七十五里；月氏至烏氏五十里，烏氏至涇陽五十里，涇陽至平林置六十里，平林置至高平八十里；媼圍至居延置九十里，居延置至觻里九十里，觻里至婿次九十里，婿次至小張掖六十里；刪丹至日勒八十七里，日勒至鈞著置五十里，鈞著置至屋蘭五十里，屋蘭至池五十里…… (E. P. T59: 582)[49]
>
> Chang'an to Maoling seventy *li*, Maoling to Quan postal-relay station thirty-five *li*, Quan postal-relay station to Haozhi seventy-five *li*, Haozhi to Yi postal-relay station 75 *li*; Yuezhi to Yanzhi fifty *li*, Yanzhi to Jingyang fifty *li*, Jingyang to Pinglin sixty *li*, Pinglin to Gaoping eighty *li*; Aowei to Juyan postal and relay station ninety *li*, Juyan postal-relay station to Lude ninety *li*, Lude to Xuci ninety *li*, Xuci to Xiaozhangye ninety *li*; Shandan to Rile eighty-seven

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Dynasty], 重庆大学学报（社会科学版） *Journal of Chongqing University (Social Science Edition)* 2023(4): 159. DOI: 10.11835/j.issn.1008-5831.rw.2023.06.002.

[47] Wang, "Chuantong youyi xitong de shi-kong jiegou yu qingdiguo quanli wangluo—cong *daqing huidian* yicheng kan qingdai tongxun shouduan de shixiao kunjing" 传统邮驿体系的时-空结构与清帝国权力网络———从《大清会典》驿程看清代通讯手段的时效困境, 161.

[48] He Shuangquan 何双全, "Dunhuang Xuanquan Han jian neirong gaishu" 敦煌悬泉汉简内容概述 [A General Account of Inscribed Slips of the Han Dynasty From Xuanquan at Dunhuang], *Cultural Relics* no.5 文物 第五期 (2000): 21.

[49] Ma and Zhang, eds. *Juyan xinjian shi jiao* 居延新简释校, 625.

li, Rile to Junqi postal-relay station fifty *li*, Junqi postal-relay station to Wulan fifty *li*, Wulan to Dichi fifty *li* …

The Xuanquan chart reveals the rough length of thirteen segments:

倉松去鸞鳥六十五里，鸞鳥去小張掖六十里，小張掖去姑臧六十七里，姑臧去顯美七十五里；…… 氐池去觻得五十四里，觻得去昭武六十二里府下，昭武去祁連置六十一里，祁連置去表是七十里；…… 玉門去沙頭九十九里，沙頭去乾齊八十五里，乾齊去淵泉五十八里…… (II 0214①: 130)[50]
Cangsong to Luanniao sixty-five *li*, Luanniao to Xiaozhangye sixty *li*, Xiaozhangye to Guzang sixty-seven *li*, Guzang to Xianmei seventy-five *li* …… Dichi to Lude fifty-four *li*, Lude to Zhoawu sixty-two *li*, Zhaowu to Qilian postal-relay station sixty-one *li*, Qilian postal-relay station to Biaoshi seventy *li* … Yumen to Chitou ninety-nine *li*, Chitou to Ganqi eighty-five *li*, Ganqi to Yuanquan fifty-eight *li*…

2) Methodology

The database of the Hexi road web that I constructed is predicated upon the counties, marches, towns, and postal and relay stations recorded in the two manuscripts above. Zhou Zhenhe's 周振鶴 *Compilation and Interpretation of Treatise on Geography in the Book of Han* 漢書地理志彙釋 (known as the *Compilation and Interpretation* thereafter) and *Geography of the Western Han Dynasty* 西漢政區地理, and Tan Qixiang's 譚其驤 *Historical Atlas of China*, serves as a blueprint, indicating the rough whereabouts of each place. I refer to *Atlas of Chinese Cultural Relics* 中國文物地圖集 (known as the *Cultural Atlas* thereafter), specifically the volumes of Gansu, Ningxia, Qinghai, and Shaanxi, to find out the archaeological sites which have been confirmed by historians as the relics of the walled towns of interest. The latitudes and longitudes of a place can be obtained by searching the relics in Google-Map. The reliability verification is done through a comparison between the obtained coordinates and that in Harvard CHGIS. To give the example of Yuanquan County 淵泉縣: Zhou Zhenhe gives its location as

[50] Hu and Zhang, eds. *Dunhuang Xuanquan hanjian shicui* 敦煌懸泉漢簡釋粹, 56.

"east of modern Guazhou County of Gansu Province" (今甘肅瓜州縣東);[51] the *Cultural Atlas* adds more detailed information when it states that the walled town of Yuanquan County 淵泉縣故城 is also the site of Yuanquan County in the Han dynasty and describes the location as "north of Sidaogou Village, Sandaogou Township" (三道溝鎮四道溝村北側).[52] Harvard CHGIS specifies "Tun farmstead of Sidaoggou Village, east of modern Anxi County of Gansu Province" (今甘肅省安西縣東四道溝屯莊) as its location with the coordinate (40.48349 N, 96.84785 E).[53] The locations recorded by the *Cultural Atlas* and Harvard are less than two kilometers away from each other, and both align with Zhou's description; hence, I deem the coordinate reliable and ready to be entered into the database.

In most cases, the database of Harvard CHGIS does not register the place of interest; therefore, I compare the obtained coordinates with those in previous historians' research. One example is Guangzhi County 廣至縣 of Jiuquan Commandery; the *Compilation and Interpretation* lists the rough location of the county court as "southwest of modern Guazhou County in Gansu Province" (今甘肅瓜州縣西南).[54] According to the *Atlas*, "the walled town [Pochengzi] was the capital of Guangzhi County in the Han dynasty, where the courts of the Wei and Jin, Sui, and Tang dynasties set up Changle County" (此城[破城子]系漢廣至縣城，魏晉及

[51] Ban Gu 班固, *Compilation and Interpretation of Treatise on Geography in the Book of Han* 漢書地理志彙釋, edited by Zhou Zhenghe 周振鶴 (Nanjing: fenghuang chubanshe, 2021), 886.

[52] National Cultural Heritage Administration 國家文物局, eds. *Atlas of Chinese Cultural Relics, the Volume of Gansu* 中國文物地圖集 甘肅分冊 (Beijing: Cehui chubanshe, 2011), 296.

[53] Guazhou County is Anxi County; the county changed its name from "Anxi" to "Guazhou" in 2006 (*See* "民政部关于甘肃省安西县更名为瓜州县的批复" 民函〔2006〕31号).

[54] Ban Gu 班固, *Compilation and Interpretation*, edited by Zhou Zhenghe 周振鶴, 886.

隋、唐置常樂縣).[55] Based on this information, I located Pochengzi in Google-Map and recorded the coordinate (40.304119 N, 95.9038803 E) of the place. Since no record of Guangzhi County can be found in the database of Harvard CHGIS, I consulted with Li Bingcheng's article which corroborates the account in the *Atlas*; hence, I deem the coordinate reliable and admit it in the database.[56]

However, some cases are particularly thorny when no archaeological sites recorded in the *Cultural Atlas* corresponds with the place of interest. To confirm the exact locations of such places, I rely on other archaeological surveys, books, or local gazetteers related to the place. For example, Zhou merely indicates the location of Zhangye County 張掖縣 (known as Xiaozhangye 小張掖 in the excavated manuscript) of Jiuquan Commandery as "northeast to modern Wuwei Prefecture, Gansu Province" (今甘肅武威市東南);[57] the *Cultural Atlas* does not list any site as the relic of the Zhangye County, either. Hence, I rely on other scholarly articles, such as Hao Shusheng's 郝樹聲 "Geographical Examination of the Document of Mileage of Xuanquan, Dunhuang" 敦煌懸泉里程簡地理考述; based on textual analysis and field survey, Hao determined the location of Yumen County as "Wujiazhaizi of Xiehe township, south of modern Wuwei Prefecture" (今武威市南謝河鄉武家寨子).[58] Situating Wujiazhaizi village in Google

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[55] National Cultural Heritage Administration 國家文物局, eds. *Atlas of Chinese Cultural Relics*, 300.

[56] *See* Li Bingcheng 李并成, "Han Dunhuang jun Guangzhi xiancheng ji qi youguan wenti kao 汉敦煌郡广至县城及其有关问题考 [Research about Guangzhi County in the Han Dynasty and Relevant Issues], *Dunhuang yanjiu 04* 敦煌研究 04 (1991), 81-88.

[57] Ban Gu 班固, *Compilation and Interpretation*, edited by Zhou Zhenghe 周振鶴, 859.

[58] *See* Li Bingcheng 李并成, "Han Jiuquan jun shiyi zhi kao" 汉酒泉郡十一置考 [Geographical Research about Eleven Counties of Jiuquan Commandery in the Han dynasty], *Dunhuang yanjiu 01* 敦煌研究 01 (2014): 115-120. DOI:10.13584/j.cnki.issn1000-4106.2014.01.016. Hao Shusheng 郝樹聲, "Dunhuang Xuanquan licheng jian dili kaoshu" 敦煌

Map, I verify whether the location aligns with the record in the *Compilation and Interpretation*; if yes, I input the coordinate of the location (37.7222836 N, 102.7386842 E) in ArcGIS and compare it with that in Tan Qixiang's map. Wujiazhaizi is very close to Zhangye County in Tan's map; I, therefore, accept the coordinate. Yet, it is important to acknowledge that the method described above is not without its limitations. As the following discussion will reveal, identifying specific archaeological sites can be challenging, and the determination of walled towns or postal-relay stations by historians may be subject to revision as new evidence is uncovered. Consequently, despite these efforts, some locations of walled towns and postal-relay stations may not entirely ascertainable.

Table 1. *The Locations in the "Mileage Book of Postal-Relay Stations" of Juyan* and Table 2. *The Locations in the "Document of Mileage" of Xuanquan* below enumerate the coordinates of the postal-relay stations and the walled towns of marches, towns, and counties mentioned in mileage charts, determined as per the method described above. The third column indicates the type of the places in the mileage charts. Counties (*xian* 縣) and marches (*dao* 道) constituted the primary forms of territorial organization during the Western Han dynasty. Specifically, an area designated as a march typically indicated the presence of "unassimilated barbarian peoples." Additionally, Barbieri-Low and Yates reveal that marches were predominantly established in strategically sensitive areas near frontiers, primarily inhabited by non-Chinese populations.[59] A postal-relay station (*zhi* 置) functioned as a courier station (*you* 郵) equipped with stables. These stations were crucial logistical hubs where couriers, tasked with the

懸泉里程簡地理考述 [Geographical Study of The Distance of Xuan Quan Dunhuang Based on The Wooden-Strips of The Han Dynasty *Dunhuang yanjiu 03* 敦煌研究 03 (2000): 102-7.

[59] Anthony J. Barbieri-Low and Robin D. S. Yates, *Law, State, and Society in Early Imperial China: A Study with Critical Edition and Translation of the Legal Texts from Zhangjiashan Tomb No. 247*, (Leiden ; Brill, 2015), 118.

transmission of critical military and political documents, were stationed.[60] Figure 1 illustrates the locations of those places and the topography of their surroundings. However, the location of Junqi postal-relay station 鈞著置, remains unknown. Hence, I will exclude the two segments of roads involving Junqi in the subsequent modeling of the LCPA.

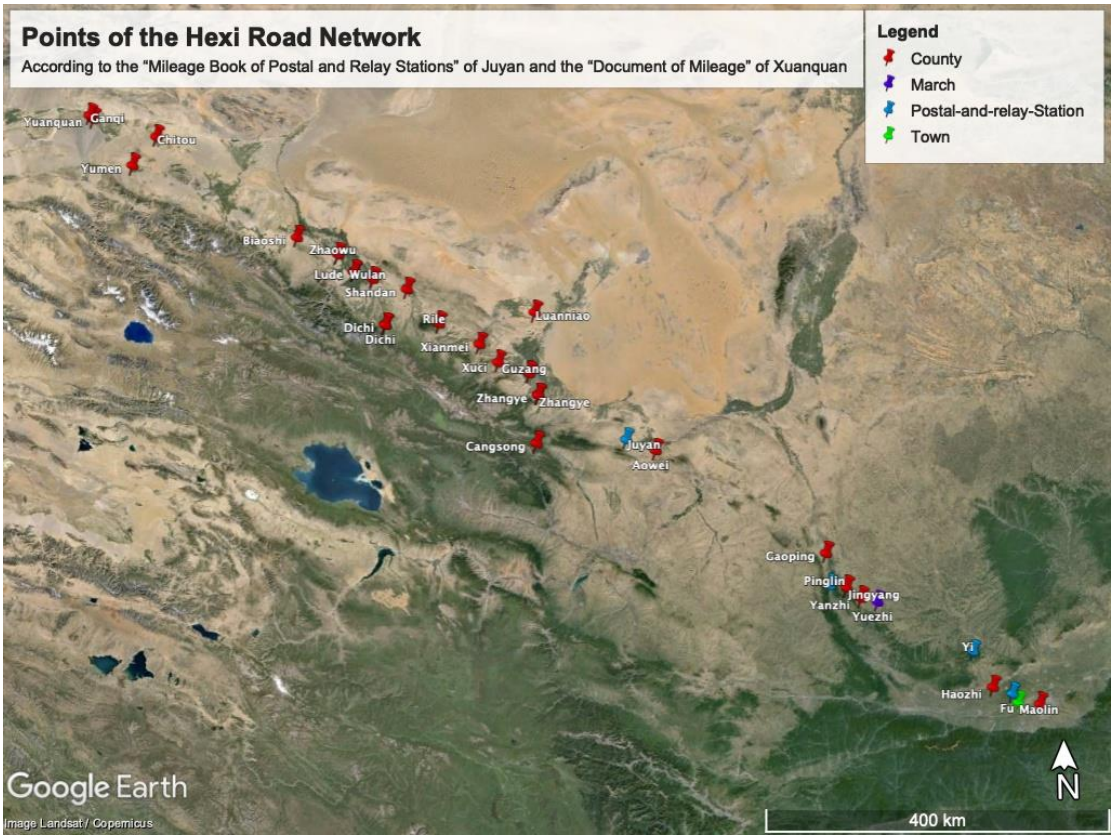

Figure 1. Points in the "Mileage Book of Postal-Relay Stations" and the "Document of Mileage"

Location (Chinese)	Location (English)	Type (Chinese)	Type (English)	Latitude	Longitude
長安	Chang'an	縣	County	34.3000257	108.8606125
茂陵	Maoling	邑	Town	34.3385278	108.5868752
茯	Fu	置	Postal-Relay Station	34.4355867	108.5146803
好畤	Haozhi	縣	County	34.5233067	108.2756203
義	Yi	置	Postal-Relay Station	34.9077557	108.0504573
月支	Yuezhi	道	March	35.4880494	106.8861624
烏氏	Yanzhi	縣	County	35.5393546	106.6828856

[60] Barbieri-Low and Yates, *Law, State, and Society in Early Imperial China*, 730.

涇陽	Jingyang	縣	County	35.6561262	106.5095836
平林	Pinglin	置	Postal-Relay Station	35.6871103	106.3000944
高平	Gaoping	縣	County	36.0148666	106.2741229
媼圍	Aowei	縣	County	37.125975	104.1992261
居延	Juyan	置	Postal and Relay Station	37.2450061	103.8334703
觻得	Lude	縣	County	38.96341	100.40263
揟次	Xuci	縣	County	38.0449199	102.2465869
張掖	Zhangye	縣	County	37.7103347	102.7449361
刪丹	Shandan	縣	County	38.7846741	101.0873124
日勒	Rile	縣	County	38.44008	101.49866
鈞著	Junqi	置	Postal-Relay Station	N/A	N/A
屋蘭	Wulan	縣	County	38.8893964	100.6473175
氐池	Dichi	縣	County	38.4306392	100.8101701

Table 1. The Locations in the "Mileage Book of Postal-Relay Stations" of Juyan

Location (Chinese)	Location (English)	Type (Chinese)	Type (English)	Latitude	Longitude
倉松	Cangsong	縣	County	37.2317137	102.711191
鸞鳥	Luanniao	縣	County	38.5378427	102.720927
張掖	Zhangye	縣	County	37.7103347	102.744936
姑臧	Guzang	縣	County	37.9305679	102.63634
顯美	Xianmei	縣	County	38.2296509	102.010621
氐池	Dichi	縣	County	38.4306392	100.81017
觻得	Lude	縣	County	38.96341	100.40263
昭武	Zhaowu	縣	County	39.1363644	100.189746
祁連	Qilian	置	Postal-Relay Station	39.3446022	99.9671908
表是	Biaoshi	縣	County	39.3058463	99.6516195
玉門	Yumen	縣	County	40.012857	97.4242254
池頭	Chitou	縣	County	40.3106245	97.7278387
乾齊	Ganqi	縣	County	40.5191233	96.7945796
淵泉	Yuanquan	縣	County	40.479968	96.8471968

Table 2. The Locations in the "Document of Mileage" of Xuanquan

3) Euclidean Distance

Based on the data derived from the two tables referenced, I have identified 27 distinct segments of routes between the postal-relay stations and the walled towns of marches, towns, and counties,

mentioned in mileage documents. For each segment, I have computed the Euclidean distance using Python. Specifically, I employed the *geodesic* function provided by the *geopy* library, a well-known Python module. Utilizing this pre-existing function, which was developed by earlier scholars, obviates the need for creating a new program for what amounts to a straightforward calculation. The distances recorded by the Han court, referred to herein as "Slip Distance" in the following tables along with the Euclidean distances computed through Python, are systematically presented in Table 3. *Segments and Distance in the "Mileage Book of Postal-Relay Stations" of Juyan*, and in Table 4. *Segments and Distance in the "Document of Mileage" of Xuanquan*.[61]

Start Place (Chinese)	Start Place (English)	Destination (Chinese)	Destination (English)	Slip Distance (*li*)	Slip Distance (km)	Euclidean Distance (km)
長安	Chang'an	茂陵	Maoling	70	29.106	25.5
茂陵	Maoling	茯	Fu	35	14.553	12.66
茯	Fu	好畤	Haozhi	75	31.185	23.99
好畤	Haozhi	羲	Yi	75	31.185	47.44
月氏	Yuezhi	烏氏	Yanzhi	50	20.79	19.26
烏氏	Yanzhi	涇陽	Jingyang	50	20.79	20.35
涇陽	Jingyang	平林	Pinglin	60	24.948	19.23
平林	Pinglin	高平	Gaoping	80	33.264	36.52
媼圍	Aowei	居延	Juyan	90	37.422	35
居延	Juyan	觻得	Lude	90	37.422	355.8
觻得	Lude	揟次	Xuci	90	37.422	190.2
揟次	Xuci	張掖	Zhangye	60	24.948	57.42
刪丹	Shandan	日勒	Rile	87	36.1746	52.4
日勒	Rile	鈞著	Junqi	50	20.79	N/A
鈞著	Junqi	屋蘭	Wulan	50	20.79	N/A
屋蘭	Wulan	氐池	Dichi	50	20.79	52.93

Table 3. Segments and Distance in the "Mileage Book of Postal-Relay Stations" of Juyan

[61] The "Slip Distance (km)" column is computed based on 1 Han *li* equal to 0.4153 kilometers; for more detailed explanation, *see* Barbieri-Low and Yates, *Law, State, and Society in Early Imperial China*, 744.

Start Place (Chinese)	Start Place (English)	Destination (Chinese)	Destination (English)	Slip Distance (*li*)	Slip Distance (km)	Euclidean Distance (km)
倉松	Cangsong	鸞鳥	Luanniao	65	27.027	144.98
鸞鳥	Luanniao	張掖	Zhangye	60	24.948	92.04
張掖	Zhangye	姑臧	Guzang	67	27.8586	26.28
姑臧	Guzang	顯美	Xianmei	75	31.185	64.07
氐池	Dichi	觻得	Lude	54	22.4532	69
觻得	Lude	昭武	Zhaowu	62	25.7796	26.6
昭武	Zhaowu	祁連	Qilian	61	25.3638	30.06
祁連	Qilian	表是	Biaoshi	70	29.106	27.55
玉門	Yumen	池頭	Chitou	99	41.1642	41.98
池頭	Chitou	乾齊	Ganqi	85	35.343	82.34
乾齊	Ganqi	淵泉	Yuanquan	58	24.1164	6.22

Table 4. Segments and Distance in the "Document of Mileage" of Xuanqu

4) LCPA Distance

The route between the postal-relay stations and the walled towns of marches, towns, and counties recorded in the "Mileage Book of Postal-Relay Stations" and the "Document of Mileage" determined through the LCPA presented in Figure 2. *LCPA Results* provide a modern computational perspective on ancient logistical challenges. The distances thus computed are outlined in Table 5. *Distance Comparison* demonstrates an intriguing pattern of minimal divergence between the LCPA-derived distances and their Euclidean counterparts, with an average variance of only 1.11 percent. This close alignment suggests that the theoretical straight-line distances serve as a reasonable approximation of the least cost paths determined through geographic and topographic considerations by the LCPA. Such alignment contains the additional implication that the Han court must have already imposed relatively stable rule over the Hexi region because the Han travellers had the liberty to choose the most rational path. This constracts with the situation prior to the Han takeover of the Hexi region, when General Huo Qubing 霍去

病 had to take long detours through the desert to raid the Xiongnu during the Hexi Campaign in 121 BCE.[62]

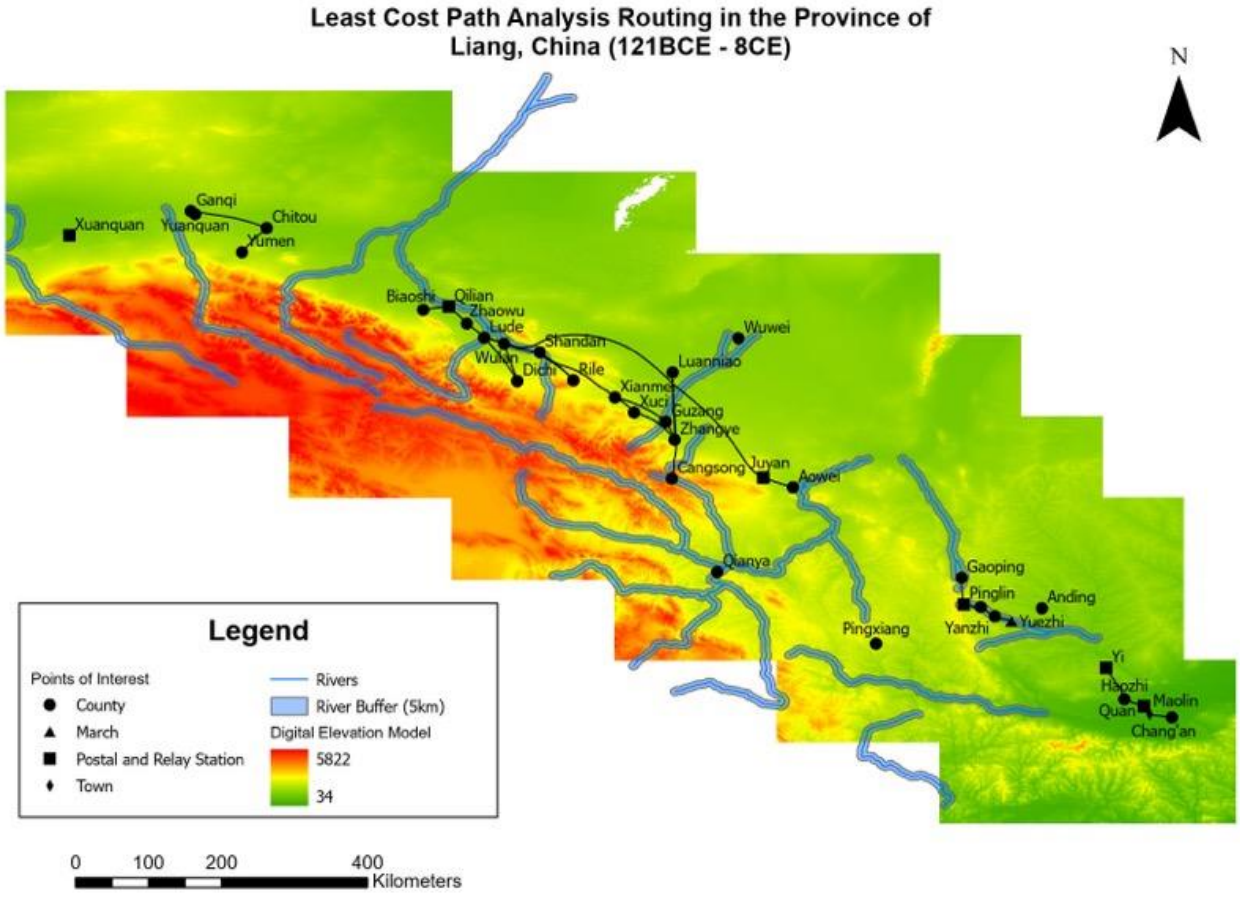

Figure 2. LCPA Results

The analysis of the discrepancies between distances recorded in excavated manuscripts and those derived from the LCPA reveals significant variances, underscoring the complexities of ancient travel and communication networks. The absolute differences between these recorded and computed distances, expressed in percentage terms, are detailed in the final column of the table below. Notably, only around half of the analyzed route segments (13 out of 25) exhibit variances smaller than 20%. Specific segments, including those from Juyan to Lude, from Lude

[62] Trombert, *Le Glaive et La Charrue*, 68; *SJ* 110, 2908 and *SJ* 111, 2931.

to Xuci, and from Xuci to Zhangye, show particularly pronounced disparities, with LCPA distances considerably exceeding those recorded on the slips.

This observed divergence between the slip and LCPA distances necessitates a thorough investigation into the methodologies employed in historical geography and the assumptions that underpin our current interpretations of these ancient routes. Although some historians, such as Wang Hanmei, have explored the variations between slip distances and Euclidean distances, her studies have been limited to specific routes, such as from Chang'an county to Yi postal-relay and from Yuezhi county to Pinglin post-relay station.[63] Her comparative analysis primarily seeks to demonstrate that slip distances differ from Euclidean distances.[64] However, it is evident from the table that the majority of significant discrepancies occur in routes located further west, while the distances from Chang'an to Yi postal-relay and from Yuezhi to Pinglin post-relay station, as recorded by the slips and reconstructed through LCPA, closely align. This alignment in more central routes compared to the larger variances in more remote western paths may explain why historians like Wang Hanmei have not deemed these differences significant enough to warrant further reconciliation. The question then arises: what do these substantial variations between slip distances and LCPA distances signify?

Start Place (Chinese)	Start Place (English)	Destination (Chinese)	Destination (English)	Slip Distance (km)	Euclidean Distance (km)	LCPA Distance (km)	Percentage Difference (%)
長安	Chang'an	茂陵	Maoling	29.106	25.5	25.670239	11.804305
茂陵	Maoling	茯	Fu	14.553	12.66	12.680511	12.8666873
茯	Fu	好畤	Haozhi	**31.185**	**23.99**	**24.036733**	**22.9221324**
好畤	Haozhi	羲	Yi	**31.185**	**47.44**	**48.174374**	**54.4793138**
月氏	Yuezhi	烏氏	Yanzhi	20.79	19.26	19.30957	7.12087542
烏氏	Yanzhi	涇陽	Jingyang	20.79	20.35	20.338057	2.173848

[63] Wang, "Juyan xin jian 'zhuan zhi dao li bu' diming xin zheng" 居延新簡《傳置道里簿》地名新證, 58.

[64] Wang, 58.

涇陽	Jingyang	平林	Pinglin	24.948	19.23	20.029663	19.7143539
平林	Pinglin	高平	Gaoping	33.264	36.52	36.478067	9.66229858
媼圍	Aowei	居延	Juyan	37.422	35	35.088359	6.23601357
居延	Juyan	觻得	Lude	**37.422**	**355.8**	**393.939183**	**952.694092**
觻得	Lude	揟次	Xuci	**37.422**	**190.2**	**193.594894**	**417.329095**
揟次	Xuci	張掖	Zhangye	**24.948**	**57.42**	**58.980656**	**136.414366**
刪丹	Shandan	日勒	Rile	**36.1746**	**52.4**	**52.616302**	**45.4509573**
日勒	Rile	鈞著	Junqi	20.79	N/A	N/A	N/A
鈞著	Junqi	屋蘭	Wulan	20.79	N/A	N/A	N/A
屋蘭	Wulan	氐池	Dichi	**20.79**	**52.93**	**52.814194**	**154.036527**
倉松	Cangsong	鸞鳥	Luanniao	**27.027**	**144.98**	**145.447318**	**438.155615**
鸞鳥	Luanniao	張掖	Zhangye	**24.948**	**92.04**	**91.9062**	**268.391053**
張掖	Zhangye	姑臧	Guzang	27.8586	26.28	26.349926	5.41546955
姑臧	Guzang	顯美	Xianmei	**31.185**	**64.07**	**64.896972**	**108.103165**
氐池	Dichi	觻得	Lude	**22.4532**	**69**	**69.098**	**207.742326**
觻得	Lude	昭武	Zhaowu	25.7796	26.6	26.66246	3.42464584
昭武	Zhaowu	祁連	Qilian	25.3638	30.06	30.081004	18.5981754
祁連	Qilian	表是	Biaoshi	29.106	27.55	27.612085	5.13267024
玉門	Yumen	池頭	Chitou	41.1642	41.98	42.049645	2.15100743
池頭	Chitou	乾齊	Ganqi	**35.343**	**82.34**	**82.887879**	**134.524175**
乾齊	Ganqi	淵泉	Yuanquan	**24.1164**	**6.22**	**6.28254**	**73.9490969**

Table 5. Distance Comparison with discrepancy cases in bold

2. Reasons for Discrepancies between Mileage Slips and Euclidean/LCPA Distances

1) An Inaccurate Primary Source?

Though less discussed by scholars, the two primary sources may contain errors, which might potentially explain the discrepancies. Daniel Sungbin Sou argues that the lack of advanced mapping technologies during these periods necessitated reliance on local maps produced by local governments.[65] He speculates that these maps, primarily designed to represent local terrains, were subsequently integrated into the empire-wide maps used by the central court.[66] This

[65] Daniel Sungbin Sou, "Crossing Borders: Control of Geographical Mobility in Early China," *T'oung Pao* 104, no. 3-4 (2018): 247. https://doi.org/10.1163/15685322-10434P01.

[66] Sou, "Crossing Borders: Control of Geographical Mobility in Early China," 220-2.

process, although overseen by a court-appointed prosecutor (*yushi* 御史), depended heavily on the veracity and precision of the local officials' submissions. The procedure of verifying (*chou* 讎) these maps was thus inherently flawed, reliant on the initial accuracy of the lower-level officials' work.[67] Nevertheless, it would be unwise to arbitrarily dismiss the practicality of local officials' prominent role in the production of geographical documents, as they often had firsthand knowledge of the local terrain and a better grasp of the topographical features of their regions.

Fölster and Staack meticulously delineated the methodological framework employed in the production of maps, while You Yi-fei conducted a detailed examination of the Qin slip collection discovered in Liye. You concurred that the geographical representations, including mileage charts and local maps from the Qin and Han dynasties, were crafted through a comparably rigorous process. According to You, these charts were initially submitted by local governments to county-level authorities, who subsequently forwarded them to inspecting prosecutors for verification.[68] However, the integrity of this verification process remains a subject of scrutiny, as it heavily depended on the initial accuracy of the reports provided by local officials.

While there is no definitive evidence that these officials routinely committed errors while compiling mileage charts, the absence of stringent verification measures introduces a significant potential for inaccuracies. The possibility of human error, whether intentional or unintentional, in

[67] Max Jakob Fölster and Thies Staack, "Collation in Early Imperial China: From Administrative Procedure to Philological Tool" In *Exploring Written Artefacts: Objects, Methods, and Concepts* edited by Jörg B. Quenzer (Berlin, Boston: De Gruyter, 2021), 894-5 and 897. https://doi.org/10.1515/9783110753301-043

[68] You Yi-fei 游逸飛, "Liye Qin jian suo jian de Dongting jun: Zhanguo Qin Han jun xian zhi gean yanjiu zhi yi" 里耶秦簡所見的洞庭郡: 戰國秦漢郡縣制個案研究之一, *Journal of Chinese Studies* No. 61 中國文化研究所學報 第六十一期 (2015): 51. https://www.cuhk.edu.hk/ics/journal/articles/v61p029.pdf.

these self-reported documents was substantial, which likely led to inconsistencies and discrepancies in the resultant cartographic outputs. For instance, Alexis Lycas indicates that the *Patterned Guidelines of Shazhou* (*Shazhou tujing* 沙州圖經), produced in a similar manner to the two Han dynasty slips, contains numerous scribal mistakes. This geographical document, attributed to either professional copyists or local clerks in the Tang dynasty, exemplifies the kinds of errors that could arise.[69] This dependence on locally sourced and minimally verified data may have contributed to the variations observed between the slip distances and the distances calculated through the LCPA. While technological and procedural limitations offer a possible explanation for the observed discrepancies, the absence of direct evidential support demands a cautious interpretation of such an explanation.

2) What Constituted a County in the Western Han Dynasty?

In historical geographical research, scholars' accurate interpretation of the mileage documents is often predicated upon contemporary scholarly interpretations of geographical references. A prevalent assumption among historians utilizing the primary sources such as the "Mileage Book of Postal-Relay Stations" and the "Document of Mileage" is that these documents refer explicitly to the walled towns that serve as the administrative seats of counties. This interpretation dictates that the recorded slip distance represents the distance between two such county seats unless otherwise noted as a postal-relay station.[70] However, emerging evidence suggests that this interpretation may require reconsideration.

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[69] Alexis Lycas, "The Patterned Guidelines of Shazhou (Shazhou Tujing) and Geographical Practices in Tang China," *Centaurus* 62, no. 3 (2020): 483. https://doi.org/10.1111/1600-0498.12279.

[70] For more examples where historians make this assumption, *see* Li Bingcheng 李并成, *Hexi zoulang lishi dili* 河西走廊历史地理 [Historical Geography of the Hexi Corridor], Lanzhou: Gansu renmin chubanshe, 1995; Hao Shusheng 郝樹聲, "Dunhuang Xuanquan licheng jian dili kaoshu" 敦煌懸泉里程簡地理考述 [Geographical Study of The Distance of Xuan Quan

Historians specializing in the Western Han dynasty have noted the significance of two stone inscriptions used as boundary markers. These markers delineated the territorial boundaries between Qu 朐 county of Donghai 東海 commandery and Gui 柜 county of Langya 琅邪 commandery.[71] The existence of such markers corroborates the understanding that the Han conceptualization of a county encompassed more than just the walled town, extending to well-defined territorial boundaries. Further evidential support for this notion comes from a legal case documented by the historian Ban Gu. Kuang Heng 匡衡, who served as Chancellor at Emperor Yuan's court, was ennobled and granted a noble domain in Tong 僮 county, Linhuai 臨淮 commandery. However, due to an error by the local government in defining the domain's boundaries, he was mistakenly allotted an additional 400 *qing* (approximately 1898.4 acres).[72][73]

Dunhuang Based on The Wooden-Strips of The Han Dynasty], *Dunhuang yanjiu 03* 敦煌研究 03 (2000): 102-7; Hao Shusheng 郝樹聲, "Dunhuang Xuanquan licheng jian dili kaoshu" 敦煌懸泉里程簡地理考述 [Geographical Study of The Distance of Xuan Quan Dunhuang Based on The Wooden-Strips of The Han Dynasty (Part II)], *Dunhuang yanjiu 06* 敦煌研究 06 (2005): 63-8; Su Hai-yang Li Bingcheng 李并成, "Han Jiuquan jun shiyi zhi kao" 汉酒泉郡十一置考 [Geographical Research about Eleven Counties of Jiuquan Commandery in the Han dynasty], *Dunhuang yanjiu 01* 敦煌研究 01 (2014), 115-120. DOI:10.13584/j.cnki.issn1000-4106.2014.01.016; Jidong Yang, "Transportation, Boarding, Lodging, and Trade along the Early Silk Road: A Preliminary Study of the Xuanquan Manuscripts," *Journal of American Oriental Society* 135, no. 3 (2015): 421-32. https://doi.org/10.7817/jameroriesoci.135.3.421; Wu Xin 武鑫 and Jia Xiaojun 贾小军, "Han dai zhangye jun yizhi yu daolu jiaotong kao" 汉代张掖郡驿置与道路交通考 [Research on the Post Station and the Road Traffic of Zhangye County in Han Dynasty], *Journal of Shihezi University (Philosophy and Social Sciences)* 33, no. 5 石河子大学学报(哲学社会科学版) 33 第 5 期 (2019): 92-9, DOI:10.13880/j.cnki.cn65-1210/c.20191014.009; Huang Xuechao 黄学超, "Xuanquan lichen jian suo jian hexi yidao yu zhengqu zaiyi" 悬泉里程简所见河西驿道与政区再议 [A Restudy of the Courier Routes and Administrative Divisions of Hexi as Seen in Han Dynasty Slips from Xuanquan], The Chinese Historical Geography no. 3 历史地理研究 第 3 期 (2022): 42-53.

[71] Sou, "Crossing Borders: Control of Geographical Mobility in Early China," 222.

[72] *HS* 81, 3346.

[73] 1 *qing* (頃) equal to 4.746 acres (Nancy Lee Swann, *Food & Money in Ancient China: The Earliest Economic History of China to A.D. 25, Han Shu 24, with Related Texts, Han Shu 91 and Shih-Chi 129* (Mansfield Centre, Connecticut: Martino Publishing, 2013), 363).

The mistake went unnoticed until a decade later, during routine boundary delineations and map-making activities by the commandery government. Upon discovery, Chancellor Kuang was impeached and accused of encroaching on lands, as he had knowledge of county boundaries from his role as Chancellor but failed to rectify the known discrepancy. Consequently, the emperor removed him from office and stripped him of his title.[74] This case underscores that county boundaries were precisely defined, at least within the Central Plains during the Western Han dynasty. Both local and central administrations demonstrated concern for these boundaries, taking measures to periodically review and amend them as necessary. The broader implication of these findings is that references to a county in historical records, such as mileage documents, likely encompassed the entire area within these boundaries, not merely the area enclosed by the walled town. This interpretation suggests a comprehensive administrative and jurisdictional framework that went beyond simple urban centers to include their surrounding territories.

This broader territorial concept is particularly relevant in the Hexi region during the Western Han period. According to Chang Chun-shu, the Han integration of this area was gradual, initially focusing on military establishments such as fortresses and watchtowers, with subsequent expansion into civil governance of surrounding territories.[75] The boundaries between neighbouring counties in the Hexi region were likely non-contiguous during the initial phases of annexation. Consequently, the distances recorded in the mileage documents from this period could plausibly refer to the span between the outer boundaries of two expanding Han territories, rather than the distances between their seats. In further support of the hypothesis that the mileage documents often refer to broader territorial areas rather than specific walled towns, Sheng-shiuan

[74] *HS* 81, 3346.

[75] Chang, *The Rise of the Chinese Empire*: *Frontier, Immigration, and Empire in Han China, 130 B.C.-A.D. 157*, 79-80 and 89-91.

Shih provides compelling evidence through the reconciliation of three different records. The excavated materials detail three different records of distances (70 *li*, 75 *li*, and 80 *li*) from Juyan county (居延縣) to the Jiaqu 甲渠 fortress tower (*houguan* 候官).[76] Shih's analysis suggests that the term "Juyan county" was used by the Han people not merely in reference to the county's walled town but to encompass the surrounding civilian-inhabited areas as well.[77] This broader use of county names in official documents indicates a nuanced understanding of geographic spaces by the Han administration, where a county's identity extended beyond its administrative centre to include its peripheral zones.

The perspective of viewing a county not merely as a walled town but also encompassing its neighboring areas is critical for interpreting the historical mileage records. These documents may have measured distances to or from the outer limits of a county's inhabited regions rather than strictly between the county seats. This interpretation is supported by observations that county boundaries often spanned larger territories where administrative expansion occurred gradually and in a non-linear fashion. While some may cast doubt upon this conjecture due to minimal discrepancies observed in the distances between Chang'an county to Yi postal-relay and from Yuezhi county to Pinglin post-relay station, it is essential to consider the source of geographical information. As discussed in the previous section, maps and mileage charts were produced and submitted by local governments, indicating that there could have been significant regional variation in the accuracy and methodology of local officials' work. Therefore, acknowledging these regional variations is crucial in reconciling the understanding that the

[76] Sheng-shiuan Shih 石昇烜, "Hechu shi Juyan?—Juyan cheng jianzhi fanying de handai Hexi jingying jincheng" 何處是居延？——居延城建置反映的漢代河西經營進程, 史原 復刊第五期（總 26 期）(September 2014): 17.

[77] Shih, "Hechu shi Juyan?" 何處是居延？, 18-9.

distances recorded in mileage documents may refer to points within the counties that extend beyond the walled towns themselves. This broader approach to interpreting historical geographical data allows for a more nuanced understanding of the administrative and territorial dynamics of ancient regions. Nevertheless, one should not overlook the inability of this theory to account for the fact that the "in-between" zones—those areas lying between county boundaries—would still need to be crossed. Consequently, this interpretation may not be the most convincing solution to the discrepancies among the slip distances, the Euclidean distances, and the LCPA distances.

3) Were all Postal-relay Stations in the Walled Towns?

The interpretation of distances recorded in ancient Han dynasty documents must consider the possibility of regional variation in the placement and function of postal-relay stations. While it is true that boundary markers delineating county territories have been found in the imperial heartland, suggesting a uniform administrative structure, the frontier regions such as the Hexi corridor potentially had different practices. Critics of the broad territorial interpretation may argue that such boundary markers and the administrative practices they represent might not apply universally across the empire.

Wang Hanmei challenges the traditional interpretation by suggesting that names like Chang'an, Maoling, or Yuezhi, often mentioned in the manuscripts, do not refer to counties, towns, or marches as might be expected.[78] Instead, she claims that these names correspond to postal-relay stations that, while bearing the names of larger administrative divisions, are not

[78] Wang Hanmei 王含梅, "Handai jiuquan shiyi zhi xin kao" 汉代酒泉郡十一置新考 [A New Research on the Eleven Posts in Jiuquan Prefecture in the Han Dynasty], *China's Borderland History and Geography Studies* 33, no. 2 中国边疆史地研究 第 33 卷 第 2 期 (June, 2023): 142-3.

necessarily located within or near the corresponding walled towns.[79] This observation is supported by He Shuangquan, who posits that some postal-relay stations were strategically placed not in the walled towns but along the roads most frequently traveled, often at the peripheries of the counties.[80] This placement of postal-relay stations suggests that distances recorded in the "Mileage Book of Postal-Relay Stations" and the "Document of Mileage" might not measure the span between the central administrative towns of two counties but rather between any two points within the boundaries where these stations were located. This interpretation helps clarify why the slip distance—the distance recorded on the slips—often does not match the LCPA distance, which calculates the theoretically optimal routes between major county seats, or the Euclidean distance between two county seats.

Further evidence supporting this interpretation comes from a detailed analysis of the "Document of Mileage" found in the Xuanquan slip collection. In this document, a specific segment stands out: the distance from Lude to Zhoawu is noted as "Lude to Zhoawu sixty-two *li*" (觻得去昭武六十二里府下);[81] According to Hu Pingsheng and Zhang Defang, and He Shuangquan, the term "府下" refers specifically to the office and residence of the Governor (*taishou* 太守) of Zhangye commandery.[82] Extrapolating from this rendering, Hu and Zhang indicate that Zhaowu was once the commandery capital, but the capital of Zhangye commandery

[79] Wang, "Juyan xin jian 'zhuan zhi dao li bu' diming xin zheng" 居延新簡《傳置道里簿》地名新證, 56.

[80] He Shuangquan 何双全, "Handai xibei yidao yu chuanzhi – Jiaqu houguan, Xuanquan Han jian zhuanzhi dao li bu' kaoshu" 汉代西北驿道与传置–甲渠候官、 悬泉汉简 《传置道里薄》考述, *Journal of National Museum of China* no.1 中国国家博物馆馆刊 第 1 期 (1998): 64-5.

[81] Hu and Zhang, eds. *Dunhuang Xuanquan hanjian shicui* 敦煌懸泉漢簡釋粹, 56.

[82] Hu and Zhang, eds., 58; He, "Handai xibei yidao yu chuanzhi" 汉代西北驿道与传置, 63.

later moved to Lude.[83] Therefore, the phrase should be interpreted as "[the distance between] Lude to the Court of the Grand Administrator [of Zhangye commandery] in Zhaowu 62 *li*." As Hu and Zhang, and He suggest, the term "府下" is uniquely mentioned in this passage and not in descriptions of other routes on the same wood board.[84] This specificity suggests that the starting point of this particular route is distinct from others, being directly associated with the administrative center. Conversely, one can reasonable conclude that the absence of such specification in other paths implies that their starting points could be located outside the traditional walled towns, possibly near or at postal-relay stations situated along major roads. This nuanced understanding of the geographic and administrative references in the mileage documents reveals a complex network of routes that were likely designed to optimize connectivity between various points of administrative and logistical importance, rather than strictly between county seats.

4) When the County Seats Move

It is also essential to consider the potential for temporal and locational shifts within the mileage documents. The complexities associated with interpreting the records are further compounded by the mobility of administrative centres, as illustrated by the historical shifts in the seat of Dongting commandery 洞庭郡 during the Qin dynasty. This commandery, located on the southern frontier of the Qin empire, reportedly relocated its administrative centre at least three times from Xinwuling 新武陵 to Linyuan 臨沅 to Yuanyang 沅陽 within a relatively short period, ten years.[85] He Shuangquan and Jidong Yang highlight the undated and fragmented

[83] Hu and Zhang, eds., 58.
[84] Hu and Zhang, eds., 58; He, 63.
[85] You, "Liye Qin jian suo jian de Dongting jun" 里耶秦簡所見的洞庭郡, 32-3. https://www.cuhk.edu.hk/ics/journal/articles/v61p029.pdf

nature of the "Mileage Book of Postal-Relay Stations" and the "Document of Mileage,"[86] imposing challenges for contemporary scholars to use them accurately. The LCPA distance, calculated using the coordinates of walled towns as determined from archaeological evidence, assumes fixed locations for these county centres. However, if the mileage documents refer to a different, earlier location of these towns—a plausible scenario given the documented relocations—discrepancies between the documented and calculated distances are inevitable.

This possibility is particularly salient when considering that the mileage documents might reference an administrative centre before it was moved, while the LCPA distances are calculated based on its later, a changed location. Such variations are critical in understanding the geographical inconsistencies observed in the records. While the Hexi region and Dongting commandery represent different frontier areas, the practice of relocating administrative centers could have been a broader administrative practice, especially in newly conquered or unstable territories.

Nevertheless, it is important to approach this hypothesis with caution. The absence of concrete evidence about similar administrative shifts in the Hexi region suggests that these findings from Dongting commandery might not universally apply. Without direct archaeological or textual evidence to confirm the relocation of county seats in the Hexi region, any conclusions drawn must be tentative. Thus, while the shifting locations of the county's walled towns provide a compelling explanation for some of the discrepancies observed between the slip and LCPA distances, this should not overshadow other potential interpretations or the need for more localized and contextual analyses.

[86] He, "Handai xibei yidao yu chuanzhi – Jiaqu houguan, Xuanquan Han jian 'zhuanzhi dao li bu' kaoshu" 汉代西北驿道与传置–甲渠候官、 悬泉汉简 《传置道里薄》考述, 65; Yang, "Transportation, Boarding, Lodging, and Trade along the Early Silk Road," 423.

3. Concluding Remarks

This chapter has compared various measures of distance—slip distance, Euclidean distance, and LCPA distance in the Hexi region, and has highlighted the discrepancies between the slip distance recorded in the mileage charts and the LCPA distance. Such discrepancies can be attributed to several factors explored in this section. The broader territorial concept of counties potentially encompassing regions beyond central walled towns, the strategic placement of postal-relay stations, the variable historical context of different regions like Hexi and Dongting, and the potential relocation of county seats all might contribute to the observed variances. Despite the discrepancies among these distances and the lack of a definitive explanation that fully accounts for these variances, it is clear that the Han government was acutely aware of the strategic and economic implications of Hexi's distance from the imperial core, Chang'an. Having explored the complexities and potential discrepancies in the historical mileage records, the chapter will shift its attention to the economic implications of these distances, particularly between the imperial core and the new frontier, the Hexi region. This next section examines how the spatial dynamics between these areas influenced economic policies of the central court.

Chapter 2: The Economic Implications of Conquering Distant Territories

> 凡興師十萬，出征千里，百姓之費，公家之奉，費日千金。
> Raising a host of a hundred thousand men and marching them great distances entails heavy loss on the people and a drain on the resources of the State. The daily expenditure will amount to a thousand of cash.[87]

In the annals of military history, not many have articulated the immense cost of war as succinctly as Sun Wu 孫武. His observation encapsulates the profound economic and social implications of prolonged military campaigns to a great distance. This principle is vividly illustrated by the expansionist endeavors of the Western Han empire, where the imperial army travelled to and conquered remote foreign land. The relentless expansion under Emperor Wu's reign demanded significant resources not only for the immediate needs of provisioning and equipping the troops but also for the continuous support in hostile territories. Beyond the battlefield, the fiscal and administrative costs of integrating these new distant territories into the Han realm were monumental, necessitating substantial investment in administrative structures and the assimilation of non-Chinese populations. The imperial expansion of the Western Han empire into the Hexi region exemplifies the significant economic challenges imposed by distance. Situated over 4,080 *li* (approximately 1,697 km) from the imperial core of Chang'an, the westernmost Longle 龍勒 county represented the far extent of Han control and influence.[88]

The expansive military strategies and the consequent redefinition of the empire's borders under Emperor Wu and the reigns of his successors raised critical fiscal challenges. These

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[87] Sunzi, *The Art of War*, trans. Lionel Giles (Vancouver, B.C.: Engage Books, 2020), 86.

[88] Zhang Junmin 張俊民 maintains that Xuanquan postal-relay station, to the east of the walled town of Longle county, was 4080 *li* away from Chang'an based on the mileage chart unearthed at Xuanquan ("長安四千八十" VT1611③：39(B)), *see* Zhang Junmin 張俊民, "Youguan handai guangzhi xian de jige wenti—yi xuanquan zhi chutu wenshu wei zhongxin de kaocha" 有關漢代廣至縣的幾個問題——以懸泉置出土文書為中心的考察, *Qinhan yanjiu 7* 秦漢研究 7 (2013): 57.

challenges prompt the central questions of the research in this chapter: how did Emperor Wu's court in Chang'an fiscally address the economic predicament as a result of the imperial conquest and integration of the distant territories? This chapter seeks to compute the economic cost imposed by distance and probe into the court's response. I will begin the chapter by estimating the cost of expansionary wars and the cost of maintenance in the Hexi region. The considerable distance from the imperial centre to new frontiers required the court to implement extensive military and administrative strategies to maintain its grasp over such remote territories. The economic ramifications of creating and managing such a distant frontier were profound. The logistical demands of sustaining a military and administrative presence so far from the capital incurred significant costs, impacting the overall economic strategies of the Han dynasty. This chapter will then outline the court's response to these challenges: ultimately, the central court was compelled to restructure the fiscal regime and adopt innovative economic policies. These policies implemented by modified institutions of fiscal management were designed to mitigate the economic difficulties because of imperial expansion to distant areas.

1. Costs of Conquest

The military endeavors necessary for the conquest and subsequent retention of the Hexi corridor imposed a considerable economic strain on the Western Han Empire. In his "Treatise on Food and Money" (*shihuo zhi* 食貨志) Ban Gu meticulously documented numerous expensive campaigns against the Xiongnu, as he recorded:

> 其後，衞青 歲以數萬騎出擊匈奴，遂取河南地，築朔方。
> After this Wei Qing (d. 106 BCE) from year to year led swift horsemen to the number of several ten thousands out in battle against Xiongnu. At this time was seized the land [in the bend] of the Yellow River [north of the Great Wall where, 126 B.C.], Shuofang was built.[89]

[89] *HS* 24B, 1158; Swann, *Food & Money in Ancient China*, 246.

此後四年， 衞青比歲十餘萬衆擊胡，斬捕首虜之士受賜黃金二十餘萬斤，而漢軍士馬死者十餘萬，兵甲轉漕之費不與焉。
Four years later (124-123 B.C.) Wei Qing in [two] successive years with more than one hundred thousand men went out to attack the Xiongnu. Those officers and soldiers who cut off heads of barbarians, or captured [them], received gifts, [totaling] more than two hundred thousand [catties of] actual gold. Of Han forces, officers land men, and horses, the dead [numbered] more than one hundred thousand, [while] there was the additional expense of weapons and armor, as well as that of transport by land and water. [90]

其明年，票騎仍再出擊胡，大克獲。渾邪王率數萬衆來降，於是漢發車三萬兩迎之。既至，受賞，賜及有功之士。是歲費凡百餘鉅萬。
The following year (121 BCE) the General of the Flash Cavalry (Huo Qubing) went out twice [the same year] to fight against the Xiongnu. He won a great victory and took many [prisoners. In the autumn, the native ruler,] the King of Hunye, at the head of the multitude [of his people] numbering several ten thousands, came to surrender [to the throne]. Thereupon, the Han sent forth thirty thousand large carts to receive them. When they arrived rewards were bestowed, as much as were [ordinarily] given to officers [and soldiers, shih] who had performed meritorious services. That year there was spent all together [a sum equal to] more than ten billion [cash].[91]

其明年，大將軍、票騎大出擊胡，賞賜五十萬金，軍馬死者十餘萬匹，轉漕車甲之費不與焉。是時財匱，戰士頗不得祿矣。
The next year (119 BCE), the General-in-chief and the General of the Flash Cavalry (Wei Qing and Huo Qubing) went out with a great army to attack the barbarian of the north (Xiongnu). Rewards bestowed [amounted to] five hundred thousand [catties of] gold. Of army horses the dead numbered more than one hundred thousand, [while] there were the additional expenses for transport by land and water, as well as for chariots and armor. At the moment the monetary resources [of the government] were depleted, and officers [and soldiers] in combat service received hardly any pay.[92]

These records indicate that the Han court mobilized tens of thousands of soldiers per campaign, incurring substantial casualties and significant financial costs. The expenditures included the cost of weapons and armor, transportation fees, and officers' salaries. Also, when the troops achieved victories on the battlefield, the central court was compelled to distribute monetary rewards to the troops and their generals. The figures provided by Ban Gu may not be entirely accurate but rather literary estimations; the actual size of the army could have been larger or smaller than the

[90] *HS* 24B, 1159; Swann, *Food & Money in Ancient China*, 250-1.
[91] *HS* 24B, 1161; Swann, 258-9.
[92] *HS* 24B, 1165; Swann, 274-5.

"several tens of thousands" he described, and the court may not have expended "more than ten billion cash" on the war. While historians cannot draw statistical conclusions from such unverified data, one can reasonably infer that the wartime economy under Emperor Wu's rule was unsustainable and in decline. This could be due to labor forces, who would have otherwise produced goods and paid taxes, being conscripted into warfare, where many likely perished. At the same time, the imperial finances deteriorated due to a decrease in tax revenue and increased wartime expenditures.

In addressing the economic ramifications of sustaining military operations at a distance, one must consider both the direct and indirect costs incurred by the Han empire during its campaigns against the Xiongnu. A critical oversight in Ban Gu's analysis is his exclusion of the substantial grain provisions financed by the central court and consumed by the troops in service. Fan Lixiang underscores the necessity of a basic survival allotment of 2 *shi* of grain per person per month.[93] Corroborating this figure, Shangguan Xuzhi's records reveal that the food allowance for a soldier typically ranged between 1.8 and 2.6 *shi* of grains, aligning with the commonly disbursed 2 *shi*.[94] Further detailed by Éric Trombert, the annual ration included 24 *shi* dehulled grains («*grains égrugés*») or 40 *shi* raw grains («*grains bruts*»).[95] It is thus reasonable to assume 2 *shi* of grain per soldier per month when computing the costs. In Trombert's

[93] Fan Xiangli 范香立, "Hanjian suo jian Hexi shubian junfei xiangguan wenti kao" 漢簡所見河西戍邊軍費相關問題考 [An Analysis of the Cost of Army Stationed in the Hexi Region from the Excavated Han Slips], *Journal of Longdong University* 28, no. 4 陇东学院学报 28: 4(2017): 38.

[94] Shangguan Xuzhi 上官绪智, "Qin Han shiqi junfei kaizhi, choucuo yu guanli wenti yanjiu" 秦汉时期军费开支、筹措与管理问题研究 [Research on Military Expenditure, Financing, and Management Issues during the Qin and Han Dynasties], *Academic Forum of Nandu* (*Journal of the Humanities and Social Sciences*) *24*, no. 6 南都学坛(人文社会科学学报) 第 25 卷第 6 期 (2005): 9. DOI :10.1670/j.cnki.cn41-157/c.205.06.03.

[95] Trombert, *Le Glaive et La Charrue*, 190.

comparative analysis of two excavated documents, he concludes that the price of grain in the Jiuquan commandery in 9 BCE, as set by the Han administration, was approximately 55 cash per *shi*.[96] This figure, however, is notably lower than what he surmises as the prevailing grain price in the free market during the same period.[97] Walter Scheidel's assessment supports this perspective by indicating that towards the end of the first century BCE, the grain price ranged between 50 to 75 cash per *hu*,[98] translating to approximately 83.33 to 125 cash per *shi*.[99] Given that Trombert's estimate is based on excavated materials, it presents a compelling case for the administrative pricing of grain being lower than market rates. While Scheidel's figures suggest a higher market price, reconciling these with Trombert's findings is feasible if Scheidel's figures are indeed referencing free market conditions, separate from the controlled prices set by the Han administration. Therefore, if the grain expenditure per soldier paid by the court is calculated based on the state-controlled price listed by Trombert, it would approximate 1320 cash annually, exclusive of additional logistical costs. Yet, one should notice that the actual annual costs of feeding one soldier would be higher than 1320 cash because the market price was higher than that set by the Han court.

However, the logistical challenges presented by actual battlefield conditions further compounded these expenses. Trombert elucidates that military campaigns typically did not extend beyond 100 days due to the mortality of the bulls employed for transporting supplies,

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[96] Trombert, *Le Glaive et La Charrue*, 191.

[97] Trombert, 191.

[98] Walter Scheidel, "State Revenue and Expenditure in the Han and Roman Empires," in *State Power in Ancient China and Rome*, edited by Walter Scheidel (New York, New York: Oxford University Press, 2015), 154. http://site.ebrary.com/id/10961877.

[99] According to Chang Chun-shu, in the Han dynasty, one *hu* equated to 0.6 *shi* (Chang, *Frontier, Immigration, and Empire ni Han China, 130 B.C.-A.D. 157*, xxiii.)

which could not survive beyond this duration.[100] Additionally, the severe northern climate necessitated substantial fuel provisions, specifically wood and charcoal ("bois et charbon de bois" *xin tan* 薪炭) to sustain the soldiers. Each Han soldier, according to Trombert's computation, consumed approximately 18 *shi* of grain per campaign.[101]

The aggregate financial burden was significantly amplified by the logistical necessities of moving and sustaining an army over great distance. Trombert's analysis reveals that the Han empire deployed an extensive logistical network involving 100,000 bulls, 30,000 horses, and tens of thousands of donkeys and camels, along with 180,000 convicts, to facilitate the transit of approximately 600,000 individuals from the imperial core to the Western Regions.[102] This mobilization reflects not only the direct costs of provisioning but also the intricate logistical coordination required to maintain such large-scale military endeavors far from the central seat of power. These factors collectively underscore the profound economic implications of maintaining extended military campaigns, particularly in terms of provisioning and logistics.

The Han conquest of the Hexi region stood as a significant historical event, marking the expansion of the Han empire into territories previously beyond the reach of the Qin dynasty.[103] This strategic annexation not only redefined the northwestern border of the empire but also shifted the military and economic landscape significantly. According to Trombert, annexing the Hexi region was a milestone marking the success of the Han eight-year military operation.[104] The successful campaign led to a reduction by half of the soldiers previously stationed in Longxi 隴西, Beidi 北地, and Shang 上 commanderies, as these areas transitioned from frontier zones to

[100] Trombert, *Le Glaive et La Charrue*, 69.
[101] Trombert, 69.
[102] Trombert, 76.
[103] Trombert, 68.
[104] Trombert, 68.

part of the imperial heartland.[105] This reassignment indicates a strategic consolidation of military resources following territorial expansion.

The initial campaign to secure this strategic frontier involved mobilizing a substantial force, including over 10,000 cavalrymen, who traversed thousands of *li* to confront the Xiongnu.[106] This large-scale deployment was not only a demonstration of military might but also a substantial economic undertaking. Chang Chun-shu provides a meticulous breakdown of the costs associated with maintaining such a force. Despite the reliance on conscription within the Western Han military framework, the state bore significant expenses for logistical support, including the provision of garments, food, weaponry, and horse feed.[107] In his detailed financial analysis, Chang estimates that the annual maintenance cost for a single cavalryman, encompassing clothing, weapons, protective gear, and provisions for the horse, was approximately 87,000 cash. By contrast, the cost for an infantryman was considerably lower, at about 10,000 cash per year.[108] Based on these figures, the campaign to secure the Hexi region alone represented a formidable financial outlay for Emperor Wu's court, totaling an estimated 870 million cash. This staggering sum underscores the heavy economic burden imposed by military operations during this period, highlighting the significant impact of geographical expansion on the empire's financial resources. The economic implications of such military endeavors provide a profound insight into the strategic considerations of the Han dynasty as it navigated the complexities of territorial expansion and frontier defense.

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[105] Trombert, 68.
[106] Chang, *Nation, State, and Imperialism in Early China, ca. 1600 B.C.–A.D. 8*, 167.
[107] Chang, *Nation, State, and Imperialism in Early China, ca. 1600 B.C.–A.D. 8*, 86.
[108] Chang, 86.

2. Costs of Maintenance

The financial burden of integrating the Hexi region into the Han empire extended well beyond the initial costs associated with conquest, influencing the ongoing maintenance and defense of this strategic frontier. Trombert elucidates the model of the Han empire's westward expansion, describing how, following the initial military conquests, quasi-civilian and quasi-military forces initiated the integration process. This strategic move was designed to encourage further migration and settlement by civilians into the newly annexed territories.[109] Ban Gu, in his "Treatise on Food and Money," recorded the central court's efforts to assimilate the newly conquered border regions in the Ordos region under Emperor Wu's rule. As he recorded:

> 又興十餘萬築衞朔方，轉漕甚遠，自山東咸被其勞，費數十百鉅萬，府庫並虛。
> Furthermore, there were collected more than one hundred thousand [conscripted] men to build and guard Shuofang (126 BCE). Transport of grain both by land and by water was over an exceedingly great distance. From the mountain (Hua) eastward all the land alike suffered the burden of this, and there was spent from several to ten billions [of cash]. The imperial treasury and government storehouses all became empty.[110]

> 乃徙貧民於關以西，及充朔方以南新秦中，七十餘萬口，衣食皆仰給於縣官。
> The poor people [were ordered either] to emigrate west of the Pass, [or] to fill [Xinqinzhong], which was located in southern Shuofang [commandery]: more than seven hundred thousand persons. [All these] looked to the central government *xianguan* for provision of clothes and food.[111]

Ban Gu revealed a concerted effort by the Han administration to stabilize and sustain the region, underscored by the large-scale relocation and conscription efforts detailed in historical records. The relocation of over seven hundred thousand impoverished individuals from the imperial heartland to its new border region was a massive undertaking. These populations were entirely dependent on the central court for the provision of essential resources such as clothing and food,

[109] Trombert, *Le Glaive et La Charrue*, 72.
[110] *HS* 24B, 1158; Swann, *Food & Money in Ancient China*, 249.
[111] *HS* 24B, 1162; Swann, 263-4

placing a continuous strain on the imperial coffers. Concurrently, the construction and maintenance of defensive structures further compounded the court's financial burden.

While the Hexi region was not fully integrated in the Han realm during Emperor Wu's reign, the strategies implemented for its integration into the Han empire exemplify a broader policy of converting military conquests into civilian-administered zones. This approach was also evident in the administration of the Ordos region during the same period. Therefore, an analysis of the costs associated with maintaining the Hexi region could provide valuable insights into the financial burdens faced by Emperor Wu's court in integrating the Ordos region. The financial implications of sustaining a continuous military presence in the Hexi region were substantial. Based upon excavated materials, Hu Hongqi's analysis of the Jiaqu 甲渠 fortress tower (*houguan* 候官) suggests that with 300 soldiers stationed per tower and an estimated 18 sections (*bu* 部) managing an average of five towers each, the total military personnel involved would approximate 27,000 soldiers across the four commendaries in the Hexi region.[112] This estimate contrasts with Éric Trombert's higher figure, which suggests a minimum of 352 men per tower, thereby raising the total to at least 31,000 soldiers for the region.[113] Further detailed scrutiny by Fan Xiangli, based on excavated materials, provides a more nuanced understanding. For instance, Zhangye commandery was manned by about 4,000 soldiers across 10 towers, while the

[112] Hu listed the 18 sections in the four commanderies: "敦煌郡的中部、 玉门关、 阳关、 宜禾部都尉;酒泉郡的 东部、 中部、 北部部都尉; 张掖郡的日勒、 居延、 肩水部都尉和张掖属国都尉、 番和、 居延、 张掖农都尉; 金城郡的西部、 广武部都尉和金城属国都尉; 武威郡的北部部都尉; 陇西郡的南部部都尉" (*see* Hu Hongqi 胡宏起, "Han dai bingli kao" 漢代兵力考 [An Analysis of the Army Size in the Han Dynasty], *Lishi yanjiu* no. 3 歷史研究 第三期 (1996): 35).

[113] Trombert, *Le Glaive et La Charrue*, 118.

Dunhuang commandery had approximately 1,600 soldiers across 12 towers.[114] Fan's comprehensive review indicates that around 10,000 soldiers were stationed in fortress towers across the Hexi region during the first century BCE. Adding the soldiers led by each Grand Administrator, the total military presence in Hexi likely reached around 50,000 troops.[115] Accepting Chang Chun-shu's estimation of 10,000 cash per infantryman per year as a baseline for military maintenance costs and extrapolating this figure to the approximate 50,000 troops stationed in the region, the annual cost for military operations in Hexi would be at least 500 million cash.[116] This considerable sum reflects the immense financial commitment required by the Han central government to sustain its military presence in this strategic frontier.

The expenditure associated with maintaining military presence in the Hexi region was substantial. However, the costs of assimilating the Hexi region were on par with, or perhaps even greater than, those recorded for the Ordos region because the distance between the former and the imperial core far exceeded that between the latter and the imperial core. Trombert indicates that transporting food and goods to remote new frontiers depleted the court's fiscal capacity under Emperor Wu's rule, which motivated his court to initiate the monetary reform in 118 BCE.[117] One can also reasonably conjecture that the financial predicament confronted by Emperor Wu's administration likely promoted the enactment of other economic policies to enhance imperial finance. Despite some reservations, Emperor Wu's successors retained such economic policies; the reason behind the policy continuity might be that the heavy financial

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[114] Fan, "Hanjian suo jian Hexi shubian junfei xiangguan wenti kao" 漢簡所見河西戍邊軍費相關問題考, 36.

[115] Fan, "Hanjian suo jian Hexi shubian junfei xiangguan wenti kao" 漢簡所見河西戍邊軍費相關問題考, 36-7.

[116] Chang, *Nation, State, and Imperialism in Early China, ca. 1600 B.C.-A.D. 8*, 167.

[117] Trombert, *Le Glaive et La Charrue*, 69.

burden imposed by the Han assimilation of the Hexi region and its expansion to the even more distant Western Regions compelled the Han empire to constantly resort to the fiscal policies benefiting the imperial finance. The next section of the chapter will be a more detailed discussion of the economic policies and institutions of fiscal management which Emperor Wu's court reshaped.

3. The Han Fiscal Regime Reshaped by Emperor Wu's Court

1) Economic Landscape prior to Emperor Wu's Reign

Prior to Emperor Wu's ascent to the throne in 141 BCE, the Han empire had already established a sophisticated and diverse economic framework that was integral to its administrative and fiscal policies. Ban Gu provided a detailed account of the prosperity during this period. As he recorded:

> 至武帝之初七十年間，國家亡事，非遇水旱，則民人給家足，都鄙廩庾盡滿，而府庫餘財。京師之錢累百鉅萬，貫朽而不可校。太倉之粟陳陳相因，充溢露積於外，腐敗不可食。衆庶街巷有馬，仟伯之間成羣，乘牸牝者擯而不得會聚。
> Up to the beginning years of the reign of the emperor Wu during a period of seventy years, the nation lived without [general] disturbance, and except when flood or drought came, the people as individuals were well supplied, and as families had a sufficiency. The government grain depots, roofed and unroofed, in cities as well as in boroughs were all completely filled, while the government treasury and storehouses, moreover, had surpluses of wealth of all kinds. In the capital cash had accumulated in layers of hundreds of millions, [the number of] which could not be checked because the strings [which held the coins together] were rotted. Grain in the central granary of the empire had been successively deposited with new layers upon old ones; it filled and overflowed [the granary], was exposed [to the elements], and piled up outside, [until] it was [so] stale or spoiled that it was unfit to be eaten. The great masses of the common people who lived in the streets and lanes had horses, and they [used to come out] in groups in the open at the crossroads and on the paths between the fields. Anyone who rode a young mare, however, was ejected, not being allowed to join in the gatherings.[118]

Ban Gu's description of the well-provisioned populace, the abundantly stocked imperial granaries and treasuries, and vast quantities of cash in the capital all contributed to a vivid image

[118] *HS* 24B, 1135-6; Swann, *Food & Money in Ancient China*, 173-5.

that the Han court's fiscal capacity was extremely robust. This scenario prompts the question: How could the Han court in Chang'an maintain such substantial fiscal capacity? The empire's wealth was gradually amassed through a complex system of taxation and profits from state-managed resources. Despite varying interpretations by scholars regarding the specific nature of these taxes and the bureaucratic structures responsible for their collection, there is a consensus that the revenue sources were both extensive and diversified. The state, bolstered by the emperor's private reserves, drew significant financial support from a variety of taxes. These included capitation taxes levied per individual, property taxes based on land ownership, interest taxes on commercial loans, business taxes on merchant activities, and taxes on natural products harvested from the empire's varied ecological zones.

Capitation tax consisted of poll tax on minors (*kouqian* 口錢), poll tax on adults (*suanfu* 算賦), and commutation tax (*gengfu* 更賦). Poll tax on minors referred to twenty cash per year paid by each child aged from three to fourteen from Emperor Wu to Emperor Yuan's reigns and aged from seven to fourteen since Emperor Yuan's reign.[119] Each adult aged between fifteen and fifteen fifty-six paid 120 cash of poll tax on adults since Emperor Gaozu initiated the tax in 203

[119] In describing Gong Yu's memorial to Emperor Yuan, Ban Gu states, "Gong Yu claims that people in the ancient did not have corvée service or poll tax. This started when Emperor Wu waged expansionary wars against barbarians in all directions. they made heavier from the common people. The children of commoners reach the age of three and begin to pay poll tax on minors. Thus, they are so impoverished that they resort to infanticide, which is grieving. It is appropriate that [the court] raises the starting age of poll tax on minors to seven when children lose their baby teeth and set the amount to 20 cash per year (and start raising the poll tax on adults only at age twenty)"(禹以為古民亡賦算口錢，起武帝征伐四夷，重賦於民，民產子三歲則出口錢，故民重困，至於生子輒殺，甚可悲痛。宜令兒七歲去齒乃出口錢，年二十乃算) (*HS* 72, 3075).

BCE;[120] merchants and slaves had to pay double the amount.[121] In addition to poll tax, all males aged between fifteen and fifty-six were subject to one month's work per year to complete government projects and fulfill military duty.[122] The commutation tax was levied as an alternative to military service. This tax was paid by individuals who were elderly, disabled, or ill during the years they were eligible for the draft. Additionally, those who were physically capable could also opt out of service by paying this tax, thereby sending substitutes in their place. Exemptions from this tax were granted only to those who qualified under specific legal provisions or received a special exemption by imperial decree.[123]

Pivotal in structuring the Han fiscal landscape, the property tax included several distinct levies. Land tax (*tianzu* 田租) was computed by applying a rate of one-thirteenth to the product of the land area and its national average yield; this rate remained steadfast from 156 BCE until the upheaval during Wang Mang's rule in 9 CE.[124] Fodder tax (*chugao* 芻稾) mandated peasants to pay three *shi* of hay and two *shi* of straw per *qing* of land.[125] According to the law, each *shi* of hay was worth fifteen cash while each *shi* of straw was worth five cash;[126] thus, farming each

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[120] Ban Gu noted: "In the eighth month, [the court] initiates poll tax" (八月，初為算賦) (*HS* 1, 46).

[121] Mark E. Lewis, "Early Imperial China, from the Qin and Han through Tang," In *Fiscal Regimes and the Political Economy of Premodern States*, edited by Andrew Monson and Walter Scheidel (Cambridge: Cambridge University Press, 2015), 286. DOI: https://doi.org/10.1017/CBO9781316105436.

[122] Lewis, 286.

[123] Swann, *Food & Money in Ancient China*, 368.

[124] Lewis, "Early Imperial China, from the Qin and Han through Tang," 286.

[125] Ma Tao and Li Wei, "The Monetary and Fiscal System of the Western and Eastern Han Dynasties," in *The Political Economy of the Han Dynasty and Its Legacy*, edited by Cheng Lin, Terry Peach, Wang Fang (London: Routledge, 2019), 77. DOI: https://doi.org/10.4324/9781315162911.

[126] "Statutes on Agriculture" stipulates that "one *shí* (approx. 20 l) of hay matches fifteen cash, and one *shí* of straw matches five cash" (芻一石當十五錢，稾一石當五錢) (Anthony J., Barbieri-Low and Robin D. S. Yates, *Law, State, and Society in Early Imperial China: A Study with Critical Edition and Translation of the Legal Texts from Zhangjiashan Tomb No. 247*

qing of land meant a minimum of 40 cash fodder tax annually. However, an annual 40-cash fodder tax per *qing* of land was minimal; in reality, the tax would mount when the fair-market price of hay and straw increased.[127] Instead of calculating based on the amount of land one farmed, the fodder tax could also be assessed on each household.[128]

The Han empire also wielded its power over commerce through business taxes. Two primary forms of business taxes were instrumental in this process: the market tax (*shizu* 市租) and tolls (*guanshui* 關稅). The market tax was levied on merchants and artisans who had registered to operate within the official marketplaces, requiring them to pay an annual fee to maintain their trading positions. This fee not only secured their place in the market but also contributed significantly to the central treasury.[129] Concurrently, tolls were imposed on merchants at strategic locations such as borders and ferry ports, where the state was present. The two taxes played an important role in regulating commerce and reinforcing the state's revenue streams.

Moreover, the Han emperors received revenue from other sources, such as natural environment. Mountains, forests, rivers, seas, lakes, and marshes were ostensibly regarded as the sovereign domain of the emperor; hence, all products derived from these natural landscapes were theoretically the property of the emperor.[130] The revenue from those products, titled the Tax on Natural Products (*shan hai chi ze zhi shui* 山海池澤之稅), thus belonged to the emperor; yet, the tax de factor merely included the profits from fish and timber in the Park of the Supreme Forest

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(Leiden: Brill, 2015), 696-7. http://booksandjournals.brillonline.com/content/books/9789004300538.)

[127] Barbieri-Low and Yates, *Law, State, and Society in Early Imperial China*, 705.

[128] Barbieri-Low and Yates, 705.

[129] Barbieri-Low, *Artisans in Early Imperial China*, 127.

[130] Hans Bielenstein, *The Bureaucracy of Han Times, 4–89* (Cambridge: Cambridge University Press, 1980), 43.

(*shanglinyuan* 上林苑).[131] Also, the emperor controlled the imperial workshops, which produced an array of goods, including weapons, utensils, textiles, and clothing.[132] Despite their extensive production capabilities, the profitability of these enterprises remains a subject of scholarly debate. Sadao, citing the memorial of Gong Yu 貢禹, asserts that these imperial manufacturers were more frequently sources of expenditure rather than revenue.[133] Lastly, in the eighth month of each year, regional lords were obligated to present tributes in the form of gold (*zhuojin* 酌金) to the emperor—a practice overseen by the Privy Treasury.[134] The quantity of gold tendered was calculated based on the population of each noble domain and regional kingdom, generally amounting to four *liang* (approximately 60 grams) of gold per thousand inhabitants.[135]

2) Emperor Wu's Fiscal Reforms

The robust fiscal framework, built upon a variety of taxes and profits, provided a solid foundation for the Han empire's economic stability and expansion, setting the stage for the fiscal innovations and challenges that would characterize Emperor Wu's transformative reign. Despite having numerous sources of revenue, the court in Chang'an, which bore the costs of prolonged warfare and constant uprisings, faced a heavy financial burden. To alleviate the strain on state finances, Emperor Wu's administration initiated a strategic overhaul of the fiscal system, introducing two new categories of taxes aimed at exploiting previously underutilized resources. Additionally, the Han government under his rule established state monopolies over several key industries. These robust economic measures were designed to stabilize the empire's finances,

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[131] Nishijima Sadao, "The Economic and Social History of Former Han," in *The Cambridge History of China*, edited by Denis Twitchett and Michael Loewe (Cambridge: Cambridge University Press, 1986), 591. doi:10.1017/CHOL9780521243278.012.

[132] Sadao, "The Economic and Social History of Former Han," 581.

[133] Sadao, "The Economic and Social History of Former Han," 593.

[134] Sadao, 582.

[135] Sadao, 583.

which had been severely impacted by the resource-intensive military campaigns required to conquer and assimilate distant frontiers.

In 117 BCE, the court introduced the property tax (*suanminqian* 算緡錢) .[136] This tax required citizens to report their cash reserves and physical assets, imposing a tax rate of two percent on commoners not engaged in commerce or artisanry. Merchants and artisans were subject to higher rates, approximately ten percent and five percent respectively.[137] Earlier, in 129 BCE, the carriage and boat tax (*suan chechuan* 算車船) was introduced as a direct measure to alleviate monetary shortages.[138] This tax varied depending on the status of the individual and the size of the boats or carriages owned. The carriage owned by the common people were liable to 120 cash while those belonging to merchants were subject to 240 cash, and anyone paid 120 cash for each boat more than five *zhang* in length (11.5 meters). [139] However, some suggest a higher tax rate; namely, 380 cash was exacted from merchants for every carriage they owned each year while a boat more than five *zhang* in length corresponded to 190-cash tax annually.[140]

In addition to these taxes, Emperor Wu's administration also ventured into state monopolies as a means to control essential industries and increase government revenue. During the reign of Emperor Wu, advisors Kong Jin 孔僅 and Dongguo Xianyang 東郭咸陽 who then served as Assistant Minister of Agriculture (*danong cheng* 大農丞) initiated a government

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[136] Ban Gu noted: "In the winter of the fourth year,…, [the court] initiates wealth tax" (四年冬……初算緡錢) (*HS* 6, 178).

[137] Lewis, "Early Imperial China, from the Qin and Han through Tang," 286-7.

[138] Ban Gu noted: "In the sixth year, [the court] initiates tax on merchants' vehicles" (六年冬，初算商車) (*HS* 6, 165).

[139] Sadao, "The Economic and Social History of Former Han," 599.

[140] Anthony J. Barbieri-Low, *Artisans in Early Imperial China* (Seattle: University of Washington Press, 2007), 128.

monopoly over the salt and iron industries, a move that reshaped the economy.[141] The monopolies were formally established in 117 BCE and maintained throughout Western Han dynasty, except for the period 44-41 BCE under Emperor Yuan's rule.[142] The court oversaw the production and distribution of iron,[143] but the Han administration did not completely ban private enterprises from salt production. Though the court and civilian producers both continued producing salt after the court introduced the monopoly, the distribution and sale of salt was the prerogative of the central government.[144] In a further consolidation of control, the Han court abolished private brewing in 98 BCE, securing a monopoly over the production and sale of fermented liquor.[145] Sang Hongyang 桑弘羊, then serving as the Grandee Secretary 御史大夫, relinquished the state monopoly of fermented liquor at the Convention of Salt and Iron (*yantie huiyi* 鹽鐵會議) in 81 BCE.[146]

Additionally, the monopoly extended to the Equitable Delivery system (*junshu* 均輸) and the "Balanced standard" (*pingzhun* 平準) in 110 BCE. The former was introduced to centralize the transportation and sale of goods from distant localities that had been previously managed by private merchants.[147] The central court established the latter program to stabilize the prices of goods at certain level; it functioned as buying commodities country-wide on behalf of the central government when prices had fallen too low while selling those products when their prices had risen too high.[148] Lastly, before Emperor Wu's reign, the minting of coins was not exclusively

[141] Ma and Li, "The Monetary and Fiscal System," 79.
[142] Bielenstein, *The Bureaucracy of Han Times*, 44.
[143] Sadao, "The Economic and Social History of Former Han," 602.
[144] Sadao, 603.
[145] Sadao, 604.
[146] *HS* 24B, 1176; Bielenstein, *The Bureaucracy of Han Times*, 44.
[147] Sadao, "The Economic and Social History of Former Han," 604.
[148] Bielenstein, *The Bureaucracy of Han Times*, 44.

controlled by the state; both private individuals and regional lords could produce coins. Initially, in 175 BCE, private coining was legally allowed, but by early 144 BCE, it became a capital offense to mint coins privately.[149]

The fiscal strategies implemented during Emperor Wu's reign marked a significant evolution in the economic management of the Han dynasty, particularly in response to the challenges posed by the empire's expansive geography. Under his rule, the introduction of new taxes and the establishment of state monopolies over critical industries such as salt and iron were pivotal in stabilizing and significantly increasing the empire's revenue streams. Ban Gu remarked:

> 而初郡又時時小反，殺吏，漢發南方吏卒往誅之，間歲萬餘人，費皆仰大農。大農以均輸調鹽鐵助賦，故能澹之。
> Meanwhile, in the new provinces there were from time-to-time minor uprisings in which officers *li* were murdered. The Han (that is, the central government) would send officers *li* with [conscript] soldiers [*zu*] from the south [into the regions] to punish them. After an interval of a year of peace, by the third year, 111-109 B.C.] expenses for more than ten thousand men had all to be borne by the ministry of agriculture (which also was in charge of commerce, and government finance). By means of the [Junshu] (offices of control to equalize prices by regulating transportation of supplies throughout the empire), and of levies [through the monopolies of] salt and iron, the ministry supplemented the taxes-by-capitation *fu* and, therefore, it was able to meet expenses.[150]

Ban Gu explicitly states that the revenues gained from Emperor Wu's fiscal policies directly supported military expenses during campaigns to suppress insurrections in the newly annexed southern territories. Without these reforms, the Han court might have been forced to relinquish control of this region due to insufficient financial resources. A similar inference can be drawn regarding the empire's northwestern frontier, the Hexi region. The challenges posed by the distance between this newly acquired territory and the imperial core could only be addressed by

[149] Bielenstein, 47.
[150] *HS* 24B, 1174; Swann, *Food & Money in Ancient China*, 312-3.

investing additional resources, which the court obtained through its newly established revenue-generating measures.

Historians have conducted statistical analyses to demonstrate that these fiscal strategies were crucial for the financial sustainability of the Han empire. According to scholars Yamada Katsuyoshi and Richard von Glahn, the financial outcomes of these policies were strikingly effective. The salt and iron monopolies alone generated a staggering 3,800 million cash in annual profits, while mint seigniorage—the profit derived from the production and distribution of currency—added another 154 million cash each year.[151] These figures dramatically exceeded the combined revenues from more traditional sources, including the land tax, which contributed 1,000 million cash, the fodder tax at 80 million cash, and the poll tax, which totaled 2,071 million cash annually.[152]

As this section concludes, it is evident that Emperor Wu's economic policies succeeded in their primary goal of stabilizing the empire's finances. The following sections will explore the institutional frameworks that preceded these reforms, examining the fiscal management practices in place before Emperor Wu's ascension, and will then transition to a discussion of the new institutions and mechanisms introduced by his administration to effectively implement and manage these innovative economic strategies.

3) Institutions of Fiscal Management before Emperor Wu's Reign

A salient characteristic of the Western Han fiscal regime was the court's establishment of distinct institutions to manage various revenue streams. The fiscal system at the central court was

[151] Richard von Glahn, "State and Economy: Production, Extraction, and Distribution," in The *Cambridge Economic History of China Volume 1: To 1800*, edited by Debin Ma and Richard von Glahn (Cambridge: Cambridge University Press, 2022), 117.

[152] von Glahn, "State and Economy: Production, Extraction, and Distribution," 117.

characterized by a division of labor between two principal officials: the Grand Minister of Agriculture (*dasinong* 大司農) and the Privy Treasurer (*shaofu* 少府); these officials shared joint responsibility for revenue management.[153] Typically, the Ministry of Agriculture handled public finances, while the Privy Treasury managed the personal finances of the emperor and the imperial family.[154] The former, serving as the head of the national treasury, primarily oversaw tax levies and public expenditures, such as maintaining the national armed forces and funding official salaries. In contrast, the latter managed the assets and private expenditures of the imperial family, occasionally contributing financially to the state treasury during fiscal emergencies.[155]

At the inception of the Han dynasty, the role of Grand Minister of Agriculture was initially titled Clerk of the Capital for Grain (*zhisu neishi* 治粟內史). This title was later altered to Grand Prefect of Agriculture (*danong ling* 大農令) in 144 BCE and subsequently to Grand Minister of Agriculture in 104 BCE.[156] However, the title of the Privy Treasurer remained unchanged throughout the Han dynasty.[157]

The organizational structure of the Grand Ministry of Agriculture underwent significant transformation during the Western Han dynasty, although the exact timing of this change remains uncertain. In 144 BCE, the Grand Ministry of Agriculture consisted merely of two sections, the Inner Palace Office of the Left (*zuoneiguan* 左內官) and the Inner Palace Office of the Right (*youneiguan* 右內官).[158] This arrangement was soon replaced by a more sophisticated

[153] Ma and Li, "The Monetary and Fiscal System," 81.
[154] Lewis, "Early Imperial China, from the Qin and Han through Tang," 285.
[155] Sadao, "The Economic and Social History of Former Han," 591.
[156] *HS* 19A, 731; Bielenstein, *The Bureaucracy of Han Times*, 43.
[157] Bielenstein, 47.
[158] Bielenstein, 43.

organization with further division of labor.[159] According to Ban Gu, the Grand Minister of Agriculture and two Assistant Ministers (*cheng* 丞) supervised five principal sectors in the capital and sixty-five subordinate offices across commanderies and noble domains.[160] The Prefect of the Great Granary (*taicang ling* 太倉令) managed the place where tax in the form of grains from commanderies was stored in the capital, while the Prefect of Imperial Treasury (*dunei ling* 都內令) was responsible for storing coins, silk, and other valuable goods in the Imperial Treasury.[161] The Prefect of the Sacred Field (*jitian ling* 籍田令) oversaw lands where the emperor performed the ceremonial plowing each spring.[162] It is certain that two agencies, the Prefect of Equitable Delivery (*junshu ling* 均輸令) and the Prefect of "Balanced standard" (*pingzhun ling* 平準令), were established under the jurisdiction of the Grand Minister of Agriculture in 110 BCE by Emperor Wu's court.[163]

Although the Privy Treasury was primarily tasked with managing the emperor's household expenses, its scope and the number of its staff, including directorates and assistants, significantly surpassed those of the Grand Ministry of Agriculture. The Privy Treasurer, supported by six assistants, held jurisdiction over more than thirty branches.[164] The Treasury's responsibilities encompassed managing the personnel working within the Palace, including the emperor's intimate advisors.[165] For instance, the Supervisor of the Palace Attendants (*shangshu puye* 尚書僕射), a supernumerary title bestowed upon emperors' close courtiers, reported to the

[159] Bielenstein, 43.
[160] *HS* 19A, 731.
[161] Bielenstein, *The Bureaucracy of Han Times*, 43.
[162] Bielenstein, 43.
[163] Bielenstein, 43-4.
[164] *HS* 19A, 731.
[165] Bielenstein, *The Bureaucracy of Han Times*, 47.

Privy Treasurer.[166] The Treasurer was also responsible to ensure the emperor's well-being and that of his household, to oversee provisions like food, drink, and clothing, as well as to handle the administration of the harem and maintenance of the imperial apartments and grounds.[167] For instance, the primary duty of the Prefect Grand Physician (*taiyi ling* 太醫令) was to take care of the health of the emperor and his household, while the Prefect of the Eastern Weaving House (*dongzhi ling* 東織令) and Prefect of the Western Weaving House (*xizhi ling* 西織令) were tasked with producing textiles for the imperial family.[168] According to Bielenstein, the rationale behind the Privy Treasurer's management of the emperor's private finances was to fund these various responsibilities.[169]

4) Emperor Wu's Restructuring Institutions of Fiscal Management

During Emperor Wu's reign, several new offices were established to enhance the management of public finances. Notably, the role of Chief Commandant of Waters and Parks (*shuiheng duwei* 水衡都尉) was created in 115 BCE,[170] taking on some responsibilities previously shared by the Grand Minister of Agriculture and the Privy Treasurer. Although initially intended to manage state monopolies on salt and iron, this office was later tasked with overseeing the Park of the Supreme Forest.[171] As a result, the Chief Commandant of Waters and Parks assumed responsibility from the Privy Treasury for supervising the agencies within the park, for instance, the Prefect of the Park of the Supreme Forest (*shanglin ling* 上林令) with his eight assistants and twelve commandants (*wei* 尉), the Chief Director of Waters (*dushui zhang* 都水長) with his

[166] Bielenstein, 50.
[167] Bielenstein, 47.
[168] Bielenstein, 51.
[169] Bielenstein, 47.
[170] Bielenstein, 82.
[171] *HS* 24B, 1170.

three assistants, and the Chief Director of Waters of the Palace of Sweet Springs (*ganquan dushui zhang* 甘泉都水長) with his four assistants.[172] Consequently, the new official replaced the Privy Treasure to collect the Tax on Natural Products, which in practice was the profits from fish and timber.[173] Aided by five assistants, the Chief Commandant of Waters and Parks carried out its primary duty to oversee the national mint in the Park of the Supreme Forest, which was formerly managed by the Grand Minister of Agriculture, since its inception in 115 BCE.[174] In order to carry out the newly monopolized casting of coins, the Chief Commandant of Waters and Parks led three branches: the Prefect of the Office for Assorting Copper (*biantong ling* 辯銅令), the Prefect of the Office of Coinage (*zhongguan ling* 鐘官令), the Prefect of Price Adjustment and Transportation (*junshu ling* 均輸令).[175]

Moreover, deploying vast numbers of soldiers to distant territories required the court to provide them with food, leading Emperor Wu's court to place considerable emphasis on grain production. This concern was reflected in the creation of specialized administrative posts focused on securing grain supplies. The central court established the position of Chief Commandant Who Searches for Grain (*sousu duwei* 搜粟都尉), who had help of an assistant (*cheng* 丞) in his office.[176] This official reported directly to the Grand Minister of Agriculture. A similar position, as noted by the historian Ban Gu, was the Chief Commandant for Grain (*zhisu duwei* 治粟都尉).[177] According to Bielenstein, the specific duties of these officials are not detailed in transmitted sources, but their titles suggest that their responsibility was to secure grain for

[172] Bielenstein, *The Bureaucracy of Han Times*, 47.
[173] Sadao, "The Economic and Social History of Former Han," 591.
[174] von Glahn, "State and Economy," 115.
[175] Bielenstein, *The Bureaucracy of Han Times*, 83.
[176] Bielenstein, 44.
[177] Bielenstein, 169.

military use.[178] These positions clearly demonstrate that the central court prioritized grain as a key element of fiscal management.

A closer examination of the titles of the newly established positions—Chief Commandant of Waters and Parks, Chief Commandant Who Searches for Grain, and Chief Commandant for Grain—reveals the significance of the military rank of "commandant" (*duwei* 都尉) associated with these roles, underscoring the unusual nature of these offices. It is important to note that the positions of Chief Commandant Who Searches for Grain and Chief Commandant for Grain were not permanent. From the transmitted texts, we only know that Sang Hongyang and Shangguan Jie 上官桀 served in these roles.[179] While Sang Hongyang was a civil servant, Shangguan Jie actively participated in military maneuvers in the Western Regions.[180] Though historians remain uncertain about the identities of all those who held the position of Chief Commandant of Waters and Parks during Emperor Wu's reign, namely Zhang Ba 張罷, Bao 豹, Yan Feng 閻奉, De Qian 德遷, Shou 守, and Jiang Chong 江充,[181] it is clear from transmitted historiographical texts that Zhao Chongguo 趙充國 and Han Zeng 韓增, who held this office under Emperor Xuan, were generals with direct experience in warfare.[182] This further reinforces the notion that the civil bureaucracy, particularly in its management of fiscal matters, increasingly came under military influence. The placement of military-linked offices within the Grand Ministry of Agriculture and

[178] Bielenstein, 44.

[179] Ban Gu recorded: Shangguan Jie, Chief Commandant Who Searches for Grain, was appointed to the Privy Treasurer and retired because of his old age (搜粟都尉上官桀為少府，年老免) (*HS* 19, 784).

[180] Ban Gu documented: Ershi General [Li Guangli] commanded Shangguan Jie, Chief Commandant Who Searches for Grain to defeat Yucheng, and Yucheng surrenderred (貳師令搜粟都尉上官桀往攻破郁成，郁成降) (*HS* 70, 2702).

[181] *HS* 19, 777, 779, 781, 782, and 787.

[182] *HS* 19, 798.

the creation of military-affiliated posts that assumed duties once overseen by the Grand Minister of Agriculture and the Privy Treasurer illustrate how fiscal reforms under Emperor Wu were fundamentally war-oriented. These changes in fiscal management were primarily aimed at ensuring the proper provisioning of the army, highlighting the direct link between Emperor Wu's fiscal policies and the financing of expansionary wars.

Additionally, new branches were introduced within existing agencies at the central court to enhance their functional scope. According to Ban Gu, the offices of agriculture (*nongguan* 農官) were created under the auspices of several key officials: the Chief Commandant of Waters and Parks, the Privy Treasurer, the Grand Minister of Agriculture, and the Grand Coachmen (*taipu* 太僕).[183] These agricultural offices were specifically tasked with managing lands and slaves that were confiscated under the Ordinance of Reporting on Cash-strings (*gaomin ling* 告緡令).[184]

Lastly, one of the most important new economic policies introduced by Emperor Wu's court was the monopoly of salt, iron, and fermented liquor. The central court simultaneously set up new agencies to manage those monopolies. The administration of profits collected from these industries was initially the responsibility of the Privy Treasury but later transitioned to the Grand Ministry of Agriculture. The Ministry appointed forty-eight Offices of Iron (*tieguan* 鐵官) to forty counties to manage the iron monopoly.[185] Similarly, the Grand Ministry of Agriculture managed the salt monopoly through thirty-five Offices of Salt (*yanguan* 鹽官) to twenty-seven counties.[186] The Grand Minister of Agriculture appointed one Chief of the Office of Iron (*tieguan*

[183] *HS* 24B, 1171.
[184] *HS* 24B, 1171.
[185] Sadao, "The Economic and Social History of Former Han," 602.
[186] Sadao, 602.

zhang 鐵官長) and one assistant to supervise three Offices of Iron while each Chief of the Office of Salt (*yanguan zhang* 鹽官長) and one assistant exclusively led one Office of Salt.[187] It is noteworthy that though the Chiefs of the Office of Iron and the Chiefs of the Office of Salt performed their duty in the commanderies and regional kingdoms, they were independent from the local administration but under the jurisdiction of the Grand Ministry of Agriculture, i.e. the central court.

4. Concluding Remarks

This chapter has meticulously explored the intricate economic ramifications associated with the Han empire's military expansions, particularly under Emperor Wu's rule, with a focus on the strategic and fiscal complexities of integrating regions such as Hexi. The analysis has demonstrated that the push into these distant frontiers, while crucial for the territorial and security aspirations of the empire, imposed a severe financial burden on the central treasury. The most significant of these costs, as highlighted, was the sustained military defense required to maintain control over newly conquered territories, necessitating a continuous and costly military presence. Furthermore, the integration of these frontiers into the economic and administrative frameworks of the empire involved substantial fiscal outlays. In response to these challenges, Emperor Wu's administration undertook comprehensive fiscal reforms aimed at stabilizing the empire's finances. The establishment of new offices to manage the revenue from new taxes and state monopolies was a critical step towards achieving this stabilization.

Looking ahead, the next chapter will delve into the role of agro-military settlements. These settlements were instrumental in bridging the cultural and economic distances between the

[187] Bielenstein, *The Bureaucracy of Han Times*, 83.

imperial core and the distant frontiers. By examining how these settlements functioned as both agricultural hubs and military bastions, the forthcoming analysis will shed light on their dual role in consolidating imperial control and integrating the diverse populations of newly annexed regions into the Han realm.

Chapter 3: The Agro-Military Settlements and its Role in Reducing Distance

In the intricate tapestry of statecraft and survival, the axiom, "To a king, the people are heaven; to the people, food is heaven" (王者以民為天，民以食為天), resonates with profound significance.[188] This piece of wisdom, articulated by Emperor Gaozu's wartime adviser Li Yi-ji 酈食其, underscores the importance of food to the governance and sustenance of an empire. Though often overlooked, food not only served as a symbol of opulence or a tangible manifestation of rank in lavish state banquets, but also played a pivotal role in the survival and prosperity of ancient empires. The availability and distribution of food were not merely peripheral concerns for emperors and their armies; rather, they served as the very lifeblood of successful imperialist expansion and enduring dominion. Qin and Han emperors understood that securing food sources and establishing efficient logistical systems were vital prerequisites for the extension of imperial boundaries and the maintenance of political stability in the frontiers of the empire.[189]

The establishment of agro-military settlements exemplifies how the Han empire attempted to address the critical needs of food security and logistical support in their frontier regions. This policy allowed soldiers stationed in these distant outposts to sustain themselves, thereby easing the logistical challenges posed by long-distance supply lines and enhancing the

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[188] *SJ* 97, 2694; Sima Qian, "*Shiji* 97: The Biographies of Li I-Chi and Lu Chia," in *Records of the Grand Historian Vol. I: Early Years of the Han Dynasty, 209 to 141 B.C.*, translated by Burton Watson (New York: Columbia University Press, 1971), 271.

[189] For symbolic and practical roles of food distribution in the Qin and Han China and ancient Rome, *see* Moonsil Lee Kim, "Food Distribution for the People: Welfare, Food, and Feasts in Qin/Han China and in Rome," in *Rulers and Ruled in Ancient Greece, Rome, and China*, edited by Hans Beck and Griet Vankeerberghen (Cambridge: Cambridge University Press, 2021), 235-6; For food supply and distribution, *see* Michael Nylan, "Supplying the Capital with Water and Food," in *Chang'an 26 BCE : An Augustan Age in China*, edited by Michael Nylan and Griet Vankeerberghen (Seattle: University of Washington Press, 2015), 109. DOI: http://site.ebrary.com/id/11056904.

sustainability of these remote garrisons. What were the courtiers' rhetoric arguments about the agro-military settlements? How did these agro-military settlements help reduce the economic and cultural constraints imposed by distance? This chapter seeks to understand the origins and rationale behind the establishment of these agro-military settlements. Drawing from the political rhetoric found in the memorials of ministers such as Jia Yi to Emperor Wen, Sang Hongyang to Emperor Wu, and Zhao Chongguo to Emperor Xuan, I analyse how these agro-military settlements were established in order to serve both economic and cultural objectives. Economically, the agro-military settlements were aimed at reducing the logistical costs associated with transporting grain from the imperial heartland to the frontier—a challenge exacerbated by the physical distances involved. Culturally, the policy sought to transform the Hexi region into an environment more akin to that of the imperial core, thereby encouraging the migration of civilian populations and reducing the cultural distance between the center and its peripheries. It is noteworthy that the agro-military settlements in the Hexi region were an extension of earlier ones in other border regions. As this chapter will demonstrate, the agro-military settlements were not merely a means of survival but a sophisticated strategy aimed at integrating the frontier more closely with the centre of the Han empire, effectively shrinking both the physical and cultural gaps that separated the Hexi from Chang'an.

1. The Genesis of Agro-Military Settlements

Throughout the Qin and Han dynasties, some emperors were keen on mobilizing their subjects and sending them to the distant border area to fight. For instance, the First Emperor of Qin 秦始皇 (re. 259 – 210 BCE) dispatched 300,000 soldiers to strike at the Hu 胡 people to the north of his empire in 215 BCE in response to hearsay that the collapse of the Qin empire would be

brought about by the Hu people, submitted by his courtier, Master Lu 盧生.[190] The Han founder, Emperor Gaozu, angered by Han Wang Xin's 韓王信 betrayal and submission to the Xiongnu, sought to eliminate the northern threat by mobilizing a campaign in Jinyang 晉陽 and Loufan 樓煩 but failed in the battle of Pingcheng 平城 in 200 BCE.[191] Under the reign of Empress Lü, the Han court transferred the cavalries in Hedong 河東郡 and Shangdang 上黨郡 commanderies to be stationed in Beidi commandery 北地郡.[192]

Despite the central court's deep concerns regarding the stability of the northern frontier, the deployment of troops during the Qin and early Western Han dynasties often proved ineffective. In response to the ongoing conflicts with non-Chinese groups and the routine rotation of soldiers between the frontier and the heartland, Chao Cuo 晁錯, a courtier of Emperor Wen of Western Han 漢文帝 (re. 180-157 BCE), proposed the strategy of "enticing civilians to move to the remote region" (*mumin xi saixia* 募民徙塞下).[193] This strategy eventually evolved into one "enticing civilians to strengthen the defense at the borders" (*muminshibian* 募民實邊), laying the groundwork for the later Han policy of establishing agro-military settlements. He tactically attributed the rebellion against the Qin empire by Chen Sheng 陈胜 to the Qin's frontier policy.[194] Chao Cuo's critique of the Qin dynasty's frontier policy was stark. He argued that the

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[190] *SJ* 6, 252. Sima Qian attributed the ration of the campaign against the Hu people to Master Lu's prophecy that "the one who caused the collapse of the Qin was Hu" (亡秦者胡也). It is hardly possible to believe that the First Emperor of Qin made a decision to launch a military campaign because of a hearsay proposed by one of his courtiers, but it is reasonable to conclude that the Qin court saw the non-Chinese groups as potential threat to the empire.

[191] *SJ* 6, 252.

[192] *HS* 1, 99.

[193] *HS* 49, 2286-7.

[194] Chao Cuo recounted the story of Chen Sheng, as he submitted "Chen Sheng [sent conscripts] to guard the border, and when he reached Daze, he initiated the first uprising among

Qin's approach not only caused grievous harm to soldiers, with no compensatory benefits, but also possessed no redeeming value after death in battle, clearly illustrating the calamitous fate awaiting those serving at the frontiers.[195] In his advocacy to Emperor Wen, Chao Cuo drew on historical precedents, as noted by Éric Trombert, asserting the validity of his proposals by referencing ancient practices of populating distant and unoccupied lands. However, this appeal to historical precedent had limited immediate impact.[196]

Furthermore, Chao identified significant flaws in the Han's existing frontier policies:

> 然令远方之卒，守塞一岁而更，不知胡人之能。不如选常居者，家室田作，且以各之。
> Nevertheless, armies from distant places are sent to guard the border for one year after which they are to be replaced [by units]. The soldiers therefore are not able to be acquainted with the capabilities of the Hsiung-nu (Hu). It is better to select permanent settlers who would reside and cultivate there to defend the border.[197]

Chao highlighted the short service duration of troops which prevented them from gaining essential knowledge about their adversaries, the Xiongnu. Hence, he suggested a more effective approach would be to settle permanent residents who could farm and fortify the borders. According to Trombert, Chao Cuo's vision was seen as overly ambitious for his time. It was not

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the rebels, which was followed by the people like flowing water. This was because the Qin enforced their commands through intimidation and coercion, leading to their own decay" (陳勝行戍，至於大澤，為天下先倡，天下從之如流水者，秦以威劫而行之之敝也) (*HS* 49, 2284).

[195] In his memorial, Chao Cuo stated, "The Qin's policy regarding the soldiers stationed in the frontiers was detrimental to soldiers without any good. Once they died in the battlefield, they could not be exempt from paying poll tax of one person. Everyone understood that being stationed to the frontiers entailed an imminent calamity for themselves" (今秦之發卒也，有萬死之害，而亡銖兩之報，死事之後不得一算之復，天下明知禍烈及己也) (*HS* 49, 2284).

[196] Trombert, *Le Glaive et La Charrue*, 74.

[197] *HS* 49, 2286; translation of the passage is an excerpt of "Migration to Defend Frontier" by Cho-yun Hsu. Cho-yun Hsu, "Migration to Defend Frontier," in *Han Agriculture: The Formation of Early Chinese Agrarian Economy (206 B.C.–A.D. 220)*, edited by Jack L. Dull (Seattle and London: University of Washington Press, 1980), 172.

until the Han imperial expansion into the vast and remote Hexi territory and further into the Western Regions that the necessity for innovative solutions to manage extensive needs was recognized.[198] Chao proposed concentrating these agricultural outposts on recruiting criminals and civilians rather than solely on military personnel, which other Han courtiers would later propose to carry out the agro-military strategy.[199] The practical realization of Chao Cuo's proposals continues to be a subject of scholarly debate. Éric Trombert posits that Chao's ambitious plans remained largely theoretical, never fully materializing into actionable policy.[200] Conversely, Liu Guanghua has noted that while the direct application of Chao's strategies may be ambiguous, there is evidence suggesting that his influence was felt in the conscription of civilians and criminals for the construction of military infrastructure, such as beacon towers, which were crucial for defense.[201] Their construction, funded by the state, would, according to Liu, reflects the partial adoption of Chao's military strategies.

During the reign of Emperor Wu, the Western Han empire initiated strategic military settlements along the northern frontier.[202] While the precise role of these soldiers in agricultural

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[198] Trombert, *Le Glaive et La Charrue*, 74.

[199] Chao's memorial insinuated an ordered list of those who should be sent to the frontiers. He stated, "Dwellings should be completed, and implements be provided. Then convicts and those who take the penalty of labor work should be recruited to settle down there. If the number is not sufficient, then recruit slaves and female slaves [who are given by their owners] for payments as fines or as the price for purchasing ranks. If the number still is not sufficient, then recruit ordinary people who are willing to go" (先為室屋，具田器，乃募罪人及免徒復作令居之；不足，募以丁奴婢贖罪及輸奴婢欲以拜爵者；不足，乃募民之欲往者) (Hsu, "Migration to Defend Frontier," 172; *HS* 49, 2107).

[200] Trombert does not explicitlty point out that Chao's vision was never implemented; yet, his statement, "[assurément], les conceptions de Chao Cuo s'inscrivaient dans une optique trop ambitieuse pour l'époque," implies so (Trombert, *Le Glaive et La Charrue*, 74).

[201] Liu Guanghua 劉光華, *Handai xibei tuntian yanjiu* 漢代西北屯田研究 [A Research on Agro-military settlements in the Northwest in the Han Dynasty] (Lanzhou: Lanzhou daxue chubanshe, 1988), 20-2.

[202] The court commanded two generals to station in Yunzhong and Yanmen respectively in the first year of Yuanguang 元光 (134 BCE). Ban Gu recorded, "Li Guang, Commandant of

production remains unclear, a significant proposal by Sang Hongyang 桑弘羊, the Grand Minister of Agriculture under Emperor Wu, encapsulated a strategic integration of agricultural and military logistics within the empire. Sang advocated for the expansion of military personnel to establish agro-military settlements east of the Luntai region 輪臺, west to the Hexi region. He detailed his proposal as follows:

> 臣愚以為可遣屯田卒詣故輪臺以東，置校尉三人分護，各舉圖地形，通利溝渠，務使以時益種五穀。[203]
> I humbly suggest that farming soldiers be sent to the east of the old Luntai region, where three colonels should be placed for protection purpose. Each should map the terrain and manage the irrigation channels, striving to timely increase the cultivation of the five grains.

This initiative was designed not only to boost agricultural productivity through organized military efforts but also to extend the Han armies' presence further into the Western Regions, expanding beyond its existing western frontier. Although Sang's proposal was not adopted during Emperor Wu's tenure, Sang outlined a clear two-phase integration process that was later implemented during Emperor Zhao's reign.[204] Initially, it involved deploying soldier-farmers to develop essential infrastructure for land productivity and to establish initial grain reserves from the first harvests. Subsequently, these soldiers were to be replaced by civilian farmers from China, selected from emigration candidates, who would bring their families to continue the agricultural development.[205] Chang Chun-shu also highlights the considerable distance between

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the Guards, was appointed as General of Valiant Cavalry, stationed in Yunzhong, while Cheng Bushi, Commandant of the Capital, was appointed as General of Chariots and Cavalry, stationed in Yanmen. In the sixth month, [both general] were dismissed"(衛尉李廣為驍騎將軍屯雲中，中尉程不識為車騎將軍屯雁門，六月罷) (*HS* 6, 160).

[203] *HS* 96, 3912.

[204] Trombert, *Le Glaive et La Charrue*, 81; Chun-shu Chang, *Nation, State, and Imperialism in Early China, ca. 1600 B.C.-A.D. 8*, 225.

[205] Trombert, 81.

the Western Regions and the imperial core, as well as the vastness of the newly acquired territory.[206] He suggests that the economic burdens associated with managing such a remote and large area were significant factors in Emperor Wu's decision to reject Sang's proposal to establish agro-military settlements in the Western Regions.[207] This insight underscores the complex considerations of logistics and cost that influenced strategic decisions in the Han empire, reflecting the challenges of maintaining and expanding control over distant territories.

Notably, some historians highlight that Sang's recommendation marks the earliest recorded instance of the term "create agricultural outposts" (*tuntian* 屯田) in historical documentation.[208] Yet, the practice of having soldiers engage in agricultural production preceded Sang's memorial. According to the transmitted historiographical texts, the wide creation of the agricultural settlements by the army in the Han empire took place when the Emperor Wu's court established military settlements in the Ordos region, i.e. Shang 上 and Shuofang 朔方 commanderies.[209] The policy of agro-military settlements introduced by Emperor Wu's court clearly targeted soldiers rather than criminals and civilians as Chao Cuo initially envisaged. The army was stationed on the empire's northern frontiers; while cultivating land to sustain themselves, they fulfilled their military duties. The shift from criminals and civilians to military personnel indicated that government-induced settlement in the frontier regions became a formal policy in which the court was willing to invest human and monetary recourses. Ultimately, this

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[206] Chang, *Frontier, Immigration, and Empire in Han China, 130 B.C.-A.D. 157*, 222.

[207] Chang, 224.

[208] Liu Guanghua 劉光華, *Handai xibei tuntian yanjiu* 漢代西北屯田研究, 11; Trombert, *Le Glaive et La Charrue*, 196.

[209] Ban Gu stated, "When Zhangye and Jiuquan commanderies were initially set up, and when the officials in charge of agriculture in Shang, Shuofang, Xihe, and Hexi commanderies were set up, [the emperor] dispatched 600,000 poor soldiers to safeguard those areas and create military farms there" (初置張掖、酒泉郡，而上郡、朔方、西河、河西開田官，斥寒卒六十萬人戍田之) (*HS* 24, 1173).

transition underscored the court's commitment to establishing agro-military settlements in the borderlands. As Chapter 2 indicated, maintaining an armed force was costly; thus, deploying soldiers to create agro-military settlements embodied the court's determination and the empire's will.

The historical evidence presented above suggests that Emperor Wu's court did or at least attempted to command the army and civilians to settle and cultivate in the northern and northwestern border. Despite conquering the entire Hexi region and setting up the civil government in its northern part,[210] the southwestern part of the Hexi region titled the Hehuang region 河湟地區 remained less explored by the Han armies during Emperor Wu's reign. According to Yan Shigu 顏師古, the Han court did not establish any agro-military settlements until 61 BCE when General Zhao Chongguo 趙充國 proposed his "military farm strategy" in two memorials to Emperor Xuan.[211] In order to defeat the Qiang people, General Zhao advised the emperor that the court should aim at gaining victories by "employing a totality of means like the sage emperors and kings" (帝王之兵，以全取勝).[212] His grand strategy to repulse the Qiang armies could be summrized as such:

> 明主般師罷兵，萬人留田，順天時，因地利，以待可勝之虜，雖未即伏辜，兵決可期月而望。
> However, if the Brilliant Ruler were to withdraw his army and disband his troops, leaving 10,000 men to till the fields, then, following Heaven's time (the natural course of the seasons) we gain the earth's profit (the harvest) as we wait for [the enemy] to become vulnerable. Although the enemy will still be unruly for a while, we may look forward to a military decision within a few months.[213]

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[210] *HS* 24, 1173; *HS* 61, 2700.
[211] *HS* 69, 2979-2986.
[212] *HS* 69, 2987.
[213] *HS* 69, 2987; Edward L. Dreyer, "Zhao Chongguo: A Professional Soldier of China's Former Han Dynasty," *The Journal of Military History* Vol. 72, No. 3 (July 2008): 696-7. DOI: https://doi.org/10.1353/jmh.0.0028.

Creating agro-military settlements was so essential to General Zhao's grand strategy that he laid out twelve benefits that creating agro-military could bring about and that resorting to military confrontation could evaporate in his memorial to Emperor Xuan.[214] Specifically, General Zhao argued in favour of establishing agro-military settlements in the Hehuang region by employing what modern economists would call "cost-benefit analysis." He presented detailed calculations of the grain, salt, and fodder consumption of his troops stationed in the Hexi region, as Ban Gu recorded:

> 臣所將吏士馬牛食，月用糧穀十九萬九千六百三十斛，鹽千六百九十三斛，茭卧二十五萬二百八十六石。
> The officers and men and horses and oxen under my command consume monthly 199,630 *hu* of unhusked grain, 1,693 *hu* of salt, and 250,286 *shi* of fodder.[215]

General Zhao's statistics provided insight into the food consumption and the logistical pressures faced by the Han Empire in supplying their troops. Because of such heavy financial burden, he advised Emperor Xuan to create agro-military settlements and ensure the food supply for the soldiers. He emphasized that the ideal location for these military farms was the 2,000 *qing* 頃 (approximately 22,780 English acres) of agricultural fields previously owned by the Qiang people.[216] The general sought to persuade the emperor and his inner court by pointing out the economic benefits that would come with creating agro-military settlements in the Hehuang region. Though Qiang people had already cultivated fields in the region, the crops cultivated by the Qiang people were different from those by the Han people.[217] Though General Zhao expected

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[214] *HS* 69, 2987-8.
[215] *HS* 69, 2982–3; Dreyer, "Zhao Chongguo," 694.
[216] *HS* 69, 2983; Dreyer, 694.
[217] According to Ban Gu, Emperor Xuan wrote in his letter to Zhao Chongguo: "General, [you] have planned to strike at the Qiang in the first month, when the Qiang people would have harvested wheat/barley" (將軍計欲至正月乃擊罕羌，羌人當獲麥) (*HS* 69, 2979). Ban Gu's records implied that the Qiang people cultivated wheat or barley. Trombert, using archaeological evidence, confirms that the inhbitants in the Hexi region had cultivated wheat and barley in ca.

to defeat the Qiang army in the next spring, he wished his proposal to be an enduring border policy, which could be conducive to guarding all Han frontiers.[218] Only when the soldiers stationed in the frontier region were self-sufficient that the Han court could afford a long-term confrontation with the non-Chinese people. By working on fields and supplying food for themselves, the court could reduce the logistic cost and the army could launch campaigns against the non-Chinese groups any time they deemed opportunistic.

General Zhao's strategic proposals were initially met with considerable skepticism within Emperor Xuan's court. Each time Zhao Chongguo submitted a memorial, it prompted extensive deliberation among the courtiers. Ban Gu recorded:

> 充國奏每上，輒下公卿議臣。初是充國計者什三，中什五，最後什八。有詔詰前言不便者，皆頓首服。
> Every time when [Zhao] Chonngguo submitted his memorial to His Majesty, the courtiers always discussed [it]. At the beginning, three out of ten courtiers agreed, soon five out of ten, and finally eight out of ten. Those, who initially denounced Zhao's previous memorials, all bowed and showed respect [to General Zhao].[219]

General Zhao, like his predecessors under Emperors Wen and Wu, advocated for the integration of agro-military settlements into the state's broader military strategy. These settlements were not just means to secure military victories but were envisioned as cost-effective, long-term solutions

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2000 BCE while the people in China proper predominantly planted and consumed millet (Trombert, *Le Glaive et La Charrue*, 32-3).

[218] Zhao Chongguo stated in his memorial: "I humbly think that the destruction of the barbarians can be expected in several days or months. It will be as late as in the coming spring, hence it is said that the military action can be expected in a month. I modestly observe that the northern border from Dunhuang to Liaodong spans over fifteen thousand *li*, manned with several thousand officials and soldiers stationed in fortified passes and tunnels, a large number of enemies attack them but cannot inflict harm" (臣愚以為虜破壞可日月冀，遠在來春，故曰兵決可期月而望。竊見北邊自敦煌至遼東萬一千五百餘里，乘塞列隧有吏卒數千人，虜數大衆攻之而不能害) (*HS* 69, 2989).

[219] *HS* 69, 2991. I referred to Dreyer's interpretation when doing my translation of the passage. However, I disagree with Dreyer rendering of "什三," "什五," "什八" as "thirteen," "fifteen," and "eighteen" (Dreyer, "Zhao Chongguo," 702-3).

for maintaining control over expansive territories. Éric Trombert emphasizes the strategic value of Zhao's approach, noting how he was interested in the immediate military successes than in demonstrating the effectiveness of the agro-military settlements in ensuring sustainable occupation. Emperor Xuan, recognizing the merit in these arguments, eventually lent his support to Zhao, underscoring the strategic importance of agro-military settlements to the Han military and expansionist policies.[220]

2. The Administration of Agro-Military Settlements

Regardless of the motivations driving the Han empire, the administration in Emperor Wu's name embarked on a significant endeavor to establish agro-military settlements in the Hexi region. Whether to alleviate logistical costs or to domesticate distant lands, the administration commanded a formidable force of soldiers. Ban Gu provides a detailed account of this deployment:

> 益發戍甲卒十八萬酒泉、張掖北，置居延、休屠以衛酒泉
> In addition he called out a force of 180000 conscripts engaged on garrison [and agricultural] duties, and [Juyan] and [Xiutu] were founded the north of [Jiuquan] and [Zhangye] [commanderies] in order to protect [Jiuquan].[221]

> 初置張掖、酒泉郡，而上郡、朔方、西河、河西開田官，斥寒卒六十萬人戍田之[222]
> When Zhangye and Jiuquan commanderies were initially set up, and when the officials in charge of agriculture in Shang, Shuofang, Xihe, and Hexi commanderies were set up, [the emperor] dispatched 600,000 poor soldiers to safeguard those areas and create military farms there.

[220] Trombert, *Le Glaive et La Charrue*, 96.

[221] *HS* 61, 2700; Ban Gu, "Translation of *Hanshu* 61: The Memoir on Chang Ch'ien and Li Kuang-li," in *China in Central Asia: The Early Stage 125 BC – AD 23*, translated by A.F.P. Hulseweh (Leiden: E. J. Brill, 1979), 230.

[222] *HS* 24, 1173.

The cumulative effect of these deployments was substantial, with over 780,000 soldiers involved in transforming their military roles to focus on agricultural production and infrastructure development.

This significant shift in duties necessitated the establishment of specialized semi-military and semi-civilian administrative structures to oversee and facilitate the transition. A prominent example of such a hybrid institution is the Chief Commandant of Agriculture (*nong duwei* 農都尉). Although the title "Chief Commandant" indicates a military association, these officials were primarily subordinate to the Chief Clerks (*zhangshi* 長史), who were aides of the Governor specific to border commanderies, and responsible for armament and horses. This positioning of the Chief Commandant of Agriculture under the Chief Clerk, placed the former within the civil bureaucracy and limiting their authority over civilians.[223] Éric Trombert highlights a parallel role played by the Colonel in charge of Field Protection (« colonel chargé de la protection des terres cultivées » *hutian xiaowei* 護田校尉), who held equal importance in the creation of agro-military settlements and was comparable in rank to the Chief Commandant of Agriculture.[224] This title unequivocally suggests a military function, with responsibilities focusing on the security of the soldier-peasants engaged in agricultural activities within the outposts. This division of labor illustrates the Han Dynasty's strategic approach in delineating responsibilities: while the Chief Commandant of Agriculture focused on overseeing agricultural production, the Colonel in charge of Field Protection ensured the safety and security of these vital agricultural operations.[225]

[223] Trombert, *Le Glaive et La Charrue*, 143.
[224] Trombert, 144.
[225] Trombert, 144.

In terms of the county-level courts, the Office of the Agricultural Fields (*tianguan* 田官) was a more complicated case. Trombert clarifies that the term *tianguan* (田官) could refer to the administrative structure in charge of agricultural development, the title of the head of the office, or the territory under its jurisdiction.[226] Trombert notes that the Office of Agricultural Fields played a pivotal role in developing new agricultural territories, particularly through the construction of irrigation canals, enhancing the productivity and sustainability of these frontier lands.[227] Additionally, Tsang Wing Ma also indicates that the Office was in charge of "government-owned fields" (*guantian* 官田) or "public fields" (*gongtian* 公田).[228] Robin D. S. Yates further clarifies that these fields were instrumental in providing the necessary food supplies for the military personnel stationed around the government-owned fields.[229]

Initially, as Yates notes, this office functioned under the Bureau of Granaries (*cang cao* 倉曹), part of the civil government during the Qin dynasty.[230] However, some historians, such as Zhang Junmin, argue that the Office of Agricultural Fields also had a protective role, suggesting a dual military and civil bureaucratic identity, because the Office of Agricultural Fields was an abbreviate of "the Office of Agricultural Fields in charge of Protecting Civilians" (« *tianguan* chargé de la protection militaire des gens du peuple » *jiangbing humin tianguan* 将兵护民田官)

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[226] Trombert, 148.

[227] Trombert, 148.

[228] Ma Tsang Wing, "Categorizing Laborers: Glimpses of Qin Management of Human Resources from An Administrative Document from Liye, Hunan Province," *Early China* 44 (2021): 369. https://doi-org.proxy3.library.mcgill.ca/10.1017/eac.2021.1.

[229] Robin D.S. Yates, "Chapter 6 The Economic Activities of a Qin Local Administration: Qianling County, Modern Liye, Hunan Province, 222–209 BCE," in *Between Command and Market*: *Economic Thought and Practice in Early China*, edited by Elisa Levi Sabattini and Christian Schwermann (Leiden, The Netherlands: Brill, 2021), 302. doi: https://doi.org/10.1163/9789004466432_008.

[230] Yates, "Chapter 6 The Economic Activities of a Qin Local Administration," 256-7.

based on the excavated materials in the Hexi region in the middle and late Western Han dynasty.[231] Since Yates' conclusion is based on his analysis of Qianling 遷陵 county, Dongting 洞庭 commandery, in the south of the Qin empire, the difference between his and Zhang's claims may be a result of temporal and regional variations. Trombert acknowledges that while the Officers of Agricultural Fields in charge of Protecting Civilians primarily held military responsibilities, they also governed civilian populations, including peasants and shepherds around their agro-military settlements.[232] Yet, he also notes that the Officers of Agricultural Fields in charge of Protecting Civilians were a special kind of Officers of Agricultural Fields, insinuating that the other Officers of Agricultural Fields had no military association.[233]

The Han empire's commitment to the expansion and sustainability of agro-military settlements is vividly illustrated by the establishment of specialized offices at both the commandery and county levels. This complex administrative framework included the Chief Commandant of Agriculture and the Colonel in charge of Field Protection in the commandery-level administration. Furthermore, the integration of the Office of the Agricultural Fields into the county-level bureaucracy highlighted the dual military-civil nature of these initiatives, which were crucial in managing the vast tracts of government-owned and public fields. The deployment of hundreds of thousands of soldiers into these roles underscores the central court's strategic emphasis on embedding military discipline within civil administration to fortify the Han rule over the new border regions. It becomes clear that the establishment of these administrative offices was not merely logistical but also a deliberate effort to bridge the vast distances—both

[231] Zhang Junmin 张俊民, "Han dai juyan tuntian xiao kao — Han jiaqu houguan chutu wenshu wei zhongxin" 汉代居延屯田小考—— 汉甲渠候官出土文书为中心, *Xibei shi di* 西北史地 No. 3 (1996): 69.

[232] Trombert, *Le Glaive et La Charrue*, 150.

[233] Trombert, 150.

geographical and cultural—between the imperial core and its new frontiers. The subsequent section will delve into the complexities these efforts introduced, examining how they shaped the empire's administrative and military strategies in the face of expansive territorial ambitions.

3. Producing Food Locally

General Zhao Chongguo's assertions about the financial strains of transporting grain from the imperial heartland to the distant new frontiers illuminate the broader economic challenges faced by the Han court. The protracted route from Chang'an to Dunhuang, extensively detailed in earlier discussions in Chapter 1, exemplifies the logistical hurdles: maintaining supplies to the armies stationed in the Hexi region was not only arduous but financially draining. While exact logistics costs are difficult to determine, historical estimates suggest significant expenditures. Historians like Huang Jinyan, Chen Xiaoming, Shangguan Xuzhi, Éric Trombert, and Fan Lixiang, drawing on Liu Guanghua's estimates, claim that even basic transportation incurred steep costs. For instance, transporting a cart of grain, about 25 *shi* of grains, from the walled town of Biaoshi 表是 county, Jiuquan commandery to Jin pass 金關, northeastern of Dunhuang commandery, entailed transportation fees ("frais d'acheminement" ou "frais de transport" *jiufei* 僦费) ranging from 1,300 to 1,360 cash. According to those historians, these transport fees escalated dramatically over greater distances, with fees increasing tenfold from Chang'an to Juyan county.[234]

[234] Huang Jinyan 黃今言 and Chen Xiaoming 陳曉鳴, "Hanchao bianfangjun de guimo ji qi yangbin feiyong zhi tantao" 漢朝邊防軍的規模及其養兵費用之探討 [An Exploration of the Scale and Costs of Maintaining Border Defense Forces in the Han Dynasty], *Zhongguo jingji shi yanjiu* di 1 qi 中國經濟史研究第 1 期 [The Study of Chinese Economic History No. 1] (1997): 94-5; Shangguan, "Qin Han shiqi junfei kaizhi, choucuo yu guanli wenti yanjiu" 秦汉时期军费

Moreover, the inefficiency of long-distance transportation is underscored by Sima Qian, who highlights the significant losses incurred during such efforts. Sima Qian stated,

> 當是時，漢通西南夷道，作者數萬人，千里負擔饋糧，率十餘鐘致一石。
> At the same time the Han government was building the road through the region of the southwestern barbarians, employing a force of 20,000 or 30,000 labourers. Provisions for them had to be carried for a distance of 1,000 *li*, and of ten or more *zhong* sent out, only one picul, or less than one tenth of the original amount, reached its destination.[235]

The Euclidean distance between Bi 僻 County in Jianwei Commandery 犍为郡 (27.7134° N, 106.9201° E) and Chang'an (34.2946° N, 108.94225° E) is approximately 756 kilometers, or around 1,818.19 *li*. If Sima Qian's account is taken literally, only 2.17% of the grain would have arrived. Given the actual terrain and the necessary detours, the true loss during transit must have exceeded 97.03%, assuming the calculation is accurate. However, the data provided by Sima Qian is imprecise, rendering any statistical conclusion unreliable. In other words, 97.03% is definitely not an accurate figure. Regardless of the exact percentage, Sima Qian's record underscores the formidable logistical challenges faced by the Han government. Additionally, Sima Qian's account pertains to transportation from Chang'an to the southwest, whereas the Hexi region lies to the northwest of the capital. Thus, one must consult other sources to assess the transportation losses specific to the northwestern frontier. In terms of transporting grains to the Hexi region, Huang and Chen claim that 10% were lost[236] while Fan claims that 20% of

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开支, 9; Trombert, *Le Glaive et La Charrue*, 189-90; Fan, "Hanjian suo jian Hexi shubian junfei xiangguan wenti kao" 漢簡所見河西戍邊軍費相關問題考, 38.

[235] *SJ* 30, 1421; Sima Qian, "*Shiji* 30: The Treatise on the Balanced Standard," in *Records of the Grand Historian: Han Dynasty*, translated by Burton Watson (New York: Renditions-Columbia University Press, 1993), 64.

[236] Huang and Chen, "Hanchao bianfangjun de guimo ji qi yangbin feiyong zhi tantao" 漢朝邊防軍的規模及其養兵費用之探討, 95.

grains were lost due to the long distances involved.[237] Trombert emphasizes that there were additional irregular losses during transportation, which compounded the economic pressures on the empire. Consequently, the price of grains could double in some regions due to these logistical costs.[238]

Furthermore, Trombert points out that the grain taxes levied in remote areas often failed to offset the costs of transporting these resources back to central granaries.[239] In this context, the Han administration had a strong incentive to minimize reliance on imports from the interior of the empire. Indeed, after several decades of occupation, as Trombert notes, the fertile areas of the central Hexi corridor had developed sufficiently to supply a significant portion of the grain needed by the soldiers stationed in the outpost, reducing the need for costly long-distance grain transport.[240]

This analysis of the logistical and financial challenges faced by the Han dynasty in sustaining its distant military outposts underscores the significant impact of geographical distance on imperial administration. The transportation of grain and other supplies over vast distances not only incurred steep costs but also resulted in substantial losses, highlighting the inefficiencies inherent in the empire's supply chains. The economic burden of maintaining the frontier armies was so profound that it prompted the central administration to encourage local self-sufficiency in grain production within the newly conquered territories. Ultimately, these logistical challenges played a pivotal role in shaping the Han dynasty's strategies for managing

[237] Fan, "Hanjian suo jian Hexi shubian junfei xiangguan wenti kao" 漢簡所見河西戍邊軍費相關問題考, 38.

[238] Trombert, *Le Glaive et La Charrue*, 191-2;

[239] Trombert, 190.

[240] Trombert, 191.

its expansive and remote frontiers, driving innovations in local governance and agricultural practices to mitigate the high costs of empire maintenance.

4. Shaping the "New World" after the "Old World"

Though the Han's efforts to culturally assimilate the Hexi region are evidenced by their construction of infrastructure—roads, walls, and fortresses—and by extending the empire's administrative framework to these new frontiers through the creation of commanderies and counties, the establishment of agro-military settlements served as more than mere outposts of military power in the Han court's grand strategy of imperial expansion. Historians interpret the military settlements as the first step in a larger plan to culturally integrate newly conquered territories with the imperial core. Both Chang Chun-shu and Éric Trombert emphasize that these settlements played a critical role in the empire's efforts to incorporate distant territories into the Han cultural and administrative sphere. This strategy aimed to transform these frontier regions into reflections of the central provinces, thereby reducing the cultural distance between the peripheries and the heartland.

Both Chang and Trombert elucidate the strategic path of annexation of foreign territories employed by the Han administration to integrate newly conquered territories into the empire's fold. According to Chang, this process, as examined through the establishment of Dunhuang, Longle, and Juyan counties, reveals a methodical, three-stage development strategy implemented by the Han to ensure effective control and integration of distant regions. The initial stage involved the establishment of watch stations or fortresses in strategically important areas. This military presence not only secured the region but also facilitated the settlement of civilians who cultivated the surrounding lands. This symbiosis between military security and agricultural

development was crucial, as it allowed these areas to become self-sustaining, a vital factor given the vast distances from the imperial core.[241] Should these conditions prove favorable, the Han court would escalate its efforts, transferring additional settlers to expand agricultural activities, construct further military installations, and thereby accelerate the region's development. This expansion was heavily influenced by both external security conditions and internal administrative efficacy, demonstrating how geographical distance necessitated robust local governance structures.[242] The culmination of this process was marked by the transition from military to civil administration. Once a region had stabilized and expanded sufficiently, a county government was established. The local magistrate then assumed control over civil affairs, while the role of the chief commandant was refined to focus more strictly on military concerns, though still retaining some oversight over civil-military interactions. This transition signifies the final stage of integration, transitioning from direct military governance to a more integrated civil administration, illustrating the empire's adaptive strategies in bridging the vast distances of its expanding territories.[243]

Trombert provides a parallel analysis based on Zhao Chongguo's establishment of agro-military settlements in the Hehuang areas. His findings suggest a similar phased strategy: firstly, the withdrawal of combat troops and establishment of agro-military settlements, followed by the demobilization of military settlers, and finally, the creation of areas ruled by civil administration. Those areas likely initially populated by these former military settlers.[244] This process of annexation of foreign territories underscores the Han's strategic withdrawal and transformation

[241] Chang, *Nation, State, and Imperialism in Early China, ca. 1600 B.C.-A.D. 8*, 206-7.
[242] Chang, 207.
[243] Chang, 208-9.
[244] Trombert, *Le Glaive et La Charrue*, 195.

of migrants from military forces into civilian populations, strengthening imperial presence across distant territories. Chang and Trombert agree that while the establishment of agro-military settlements was initially a provisional measure to secure and manage these new territories, it laid the groundwork for a more enduring transformation. The ultimate objective was clear: to cultivate a sense of familiarity and continuity, making these remote areas more culturally closer to the older, central regions of the empire. Over time, these military settlements were envisioned to evolve into thriving civil communities, governed by the same laws and enjoying the same societal structures as those within the core of Han authority.

Another court endeavour also proves that the Han empire's establishment of agro-military settlements was a deliberate strategy aimed at reducing the cultural distance between the imperial heartland and the newly integrated border areas. A critical aspect of this strategy involved promoting agricultural practices characteristic of the imperial core, thereby making these distant territories feel more like home. Zhao Guo 趙過, who succeeded Sang Hongyang as the Chief Commandant of Agriculture in 89 BCE, was instrumental in this endeavour. Zhao was adept in the techniques of crop rotation ("la culture alternée" *daitian fa* 代田法), which he actively promoted within the central Guanzhong region.[245] Éric Trombert notes that the climatic and soil conditions of the Hexi region bore significant similarities to those of Guanzhong, suggesting that agricultural techniques successfully implemented in the empire's heartland could be feasibly adapted to the newly conquered lands in the west. This theoretical adaptability paved the way for the diffusion of innovative farming methods into the Hexi region, enhancing its agricultural productivity and fostering a sense of familiarity for Han settlers.[246] The role of the Chief

[245] Trombert, 63.
[246] Trombert, 65.

Commandant of Agriculture extended beyond mere promotion of agricultural techniques; it was integral to the broader expansionary effort. Trombert's analysis of fragmented agricultural records suggests that either Sang Hongyang or Zhao Guo implemented crop rotation in the Hexi borderlands as part of a strategic initiative to support the expansionary mission. This agricultural strategy was not just about enhancing food security but also about reinforcing cultural ties, making the frontier lands more akin to the central provinces.[247] The adoption of central agricultural techniques in the Hexi region exemplified the Han empire's broader goal of cultural integration. By transplanting familiar agricultural practices to the frontier, the Han administrators sought to cultivate a shared identity and ease the integration of these territories into the empire's socio-economic fabric. This approach not only stabilized the newly conquered regions but also aligned them more closely with the cultural and economic patterns of the imperial core, thereby solidifying the empire's expansionist gains.

5. Challenges and Impacts of the Han's Annexation of the Hexi Region

Following the demise of Emperor Wu in 87 BCE, the aggressive territorial expansion policy of the Han dynasty, characterized by the establishment of agro-military settlements in distant frontiers, faced significant scrutiny and opposition. A formidable challenge arose from the literati class during the policy debates of 81 BCE in the central court. They vehemently criticized the justification of the western expansion, particularly refuting Sang Hongyang's argument that such measures were necessary to counter the Xiongnu threat. The literati stated,

> 今匈奴牧於無窮之澤，東西南北，不可窮極，雖輕車利馬，不能得也，況負重羸兵以求之乎。[248]

[247] Trombert, 65.

[248] Huan Kuan 桓寬. *Yan-tie lun* 鹽鐵論 [The Discourse of Salt and Iron], Wang Liqi 王利器, eds. (Beijing: Zhonghua shuju, 1996), 500.

> Today, the Xiongnu graze in the boundless marshlands, stretching east, west, south, and north, their expanse cannot be fully explored. Even with swift chariots and fast horses, they cannot be caught, let alone when burdened with heavily armed troops in pursuit.

The literati articulated their dissent through metaphor, highlighting the futility of pursuing the Xiongnu who roamed the boundless marshlands in all directions, eluding capture despite the speed of chariots and horses, let alone the pursuit by heavily armed troops. Their criticism extended beyond specific military tactics to a fundamental opposition to any form of territorial expansion. They contended:

> 古之用師，非貪壤土之利，救民之患也。民思之，若旱之望雨。[249]
> In ancient times, the deployment of armies was not for the sake of coveting land and its benefits, but rather to alleviate the sufferings of the people. The people's longing for it was like yearning for rain during a drought.

Drawing on ancient philosophical doctrines, the literati argued that the true purpose of military engagements should be to alleviate the suffering of the people, reminiscent of how one longs for rain during a drought, not to covet land and its resources. This stance was rooted in traditional Confucian values, which they employed to portray imperial expansion as a potential source of corruption and societal instability. While the literati eschewed direct criticism of Emperor Wu, they evoked the First Emperor of Qin as a metaphor, suggesting that the unchecked military expansions and the establishment of military outposts might lead to the downfall of the Han empire, similar to the fate of the Qin.[250] Éric Trombert suggests that the eventual retraction of Han's western expansion at the close of the Western Han Dynasty was due to a lack of sustained imperialist unanimity (« l'unanimité durable pro-impérialiste »).[251] This perspective indicates

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[249] Huan, *Yan-tie lun*, 494

[250] The literati stated, "sending Meng Tian to attack the Xiongnu, they conquered the land south of the Yellow River as the new Qin territory, but lost their original Qin land. They built the Great Wall to defend against the Xiongnu, yet lost what they were trying to protect" (使蒙恬擊胡，取河南以為新秦，而亡其故秦，築長城以守胡，而亡其所守) (Huan, *Yan-tie lun*, 489).

[251] Trombert, *Le Glaive et La Charrue*, 196.

that the literati's objection, while receiving little support initially, might have been influential in the long run.

Chang Chun-shu's analysis presents the Han integration of the Hexi region into the Han realm as a resounding success that significantly enhanced the empire's capabilities. By annexing Hexi, the Western Han dynasty acquired a vast expanse of over "265,000 square miles," enriched with diverse agricultural and industrial resources. This region, abundant in dairy, lumber, textiles, mining, and various farm products, not only bolstered the economic strength of the empire but also facilitated its sustained expansion.[252] Also, the transformation of Hexi—once a geographically and culturally distant frontier—into what Chang describes as "a transplantation of the society of the old world" was pivotal in extending Han influence far beyond its traditional boundaries. This strategic metamorphosis rendered the Han Empire a formidable imperialist power, as it effectively integrated the frontier into the cultural and economic fabric of the empire.[253] Moreover, the retention of the Hexi region secured for the Han a crucial gateway to the West, which was instrumental in enhancing "Chinese-Central Asian" and "Chinese-Western relations." This geopolitical advantage not only fortified the empire's position against external threats but also opened new avenues for trade and cultural exchange, thereby enriching the Han heartland and reinforcing its imperial stature.[254]

Chang's assessment aligns with the traditional historiography of Sima Qian and Ban Gu, emphasizing the strategic significance of the agro-military settlements established in the Hexi region. Sima Qian's narratives elucidate how the Han court achieved its imperial objectives

[252] Chang, *Nation, State, and Imperialism in Early China, ca. 1600 B.C.-A.D. 8*, 211.
[253] Chang, 212.
[254] Chang, 211

through a calculated blend of military conquest and diplomatic engagements. He reflected upon the Han's annexation of the Hexi and stated:

> 是時漢東拔穢貉、朝鮮以為郡，而西置酒泉郡以鬲絕胡與羌通之路。漢又西通月氏、大夏，又以公主妻烏孫王，以分匈奴西方之援國。又北益廣田至胘雷為塞，而匈奴終不敢以為言。
> At this time the Han forces in the east had conquered the barbarian states of Huimo and Chaoxian and made provinces out of them, while in the west the Han had created the province of Jiuquan in order to drive a wedge between the Xiongnu and the Qiang barbarians and cut off communications between them. It had also established relations with the Yuezhi people and Daxia (Bactria) farther west and had sent an imperial princess to marry the ruler of the Wusun people, all in an effort to create a split between the Xiongnu and the states to the west which had up to this time aided and supported them. In addition, the Han continued to expand its agricultural lands in the north until the frontier had been pushed out as far as Xuanlei. In spite of all these moves, however, the Xiongnu did not dare to voice any objections.[255]

Sima Qian details the Han's expansion efforts, noting the annexation of eastern territories like Huimo and Chaoxian, alongside the establishment of the Jiuquan commandery in the west. This strategic positioning served to isolate the Xiongnu from the Qiang, severing key alliances that had bolstered their power. Furthermore, Sima Qian highlights Han's diplomatic outreach to the Yuezhi and Daxia, and the matrimonial alliance with the Wusun, aiming to disrupt the unity among the Xiongnu's support states. These moves, coupled with agricultural expansions to the north, reinforced Han's frontier while stifling any potential dissent from the Xiongnu—illustrating a sophisticated blend of military fortitude and diplomatic finesse.

Ban Gu echoes Sima Qian's positive evaluation, particularly noting the era of Emperor Wu, whose policies were sharply focused on undermining the Xiongnu. He stated:

> 孝武之世，圖制匈奴，患其兼從西國，結黨南羌，乃表河西，列四郡，開玉門，通西域，以斷匈奴右臂，隔絕南羌、月氏。單于失援，由是遠遁，而幕南無王庭。
> In the age of [Emperor Xiao] Wu, policy was directed to controlling the Xiongnu, in the realization of the danger that they might form a union with the western states and an

[255] *SJ* 110, 3497; Sima Qian, "*Shiji* 110: The Account of the Xiongnu," in *Records of the Grand Historian: Han Dynasty*, translated by Burton Watson (New York: Renditions-Columbia University Press, 1993), 156.

> alliance with the southern [Qiang]. [The Chinese] thereupon demarcated the area [west of] the Yellow River; a line of four commanderies was established and the [Yumen] [barrier] was opened so as to communicate with the Western Regions, and in order to sever the right arm of the [Xiongnu] and to separate them from the southern [Qiang] and the [Yuezhi]. The shanyu lost his support, and thereafter fled afar, and no royal court was held south of the desert.[256]

By delineating and fortifying the region west of the Yellow River with a string of commanderies and enhancing communication with the Western Regions, the Han effectively "severed the right arm" of the Xiongnu, isolating them from their allies, the southern Qiang and the Yuezhi. This strategy significantly diminished the Xiongnu's influence, leading to their eventual retreat and the disbandment of their royal court south of the desert. These historical accounts demonstrate that the Han's use of agro-military settlements was not merely about territorial control but also about creating a buffer and reducing cultural distances between the imperial core and the new border areas. Overall, based on the traditional historiography, Han's expansionary policies had profound implications for Han's imperial structure, enabling it to transform into a formidable power, adept at manipulating both military and diplomatic landscapes to its advantage.

Chang Chun-shu highlights a significant socio-economic benefit of the Han empire's expansionary efforts, particularly in terms of population management. He observes that the establishment of agro-military settlements in the Hexi region served not only as a strategic military initiative but also as a relief mechanism for the empire's core in the east. By relocating a substantial portion of the economically distressed and socially undesirable segments of the population from the eastern provinces, these settlements alleviated the economic and social pressures that might otherwise have fueled unrest and instability, particularly during periods of natural disasters or poor harvests.[257] Éric Trombert, while generally divergent in his views from

[256] *HS* 96B, 3928; Hulseweh, "Translation of *Hanshu* Chapter 96," 197–8.
[257] Chang, *The Rise of the Chinese Empire, Vol. One*, 212.

Chang, concurs on this point. He articulates that the influx of civilians was intended to gradually shift the demographic balance of the frontier regions in favor of the Han Chinese. Trombert explains that this demographic transformation had a long-term strategic value, effectively altering the population dynamics to the detriment of the indigenous groups. This shift was underpinned by the vast reservoir of population in the interior of China, ensuring a sustained Han presence and influence in these newly integrated territories.[258] This strategy of demographic realignment through annexation of foreign territories not only reinforced the Han's territorial claims but also embedded Han cultural and administrative norms more deeply within these frontier regions. Such measures diminished the cultural distances between the core and the peripheries, embedding the imperial influence more firmly and creating buffer zones that were both economically viable and culturally assimilated.

6. Concluding Remarks

This chapter explored the complex interplay between the rhetoric and realpolitik underpinning the establishment of agro-military settlements by the Han court, focusing on the role of the remote outposts, actual or imagined, in diminishing both economic and cultural distances between the imperial core and its newly annexed territories. Through an examination of the origin and advocacy for these settlements, as articulated by key courtiers like Chao Cuo, Sang Hongyang, and Zhao Chongguo, historians gain insight into the strategic justifications that drove the Han empire's expansionist policies. These politicians highlighted the practical benefits of such agro-military settlements in terms of economic sustainability and cultural integration as well as territorial consolidation.

[258] Trombert, *Le Glaive et La Charrue*, 196.

The analysis demonstrates that the agro-military settlements were instrumental in mitigating the logistical challenges and economic burdens associated with maintaining and provisioning distant frontiers. By fostering agricultural self-sufficiency in these areas, the Han court effectively reduced the imperial supply chain's vulnerability and economic strain. Culturally, these agro-military settlements served as allures to attract the civilian migrants from the imperial centre, thereby assimilating the frontier regions into the socio-political fabric of the empire, reducing the cultural gap between the core and the periphery.

However, the establishment of these agro-military settlements was not without its challenges and limitations. While they secured a more stable presence in regions like Hexi, Han attempts to extend this model into the Western Regions met with less success, leading to a strategic withdrawal. This partial retreat underscores the practical limits of imperial policy and the adaptive strategies employed by the Han dynasty in response to the complex dynamics of frontier management.

In conclusion, the creation of agro-military settlements under the Western Han dynasty was a significant policy aimed at bridging both the tangible and intangible divides that separated the heartland from its frontiers. While not wholly successful in every endeavor, these efforts reflect a nuanced approach to empire-building that sought to balance ambitious expansion with the realities of administrative and logistical constraints.

Conclusion

The Western Han empire's approach to managing the logistical challenges posed by its own expansion was multifaceted, strategically employing both infrastructure development and administrative reforms to bridge vast distances. This thesis contends that the empire's tactics were centered on the implementation of Han administrative practices in its remote outposts, a strategy that was crucial in overcoming the spatial, economic, and cultural challenges imposed by distance.

Chapter 1 provided a foundational analysis of the Han road network in the Hexi region, employing the Least Cost Path Analysis (LCPA) to identify and quantify the theoretically most efficient routes connecting the imperial core to this frontier. This methodological approach, underpinned by historical and archaeological data, revealed the Han court's acute awareness of physical distances. The discrepancies between historical records and LCPA estimates were critically examined, offering insights into the possible inaccuracies or biases in ancient recording practices.

Chapter 2 delved into the economic implications of conquering and sustaining control over the Hexi region, particularly focusing on the substantial financial outlays during the Hexi Campaign of 121 BCE and during Emperors Zhao and Xuan' rules. By contextualizing these military expenditures within the broader fiscal strategies of Emperor Wu's reign, including the introduction of new taxes and state monopolies, this chapter highlighted the adaptive economic measures undertaken to maintain and stabilize the imperial fiscal status quo.

Chapter 3 examined the agro-military settlements, which served both economic and cultural objectives. The strategic establishment of these settlements not only alleviated logistical burdens by localizing grain production but also facilitated cultural assimilation, thereby

integrating the Hexi region more closely with the Han heartland. This policy reflects a sophisticated understanding of the multifaceted challenges posed by distance, addressing them through an innovative blend of military, economic, and cultural strategies.

Building on the insights garnered from this investigation into the Western Han empire's strategic management of imperial expanses, a promising area for future research emerges. Comparative analysis with the Roman empire's frontier strategies. Such a study would illuminate the distinct approaches each empire took toward managing and integrating their expansive territories. The Roman empire, particularly after Augustus established a professional army in 31 BCE, utilized a military-focused approach to manage its frontiers. Roman strategy involved constructing forts at the boundaries of their empire and stationing troops within these forts. Upon retirement, soldiers received a substantial bonus, equivalent to fifteen years of salary, encouraging them to settle near these frontier forts. This practice not only provided retired soldiers with a means to start a new life but also helped to secure the empire's borders by maintaining a population of experienced military personnel on the periphery. This system, which persisted until the fourth century, reflects a distinctly militaristic approach to frontier management.[259] In contrast, the Han Chinese employed a more integrative approach, actively recruiting farmers to settle in newly acquired territories to make these regions 'like home.' This strategy not only aimed to secure the frontiers but also to assimilate these areas culturally and economically into the Han empire. The Chinese approach involved a blending of military and

[259] For the Roman Empire's military colonies and imperial expansion, *see* Jane Burbank and Frederick Cooper, *Empires in World History: Power and the Politics of Difference* (Princeton, NJ: Princeton University Press, 2022), https://doi.org/10.1515/9781400834709; Ian Morris, "Empire and Military Organization," in *The Oxford World History of Empire: Volume One: The Imperial Experience*, edited by Peter Fibiger Bang, C. A. Bayly, and Walter Scheidel (New York: Oxford University Press, 2021), 155-176. https://doi-org.proxy3.library.mcgill.ca/10.1093/oso/9780199772360.003.0005, accessed 7 Aug. 2024.

civilian elements to foster a self-sustaining and loyal population at the empire's edges. Comparative research into these strategies could offer deeper insights into how ancient empires navigated the challenges of distance and integration. This study would contribute significantly to our understanding of imperial strategy, highlighting the differences in how Rome and Han China used their frontier territories not merely as military buffers but as integral parts of their empires, albeit in fundamentally different ways.

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