

The Implementation of Administrative and Legal Reforms in the German State of Baden during the 19th Century

Inauguraldissertation
zur Erlangung des akademischen Grades
eines Doktors der Wirtschaftswissenschaften
der Universität Mannheim

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Vorgelegt im Dezember 2012

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Tag der mündlichen Prüfung: 21. März 2013

Acknowledgements

The present thesis has been prepared during my time at the Chair of Economic History at the University of Mannheim. This thesis would not have been written without the encouragement of the late Christoph Buchheim, who aroused my interest in economic history and gave me the opportunity to work on this project. After his death in 2009, the supervision of the thesis was taken over by Prof. Jochen Streb and Prof. Eckhard Janeba. I am very thankful for their support in these tough times. Through their continuous advice and encouragement they also contributed substantially to the successful completion of this thesis.

I also have to thank Stefanie van de Kerkhof and Katharina Mühlhoff with whom I enjoyed long discussions and who have taken the burden to read several versions of my work.

This thesis is partly based on original records that can be found in the *Generallandesarchiv* in Karlsruhe. I have to thank the staff of the *Generallandesarchiv* for their very helpful advice, generous provision of records and the cordial atmosphere. It made the Generallandesarchiv a good place to work.

I furthermore have to thank Jonas Scherner, Alexander Donges and my former colleagues at the Chair of Economic History. Finally, I want to thank my friends, my family and especially Max and Lena.

Mannheim, December 2012

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Introduction

In recent years economists and economic historians alike have reconsidered the role of the state as a determinant for a society's prosperity. These scholars argue that institutions that facilitate broad taxation, support private markets and grant and protect private property are elementary prerequisites for economic growth.¹ According to these authors, states can influence the prosperity of their society by the degree they are providing these institutions.²

But states are no artificial machines that work according to a fixed setup. They are run by people, called bureaucrats. These bureaucrats face incentives which motivate them to implement formal institutional rules correctly or to misuse them for their personal benefit.³ Even when the formal institutional framework – e.g. the rules and laws that govern taxation, regulate markets and grant private property – is beneficial for growth, bureaucrats may face incentives to misuse these rules deteriorating the growth perspectives of a society. For these reasons, the rules and regulations that frame bureaucrats' incentives to adhere to the formal institutional framework are an important component for a society's economic fate.

However, there are relatively few studies which consider the importance of an efficient, uncorrupt bureaucracy for economic growth. There are even fewer studies that ask how such an efficient bureaucracy can be established. The goal of the present thesis is to close this gap. Thereby it concentrates on the internal dynamics of an administration after the introduction of an efficiency-enhancing organization.⁴ More explicitly, this study asks how rules and regulations that govern employment dismissal, promotion and remuneration of bureaucrats shaped the latter's incentives to implement or to misuse

¹ This list can be expanded by the ability of states to foster human capital and providing public health.

² See: *D. Acemoglu/J. A. Robinson*, *Why nations fail. The origins of power, prosperity, and poverty*, London 2012; *T. Besley/T. Persson*, *Pillars of prosperity. The political economics of development clusters*, Princeton, NJ 2011; *C. Buchheim*, *What causes successful late development? Insights from history*, in: *The South African Journal of Economic History* 1&2, 2006, pp. 52–83; *R. La Porta/F. Lopez-de-Silanes/A. Shleifer/R. W. Vishny*, *The Quality of Government*, in: *The Journal of Law, Economics, & Organization* 1, 1999, pp. 222–279; *D. North/J. Wallis/B. Weingast*, *Violence and Social Orders. A Conceptual Framework for Interpreting Recorded Human History*, Cambridge 2009 and *M. Olson*, *Autocracy, Democracy, and Prosperity*, in: *R. J. Zeckhauser* (ed), *Strategy and choice*, London 1993, pp. 131–157.

³ See e.g. *J. E. Rauch*, *Bureaucracy, Infrastructure, and Economic Growth: Evidence from U.S. Cities During the Progressive Era*, in: *American Economic Review* 4, 1995, pp. 968–979 and *A. Shleifer/R. W. Vishny*, *The grabbing hand. Government pathologies and their cures*, Cambridge, Mass. 1999².

⁴ The question why the reform was undertaken in the first place is not addressed here.

the formal administrative and legal framework. In a second step, I attempt to measure whether administrative reform had an effect on the efficiency of the bureaucracy.

The thesis provides a detailed case study of local bureaucrats, called district magistrates (*Amtmänner*) in the German state of Baden during the late 18th and 19th century. The study builds on an extensive set of archival material from the Generallandesarchiv in Karlsruhe including information about district magistrates' remuneration and their performance in regard to the implementation of the formal administrative and legal framework.

During the period of investigation the small south-west German territory of the princes of Baden turned into a well-ordered state which was often referred to as "Musterstaat".⁵ Indeed, during this period local bureaucrats changed from corrupt "despotic rulers" to loyal Civil Servants who were committed to common welfare.⁶

The remainder of this introduction is dedicated to a short discussion of the relevant literature, including a more detailed motivation of the thesis. The introduction concludes with a short outline.

States and Economic Growth

The relationship between states and economic growth is a well-researched field. The strand of literature goes back to the works of Douglass C. North who re-introduced the analysis of institutions into economic theory.⁷ Together with Barry Weingast, North also emphasized the role of the state for the economic success of a society. In their paper "Constitutions and Commitment"⁸ the two authors argue that the Glorious Revolution which constrained the absolute ruler's power was an important prerequisite for the ability of the English state to broaden its tax base. According to North and Weingast, arbitrary rule in the centuries before the Glorious Revolution led to very high interest rates for the English crown, because creditors feared expropriation. After the Glorious Revolution constrained the King's power, interest rates declined, because the

⁵ That is: archetype of state. See for this view *L. Gall*, *Der Liberalismus als regierende Partei. Das Großherzogtum Baden zwischen Restauration und Reichsgründung*, Wiesbaden 1968.

⁶ The term "despotic ruler" is derived from: *J. Eibach*, *Der Staat vor Ort. Amtmänner und Bürger im 19. Jahrhundert am Beispiel Badens*, Frankfurt a. M. 1994, pp. 162–163.

⁷ Cf. *D. North/P. Thomas*, *The Rise of the Western World. A new Economic History*, Cambridge 1973; *D. North*, *Structure and Change in Economic History*, New York 1981 and *D. North*, *Institutions, Institutional Change and Economic Performance*, Cambridge 1990.

⁸ *D. North/B. Weingast*, *Constitution and Commitment: The Evolution of Institutional Governing Public Choice in Seventeenth-Century England*, in: *The Journal of Economic History* 4, 1989, pp. 803–832.

parliamentary-controlled Crown was now committed to the re-payment of its debts. This made long-term lending at lower interest rates possible.⁹

A similar argument is brought forward by De Long and Shleifer.¹⁰ The two authors show that European states that limited government power like republics or constitutional monarchies were growing faster than absolutist regimes.¹¹ The difference in the growth rates of absolutist and limited regimes is explained by the regimes' incentives whether or not to establish a growth-detering tax system. Limited governments would tax their economies only moderately, because the former are led by merchants who are interested in the flow of commerce or parliaments have the possibility to veto heavy taxation. Absolutist rulers, on the other side, would be more interested in their private economic prosperity which could be increased by extracting citizens' resources through high tax rates.

Acemoglu, Johnson and Robinson also stress the importance of the absolute ruler's control through the public. E.g. they can show that states which constrained their ruler's power have been economically more successful during the age of Atlantic Trade. Moreover, economic success strengthened merchant groups which in turn increased the citizen's possibility to control their rulers.¹² In a more recent book Acemoglu and Robinson expand their analysis to the question how states shape the prosperity of a society.¹³ According to the two authors, economic institutions are shaped by the distribution of political power within a society; that is by the shape of its political institutions. If political institutions favor a narrow elite, this will normally lead to economic institutions that distribute resources to the political elite preventing the process of creative destruction through investments in new technologies which would promote sustained growth. On the contrary, if political institutions are open, economic

⁹ For a critical review of the North and Weingast thesis see: *B. G. Carruthers*, Politics, Popery, and Property: A Comment on North and Weingast, in: *The Journal of Economic History* 3, 1990, pp. 693–698 and *S. Epstein*, *Freedom and Growth. The Rise of States and Markets in Europe, 1300–1750*, New York 2000. While Carruthers calls for a more detailed historical analysis of the political processes that accompanied the Glorious Revolution, Epstein challenges the thesis at all. In his view, the strong decline of English interest rates during the 18th century was due to a spread of more sophisticated banking techniques that occurred all over Europe (see pp. 16–29).

¹⁰ *J. B. de Long/A. Shleifer*, Princes and Merchants: European City Growth before the Industrial Revolution, in: *Journal of Law and Economics* 2, 1993, pp. 671–702.

¹¹ De Long and Shleifer use data on city growth as a proxy for economic growth.

¹² *D. Acemoglu/S. Johnson/J. Robinson*, The Rise of Europe: Atlantic Trade, Institutional Change and Economic Growth, in: *The American Economic Review*, 2005, pp. 546–579.

¹³ *Acemoglu/Robinson*, *Why nations fail*.

institutions will favor sustained economic growth.¹⁴ The perspectives of a society's prosperity are thus dependent on the outcome of conflicts about political power and their long term trajectories.

North, Wallis and Weingast provide a similar study about the relationship between political and economic institutions and their effect on long-term economic growth.¹⁵ However, the two studies differ in two important points. First, North, Wallis and Weingast emphasize the transition from personal, short lived institutions to impersonal, perpetual-lived institutions as the most important determinant for economic growth. In addition, the two studies differ in their analysis of the transition from a growth impeding to a growth enhancing state. While Acemoglu and Robinson stress critical historical junctures that could change the long-term development path of a society; North and his two co-authors concentrate on inter-elite processes as main explanation for the transition process.

Another feature of the studies by Acemoglu and Robinson and North, Wallis and Weingast is that they underline the importance of centralization including the control of the state over jurisdiction and the means of violence as well as the ability of the state to enforce its laws. The latter is also discussed by Buchheim who argues that the ability of the German states to enforce compulsory education was an important component of Germany's successful late development.¹⁶ The importance of jurisdictional centralization is also discussed by Epstein who argues that "coordination failures" which resulted from the absence of undivided sovereignty were a major impediment for growth in Europe during the Middle Ages.¹⁷

Although the studies cited above emphasize the centralization of power, the structure and level of taxation and the overall (political) institutional framework as an important prerequisite for economic growth, they have relatively little to say about the exact working of these mechanisms. The bureaucracy plays an important role here. Without bureaucrats taxes will not be collected and laws will not be implemented in practice; that is, without an efficient bureaucracy the exertion of power including the possibility of a growth-enhancing agenda is precluded. Yet, except for the study of Buchheim, the

¹⁴ According to Acemoglu and Robinson growth can occur in states with restrictive political institutions. However, growth will not be sustained, because elites will oppose new technologies which are threatening their gains from controlling a specific technology.

¹⁵ *North/Wallis/Weingast, Violence.*

¹⁶ *Buchheim, Successful late Development.*

¹⁷ *Epstein, Freedom and Growth.*

studies presented above have relatively little to say about the role of the bureaucracy for economic growth. Indeed, the literature concerning the effects of the quality of the bureaucracy on economic growth is relatively scarce. Employing cross-country studies, Knack and Keefer as well as Mauro can show that there is an empirical link between bureaucratic efficiency and growth.¹⁸ For a sample of 35 developing countries, Rauch and Evans also find support for the thesis that the quality of bureaucracy matters for economic growth.¹⁹ The two authors show a significant and very robust correlation between the degree of “Weberianism” and economic growth. Thereby “Weberianism” is defined as the degree by which a country recruits its bureaucrats according to merit as well as it offers rewarding and predictable long term careers in its civil service.²⁰ Besley and Persson on the other hand, analyze the role of the bureaucracy from a more abstract point of view. In a series of papers as well as in a book the two authors develop a theory of state capacity.²¹ Their model analyzes the decision of the state to invest into fiscal and legal capacity; that is in the state’s ability to tax its citizens and to enforce private contracts as well as to provide public infrastructure like transportation and provision of power. Investment in state capacity therefore includes investment in the number as well as in the efficiency of the bureaucracy.

The findings of the cross-country and theoretical studies are supported by some case studies. Thus, Rauch estimates the effects of municipal reforms in U.S. cities on city growth during the Progressive Era.²² The main finding of the article is that a professionalization of municipal bureaucracies during the Progressive Era increased the share of expenditures spent for long-term infrastructure projects which were conducive for city growth. Rauch builds on the work of Evans, who analyzes the role of the state for successful late development in several newly industrializing countries like Brazil, India and Korea.²³ According to Evans, an important necessary condition for a state to be

¹⁸ S. Knack/P. Keefer, Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures, in: *Economics and Politics* 3, 1995, pp. 207–227 and P. Mauro, Corruption and Growth, in: *Quarterly Journal of Economics* 3, 1995, p. 681–712.

¹⁹ P. Evans/J. E. Rauch, Bureaucracy and Growth: A Cross-National Analysis of the Effects of “Weberian” State Structures on Economic Growth, in: *American Sociological Review* 5, 1999, pp. 748–765.

²⁰ For a detailed description of the features of a Weberian bureaucracy, see also: M. Weber, *Economy and Society. An Outline of Interpretive Sociology*, New York 1968.

²¹ T. Besley/T. Persson, Wars and State Capacity, in: *Journal of the European Economic Association* 2-3, 2008, pp. 522–530; T. Besley/T. Persson, The Origins of State Capacity: Property Rights, Taxation, and Politics, in: *American Economic Review* 4, 2009, pp. 1218–1244 and Besley/Persson, *Pillars of prosperity*.

²² Rauch, *Bureaucracy*.

²³ P. Evans, The State as Problem and Solution: Predation, Embedded Autonomy, and Structural Change, in: S. Haggard/ R. R. Kaufman (ed), *The politics of economic adjustment*. International

“developmental” is a Weberian bureaucracy. Those bureaucracies seem to be very good in supporting free markets by providing collective goods as well as fostering long term entrepreneurial perspectives among elite groups. Weberian bureaucracies seemed to be very good in providing these features because long term career prospects made bureaucrats less prone to corruption and rent seeking. Meritocratic recruitment, furthermore, guaranteed a high level of professionalism. The observation that relatively uncorrupt and highly professionalized bureaucracies are conducive for growth was also made by Buchheim.²⁴

Given the importance of uncorrupt and professionalized Weberian bureaucracies for growth it is interesting to ask how such a bureaucracy was established. Surprisingly, although all studies presented above argue that *efficient* bureaucracies are conducive for growth, they do not ask how such an organization can be established.²⁵ Other studies just assume that a reform of the organizational design of a bureaucracy is immediately translated into a sound working system.²⁶ This assumption is, however, not trivial. Missing rules of professional conduct or ill enforced administrative and legal processes could hamper the sound working of a well-designed Weberian bureaucracy. This can for example be seen in Russia. As Hay and Shleifer pointed out, Russia failed to transform its economy during the late 1990’s, although formal institutional reforms were introduced. However, bureaucratic corruption could not be curtailed which in turn reduced the security of property rights.²⁷ Another, much debated example is Greece, where the reform packages that were enacted due to the pressure of the EU, the ECB and the IMF fail implementation through the administration.²⁸ Likewise, it seems that the financial administration is unable to collect all tax liabilities.²⁹ The low efficiency of

constraints, distributive conflicts, and the state, Princeton, NJ 1992, pp. 139–181 and *P. B. Evans*, *Embedded autonomy. States and industrial transformation*, Princeton, N.J 1995.

²⁴ *Buchheim*, *Successful late Development*.

²⁵ La Porta et al. measure the drivers of the quality of government. The study concludes that the quality of government is mainly driven by geographical and cultural factors as well as by a country’s legal origin. The size of a government does also matter. Larger governments seem to be better performing ones. However, it seems that La Porta et al. rather measure a spatial correlation than really explaining how quality-enhancing reforms of the bureaucracy can be implemented. See: *La Porta/Lopez-de-Silanes/Shleifer/Vishny*, *Quality of Government*.

²⁶ See e.g. *Rauch*, *Bureaucracy*. This is not true for Evans who argues that a Weberian bureaucracy can only work if it is autonomous of strong coherent elite networks. See *Evans*, *Problem and Solution*, here p. 179.

²⁷ *J. R. Hay/A. Shleifer*, *Private Enforcement of Public Laws. A Theory of Legal Reform*, in: *American Economic Review* May, 1998, pp. 398–403.

²⁸ Cf. Markus Bernath, *Griechenland: Vize-Finanzminister in Athen räumt schwere Versäumnisse ein*, in: *F.T.D. - Financial Times Deutschland*, July 26, 2012 and Michael Martens, *Was Griechenland braucht*, in: *F.A.Z.*, October 29, 2012.

²⁹ Cf. Rainer Hermann, *Fessel Klientelismus*, in: *F.A.Z.*, August 28, 2012.

the Greek bureaucracy is also illustrated by the low score in Transparency International's famous Corruption Perception Index in which Greece, in 2012, scored last compared to the rest of Europe. Therefore, one goal of the thesis is to analyze how an efficient Weberian bureaucracy was implemented into a sound working organization by posing the question of how administrative and legal processes and rules of professional conduct were enforced among district magistrates in the German state of Baden making Baden's Civil Service a prototype of its time. A main finding of this thesis is that internal rules that governed employment, dismissal, remuneration and promotion of Civil Servants played an important role in enforcing rules of professional conduct and adherence to administrative and legal processes.³⁰ However, enforcing these rules was a very costly and time consuming task.

Furthermore, the thesis aims to measure whether the actual implementation of a professional Civil Service had an effect on the efficiency of the bureaucracy. In doing so, I construct an admittedly crude measure for legal capacity, that is the bureaucracy's ability to enforce private contracts and to protect citizens' property rights. According to this measure, legal capacity has risen in the second half of the 19th century.

Bureaucracy and Local Administration in Baden

The question how formal rules of professional conduct and adherence to formal administrative processes can be implemented and how – as a result – the efficiency of the bureaucracy developed can only be answered by employing a case study of a single country or territory. Since the question calls for a detailed analysis of the internal dynamics of the administration, a country cross-section analysis seems to be unsuitable. The case study presented in this thesis is that of local bureaucrats called district magistrates (or *Amtmänner*) in the south-west German state of Baden during the late 18th and 19th century. During the period under examination, Baden developed from a small, fragmented territory within the Holy Roman Empire to a sovereign middle state.³¹ The crucial period of state building took place in the years between 1803 and 1815 when Baden was an ally of Napoleon's France. In this period Baden did not only gain

³⁰ In a cross-country study of 35 less developed countries, Rauch and Evans also find that meritocratic recruitment has a positive influence on bureaucratic performance. Yet, they do not find a significant link between bureaucratic performance and internal promotion or the level of remuneration. Cf. *P. B. Evans/J. E. Rauch*, Bureaucratic structure and bureaucratic performance in less developed countries, in: *Journal of Public Economics* 1, 2000, pp. 49–71.

³¹ The term middle state (or *Mittelstaat*) refers to those German states which were smaller than Austria and Prussia, but ruled over a considerable territory and number of citizens. Besides Baden, Bavaria, Hanover, the Hessian states, Saxony and Württemberg were also middle states.

sovereignty but also increased its territory fourfold from 3,900 km² to 15,000 km². The country's population also rose fourfold during this period (from 250,000 to 1,000,000).³² Politically the country was organized as a monarchy with a strong, hierarchically organized bureaucracy and a less strong diet which had to approve the budget. Although the country was a monarchy from the political point of view, the prince of Baden only had the rank of a Grand Duke. He resided in his capital Karlsruhe.³³

The thesis concentrates on the German state of Baden for two reasons: First, as Baten, Spadavecchia, Streb and Yin pointed out, Baden was representative for Germany³⁴ as a whole in terms of real wages and its industrial structure.³⁵ Baden is furthermore well researched in the fields of political, economic and administrative history.³⁶ The focus on the local administration is also straightforward: district magistrates managed civil and legal issues at the local level (e.g. issuing trade licenses and building permits, but also solving civil and criminal cases).³⁷ Executing these functions, district magistrates were in direct contact with citizens and the economy influencing everyday social and commercial life. District magistrates were also the biggest sub-group within the Civil Service. In total, 344 Civil Servants were employed at the three levels of the administration in 1849. Thereby 176 Civil Servants were employed at the local level, compared to 81 individuals at the intermediary level of the administration and 87 at the central stage.³⁸ District magistrates were therefore an important sub-group within the

³² However, a first step towards a greater political unit was undertaken in 1771 when the territories of the catholic and protestant line of the princes of Baden were re-unified.

³³ For an overview of the political history of Baden see *F. Engehausen*, *Kleine Geschichte des Großherzogtums Baden. 1806 - 1918*, Karlsruhe 2005¹; *L. E. Lee*, *Liberal Constitutionalism as Administrative Reform: The Baden Constitution of 1818*, in: *Central European History* 2, 1975, pp. 91–112; *L. E. Lee*, *The politics of harmony. Civil service, liberalism, and social reform in Baden, 1800-1850*, Newark 1980; *H. Schwarzmaier* (ed), *Handbuch der baden-württembergischen Geschichte. Vom Ende des Alten Reiches bis zum Ende der Monarchien*, Stuttgart 1992 and *H. Schwarzmaier*, *Baden: Dynastie - Land - Staat*, Sigmaringen 2005.

³⁴ More precisely, for Germany in the borders of the *Kaiserreich*.

³⁵ See *J. Baten/A. Spadavecchia/J. Streb/S. Yin*, *What Made Southwest German Firms Innovative around 1900? Assessing the Importance of Intra- and Inter-Industry Externalities*, in: *Oxford Economic Papers*, 2007, pp. i105-i126, here pp. i109-i110.

³⁶ For the latter see *Eibach*, *Staat* and *B. Wunder*, *Die Badische Beamtenschaft zwischen Rheinbund und Reichsgründung (1806-1871). Dienstrecht, Pension, Ausbildung, Karriere, soziales Profil und politische Haltung*, Stuttgart 1998. The pioneering work in the field of economic history is *W. Fischer*, *Der Staat und die Anfänge der Industrialisierung in Baden 1800-1850. Erster Band. Die staatliche Gewerbepolitik*, Berlin 1962 For an overview of Baden's political history during the 19th century see *Schwarzmaier*, *Handbuch*.

³⁷ The legal administration was detached from the civil administration in 1857. From this time on, local judges (called *Amtsrichter*) were responsible for criminal and judicial issues at the local level. For the purpose of simplification I will use only the term district magistrate (*Amtmann*) including local judges after 1857.

³⁸ The data is from *Wunder*, *Die Badische Beamtenschaft*, pp. 592–594. The number of local Civil Servants employed in the legal and administrative branch of the administration increased over

Civil Service. Furthermore, because of the hierarchic structure of the administration, many other positions at the higher levels of the administration were staffed with former district magistrates³⁹. It therefore makes sense to study this sub-group if one wants to draw more general conclusions about the efficiency of the bureaucracy in Baden.

Dealing with the questions how rules of professional conduct and formal administrative processes were implemented and whether this had an effect on the bureaucracy's efficiency requires knowledge about four components: First, how did formal administrative and legal processes and rules of professional conduct change over time? Second, how did formal rules concerning employment, dismissal, remuneration and promotion evolve over time? Third, how did the internal dynamics of the administration look like; that is how were the formal labor market rules applied. Fourth, which outcome did the interplay between the three components described above produce? That is, how did local administrative practices look like? Were they beneficial for growth or did they hamper trade and investments?

Concerning the first two questions the thesis basically draws on secondary literature. Information about the administrative and legal processes of the 18th century was mostly taken from Windelband and Lenel.⁴⁰ Although the two authors published their works at the beginning of the 20th century, they give a very detailed overview of the country's administrative structures. A more current study about the administrative organization of the country during the 18th and 19th century is provided by Grube.⁴¹ Administrative and legal processes were reformed at the beginning of the 19th century. These reforms are described by Knemeyer.⁴² Information about the reform of the legal institutions during

time. While there were 125 persons in 1814 their number rose to 176 in 1849. In 1869 the number of local Civil Servants employed in the two administrative branches reached 213. Twenty years later the number was 237. (For the 1814-figure see *Eibach*, Staat, pp. 53–55.)

³⁹ Cf. *Wunder*, Die Badische Beamtenschaft.

⁴⁰ *P. Lenel*, Beiträge zur Kenntnis von Rechtsverfassung und Rechtsverwaltung der Markgrafschaft Baden im 18. Jahrhundert, Karlsruhe 1912; *W. Windelband*, Die Verwaltung der Markgrafschaft Baden zur Zeit Karl Friedrichs, Leipzig 1916.

⁴¹ *W. Grube*, Vogteien, Ämter, Landkreise in Baden und Württemberg, Stuttgart 1975. A very extensive work about Baden's administrative and legal organization was written by Stiefel. See: *K. Stiefel*, Baden: 1648-1952, Karlsruhe 1979². Yet, Stiefel does not meet scientific standards of documentation and referencing.

⁴² *F.-L. Knemeyer*, Regierungs- und Verwaltungsreformen in Deutschland zu Beginn des 19. Jahrhunderts, Köln 1970. The classical work concerning the administrative and legal reforms is from Andreas. See: *W. Andreas*, Der Aufbau des Staates im Zusammenhang der allgemeinen Politik. (=Geschichte der badischen Verwaltungsorganisation und Verfassung in den Jahren 1802-1818), Leipzig 1913. However, Andreas work is worshipping the Grand-Duke and the state which makes it a less useful source of information.

the early 19th century is drawn from Schubert.⁴³ A very detailed work about one part of the legal reforms – the introduction of a code of procedure for civil trials – is provided by Keller.⁴⁴ Krapp, on the other side, concentrates on one detail of the administrative reforms – the organization of the districts between 1803 and 1815.⁴⁵

Besides administrative and legal processes, the rules that governed district magistrates' employment, dismissal, remuneration and promotion were also reformed during the early 19th century. These reforms are most precisely described by von Müller and Wunder.⁴⁶ Especially the latter provides a very detailed study about all aspects concerning the rights and duties of district magistrates. The labor market rules for district magistrates in Baden before 1800 are described by Fleischhauer and Roth.⁴⁷ An overall picture about the rights and duties of district magistrates in German territories during the 17th and 18th century is provided by Agena.⁴⁸

Building on this literature, the present thesis proceeds with the analysis of the internal dynamics of the administration of the Grand-Duchy of Baden during the 19th century; asking how formal labor market rules were used in order to motivate district magistrates to implement formal administrative and legal processes. The only detailed analysis of the working of the local administration in Baden is from Eibach.⁴⁹ However, Eibach focuses more strongly on the interplay between district magistrates and local elites. The interaction between district magistrates and their supervisory institutions is only briefly touched.

Therefore, I analyze a new set of records from the *Generallandesarchiv* Karlsruhe. The *Generallandesarchiv* was the official archive of the Grand Duchy of Baden. In this function the archive collected materials from all parts of the administration during the

⁴³ W. Schubert, *Französisches Recht in Deutschland zu Beginn des 19. Jahrhunderts*. Zivilrecht, Gerichtsverfassungsrecht und Zivilprozeßrecht, Köln 1977.

⁴⁴ A. Keller, *Die badische Zivilprozessordnung von 1831*, Berlin 1913.

⁴⁵ B. Krapp, *Die badische Ämterorganisation vom Reichsdeputationshauptschluß bis zum Ende der Rheinbundzeit*, Karlsruhe 1931.

⁴⁶ J. von Müller, *Der öffentliche Dienst in Baden im 19. Jahrhundert*, Heidelberg 1974; Wunder, *Die Badische Beamtenschaft*.

⁴⁷ M. Fleischhauer, *Das geistliche Fürstentum Konstanz beim Übergang an Baden*, Heidelberg 1934; A. Roth, *Die Rechtsverhältnisse der landesherrlichen Beamten in der Markgrafschaft Baden-Durlach im 18. Jahrhundert*, Karlsruhe 1906.

⁴⁸ C.-A. Agena, *Der Amtmann im 17. und 18. Jahrhundert. Ein Beitrag zur Geschichte des Richter- und Beamtentums*, Göttingen 1972.

⁴⁹ Eibach, *Staat*. See also J. Eibach, *Konflikt und Arrangement: Lokalverwaltung in Bayern, Württemberg und Baden zwischen Reformära und 48er Revolution*, in: E. Laux/ K. Teppe (ed), *Der neuzeitliche Staat und seine Verwaltung. Beiträge zur Entwicklungsgeschichte seit 1700*, Stuttgart 1998.

19th century. Nevertheless the archive also collected documents from Baden's predecessor states.⁵⁰ For this thesis, I especially used personal files of district magistrates. The *Generallandesarchiv* has a huge number of personal files at its disposal. These files cover almost every occupational class that was employed by the state. Among them is a huge collection of personal files which contains information about remuneration and promotion of district magistrates as well as about the supervisory institutions' assessment of district magistrates' performance in regard of their professional conduct and adherence to formal administrative processes. These records allow a deep analysis of remuneration and promotion decisions and their influence on district magistrates' incentives to implement administrative and legal processes.

The last part of this thesis deals with the question how everyday's administration looked like in practice. For the 18th century there is a vast historical literature about the communication and enforcement of lordship at the local level. For Baden the works of Holenstein and Hohkamp are of special interest.⁵¹ For the 19th century the work of Eibach has to be mentioned.⁵² Actually measuring the efficiency of the bureaucracy, on the other side, is no easy task. For the 19th century I can solve this problem by using the criminal statistics of the Grand-Duchy as a tentative measure for legal capacity, the bureaucracy's ability to enforce private contracts and to protect citizens' property rights. Data on registered crime can be found in the *Übersichten der Strafrechtspflege*, an annually published series of the ministry of justice.⁵³ A detailed historical analysis of the

⁵⁰ For an overview of the records of the Generallandesarchiv see: *M. Salaba*, Die Bestände des Generallandesarchivs Karlsruhe, Stuttgart.

⁵¹ *A. Holenstein*, "Gute Policey" und lokale Gesellschaft im Staat des Ancien Régime. Das Fallbeispiel der Markgrafschaft Baden(-Durlach), Epfendorf 2003; *M. Hohkamp*, Herrschaft in der Herrschaft. Die vorderösterreichische Obervogtei Triberg von 1737 bis 1780, Göttingen 1998. Hohkamp's work is about a territory in Further Austria which after 1803 became a part of the Grand-Duchy of Baden. For other German territories see: *S. Brakensiek*, Fürstendiener - Staatsbeamte - Bürger. Amtsführung und Lebenswelt der Ortsbeamten in niederhessischen Kleinstädten (1750 - 1830), Göttingen 1999; *S. Brakensiek*, Herrschaftsvermittlung im alten Europa. Praktiken lokaler Justiz, Politik und Verwaltung im internationalen Vergleich, in: *S. Brakensiek/ H. Wunder* (ed), *Ergebene Diener ihrer Herrn? Herrschaftsvermittlung im alten Europa*, Köln 2005, pp. 1-22; *K. Gottschalk*, Alkoholische Gärung. Herrschaftskompetenz und Eigennutz in der frühneuzeitlichen Lokalverwaltung Hessen-Kassels, in: *S. Brakensiek/ H. Wunder* (ed), *Ergebene Diener ihrer Herrn? Herrschaftsvermittlung im alten Europa*, Köln 2005, pp. 233-259; *A. Landwehr*, Finanzen, Rechte und Faktionen - eine herzogliche Untersuchungskommission in Leonberg 1755/56, in: *Stadtarchiv Leonberg* (ed), *Streifzüge durch 750 Jahre Leonberger Stadtgeschichte*, Leonberg 2000, pp. 87-111 and *G. Mahlerwein*, Die Herren im Dorf. Bäuerliche Oberschicht und ländliche Elitenbildung in Rheinhessen 1700-1850, Mainz 2001.

⁵² *Eibach*, Staat; *J. Eibach*, Die Bekanntmachungen der Gesetze und Verordnungen in den badischen Gemeinden ab 1803, in: *Zeitschrift für die Geschichte des Oberrheins*, 1994, pp. 431-440; *Eibach*, Konflikt und Arrangement.

⁵³ *Großherzogtum Baden*, *Übersichten der Strafrechtspflege im Großherzogtum Baden*, Karlsruhe 1829-1879

material provided by the *Übersichten der Strafrechtspflege* can be found in Moses' work.⁵⁴

Outline

In order to deal with the questions how formal administrative and legal processes were implemented in Baden during the 19th century and whether the efficiency of the administration rose in the aftermath of reform, the thesis is organized in four chapters.⁵⁵ Chapter one gives an overview of the change of the administrative and legal processes as well as of the rules and regulations that governed district magistrates' employment, dismissal and remuneration. While administrative and legal processes were only vaguely defined during the 18th century, they became more explicit during the first third of the 19th century when a major reform of the state took place. Back then, also the rules of professional conduct were more clearly defined. But the early 19th century brought even further change: first, the rules of employment and dismissal were altered. From now on a university degree was obligatory for entering the Civil Service which increased the professionalization of the bureaucracy. On the other hand, the right of the prince to dismiss a Civil Servant was confined. Dismissing a Civil Servant required a serious violation of the rules of professional conduct. At last, the methods and terms of payment of remuneration were also reformed at the beginning of the 19th century. While remuneration was mainly paid in kind or as participation in office fees during the 18th century, district magistrates now received a fix cash payment paid quarterly by the government. The chapter argues that these widespread changes led to an increase in the bureaucracy's efficiency around mid-19th century making property rights more secure. However, chapter one does not explain in detail how incentives of district magistrates to implement the formal administrative processes as well as to adhere to the rules of professional conduct changed during the 19th century and how this influenced the efficiency of the bureaucracy over time. These tasks are attacked in chapters two, three and four, respectively.

Chapter two assesses the hypothesis that district magistrates' remuneration rose during the 19th century in order to reflect the higher skill level as well as to compensate them for stronger controls and stricter discipline. The chapter tests the hypothesis by computing real living standards of district magistrates during the late 18th and entire 19th

⁵⁴ A. Moses, *Kriminalität in Baden im 19. Jahrhundert. Die "Übersicht der Strafrechtspflege" als Quelle der historischen Kriminologie*, Stuttgart 2006

⁵⁵ The thesis is a composition of several individual papers. Duplications can therefore not be excluded entirely.

century using a new consumption basket that reflects the material and social needs of members of the upper class. The empirical analysis shows that district magistrates had a high material living standard as well as a high position within the income distribution. However, living standards were already high during the 18th century in both absolute and relative terms. Furthermore, absolute and relative living standards decreased since the middle of the 19th century deteriorating district magistrates' privileged position within society. Hence, the hypothesis that remuneration in the 19th century rose considerably compared to the 18th century does not hold. Higher skills and stricter discipline were not reflected by higher real wages during the 19th century. Nevertheless, it seems that district magistrates' real remuneration was very competitive during the late 18th as well as for a long time during the 19th century. This may have attracted high-skilled individuals who otherwise would have chosen a career in the private sector.

Chapter three takes a closer look at the internal labor market for district magistrates in Baden. The chapter argues that the introduction of a hierarchy of pay levels and clearly defined rules of promotion at the beginning of the 19th century was a major incentive for district magistrates to implement formal administrative processes as well as to adhere to rules of professional conduct. During the 19th century, promotions were made dependent on supervisors' assessments of district magistrates' performance in regard to adherence to the rules of professional conduct and the implementation of administrative and legal processes. Thus, those district magistrates who stuck to the rules were rewarded with faster promotion and wider career prospects. The probability of promotion increased by 81 percent for those magistrates who received a positive assessment compared to magistrates with a neutral or negative assessment. But faster promotion in the case of adherence to the formal institutional framework was not the only incentive district magistrates faced during the 19th century. The relatively high real wages compared to their peer groups during the first half of the 19th century also constituted an incentive to stick to the rules. The high wage gap increased the potential costs of dismissal in the case of a violation of the rules of professional conduct or a repeated breach of formal administrative or legal processes.⁵⁶

Finally, chapter four measures the development of the bureaucracy's efficiency during the 19th century. For the purpose of this chapter, efficiency is defined as legal capacity, that is: the bureaucracy's ability to enforce private contracts as well as to protect its citizens' property rights. Because of gaps in data availability, the chapter concentrates

⁵⁶ That is, the big wage gap constituted a shirking wage incentive.

on the latter part of legal capacity. Using data on local theft rates I can construct a measure for legal capacity. This measure indicates a rise of legal capacity during the second half of the 19th century.

1. The formal institutional framework of the Grand-Duchy of Baden in the 18th and 19th century and the Security of Property Rights

This chapter analyzes the basic differences of the formal administrative and legal rules and processes of the Grand-Duchy of Baden between the late 18th and 19th century. Together these factors determine transaction costs and risk perception of individuals. But the formal institutional framework is not the only determinant of a country's growth perspectives. The actual implementation of the latter through state officials is also of great importance. Therefore, this chapter additionally discusses the role of state officials in the daily application of the formal institutional framework.

1.1. The 18th Century State

Analyzing the formal institutional framework of the 18th century state is difficult, mainly because the state known as the Grand-Duchy of Baden did not exist during the 18th century. The Grand-Duchy was the result of the integration of several territories in the course of the *Reichsdeputationshauptschluss* and the Napoleonic Wars.⁵⁷ The core part of the later Grand-Duchy consisted of the margraviate of Baden with its center of power around Karlsruhe in the north and Lörrach in the south represented by the grey shaded areas in figure 1.1.⁵⁸ Further important parts of the later Grand-Duchy were the parts on the right bank of the Rhine of the Palatinate and Further Austria. Because the margraviate was the most important part of the later Grand-Duchy, this chapter concentrates on this entity.⁵⁹

In total, one can argue that the 18th century core-territories of the later Grand-Duchy were all institutionally poorly developed. The small margraviate, for example, consisted of several disconnected territories around Karlsruhe in the north and Lörrach in the south. In the west and the east the territory adjoined the banks of the Rhine River and the Black Forest, respectively. The territories were ruled from Karlsruhe by the margrave and his central agencies.⁶⁰

⁵⁷ For an overview of the political history of Baden see *Schwarzmaier*, Handbuch.

⁵⁸ The margraviate was itself the result of the integration of the territories of the catholic line of Baden-Baden and the protestant line of Baden-Durlach in 1772.

⁵⁹ Because of the poor state of its institutions, the term "entity" is more applicable than the term "state" which would intend a more sophisticated institutional framework.

⁶⁰ For the organization of the 18th century state see *Grube*, Vogteien, Ämter, Landkreise, pp. 98–102 and *Eibach*, Staat, pp. 22-24; 31-33.

Figure 1.1: The Territory of Baden around 1800



Source: (Grube, Vogteien, Ämter, Landkreise, p. 9)

There were three distinguishable institutions: the *Rentkammer* (responsible for financial issues), the *Hofrat* (the highest court in the territory) and the *Geheimrat* (or Privy Council), the advisory body of the prince which also had administrative, financial and judicial powers.⁶¹ These institutions were hardly specialized and heavily dependent on the prince's power. For administrative purposes, the territory was divided into districts administered by state officials.⁶² These local magistrates were not only responsible for administrative issues – like public health, trade concessions, control of market rules, and other regulations concerning the daily life of subjects – but also for crime fighting and judicial issues at the first instance. Yet, administration and legal practice of the 18th century Baden lacked of clearly defined, comprehensive rules for everyday-practice in the districts. As a result of these drawbacks decision processes were not transparent and legal security was low during the 18th century.

In the field of administration the main problem was the bulk of regulations produced by the absolute state.⁶³ The aim of the absolute ruler was to control and regulate every aspect of his subjects' daily lives. Therefore rulers produced a mass of regulations, called *Policeyordnungen*. The growing mass of regulations was hard to overlook; especially because of a missing ledger which would have bundled all regulations.⁶⁴ Local magistrates dealt with this problem by ignoring the official regulations and applying local customs and ad-hoc solutions instead.⁶⁵ Because such solutions were not codified and depended strongly on the actual distribution of power between district magistrates and local elites, the outcome of an administrative decision was not secure.

⁶¹ Yet, it was not uncommon that a Privy Councilor was also a member of the Hofrat or the Rentkammer.

⁶² During the 18th century there existed several names for state officials that governed a district. In fact, almost every district had a slightly different organization including different names and rights for state officials. For the purpose of simplification I will use the terms state official or (local) magistrate for all local officials during the 18th century.

⁶³ Cf. for the following: *Lenel*, Beiträge, pp. 23–29 and *J. Brewer/ E. Hellmuth (ed)*, Rethinking Leviathan. The eighteenth-century state in Britain and Germany, Oxford 2004, p. 11 as well as the articles of *C. Dipper*, Government and Administration. Everyday Politics in the Holy Roman Empire, in: *J. Brewer/ E. Hellmuth (ed)*, Rethinking Leviathan. The eighteenth-century state in Britain and Germany, Oxford 2004 and *D. Klippel*, Reasonable Aims of Civil Society: Concerns of the State in German Political Theory in the Eighteenth and Early Nineteenth Centuries, in: *J. Brewer/ E. Hellmuth (ed)*, Rethinking Leviathan. The eighteenth-century state in Britain and Germany, Oxford 2004, pp. 71–98.

⁶⁴ Thus district magistrates created their own ledgers. The first useful compilation was published by the magistrate Gerstlacher at the end of the 1770's. An official ledger of all laws and regulations was yet not prepared after 1800. See *Lenel*, Beiträge, pp. 23–29.

⁶⁵ Such drawbacks are also described by *E. Gothein*, Wirtschaftsgeschichte des Schwarzwaldes und der angrenzenden Landschaften, New York 1970, p. 737 and *Roth*, Rechtsverhältnisse, pp. 37; 66–68. The same drawbacks are also reported for other German territories, e.g. for Saxony (cf. *F. Hartung*, Das Großherzogtum Sachsen unter der Regierung Carl Augusts 1775–1826, Weimar 1923, pp. 204–206).

Legal institutions were also weak and favored intransparent and arbitrary decision making processes as well as the fragmentation of markets.⁶⁶ During the 18th century three different law traditions were in use. Besides the *Landrecht*, a customary law and the natural law were used. The *Landrecht* was a written law code and mainly build on the unwritten customary law but was not identical with the latter. The *Landrecht* was first published in 1622, but over the years a bulk of by-laws was enacted which partly contradicted the original code. Thus, the law was open to the interpretation of the judges who could hardly be controlled by the parties, because the *Landrecht* was written in Latin. The customary and the natural law on the other side were not codified. As a result, these two traditions were subject of an active scientific debate, which meant that there were several interpretations. The lack of clearly defined legal principles led to severe differences in the actual legal practice of the districts. As in the case of administrative rules district magistrates often applied a mixture of the *Landrecht* and local customs. Yet, this mixture could change from case to case.⁶⁷ This behavior made the outcome of a legal claim within the district unpredictable.

The lack of a code of legal procedure made the problem of intransparent decision-making processes even worse. District magistrates, for example, did not have to justify their judgments, which enlarged their scope of action. The high uncertainty about the outcome of a decision-making process, e.g. a building permission or a legal claim, thus increased transaction costs within the commune and hampered market transactions as well as capital investment in productivity-enhancing technologies.⁶⁸

A striking example for the insecurity about the outcome of a decision making process is the following incidence that occurred near Lörrach during the year 1775. Back then, a blacksmith was deterred from building a forge, although he had an official building permission. Nevertheless, the local magistrate countermanded the permission after he was bribed by the smith's neighbor who wanted to prevent the construction of the forge. Even an appeal to the prince was unsuccessful, because the Smith's petition was delayed by bribed clerks.⁶⁹ Partial behavior of district magistrates and other state

⁶⁶ Cf. for the following *Lenel*, *Beiträge*, pp. 23-29; 83-84; 92-95 and *Schubert*, *Französisches Recht*, pp. 193–195.

⁶⁷ *Eibach*, *Staat*, p. 60.

⁶⁸ Legal fragmentation and the use of customary rights also favored market fragmentation. Because of different rules, running a business in another town or village was aggravated. Customary rules often also excluded foreigners totally from the „domestic“ market.

⁶⁹ Information about this incidence comes from an anonymous letter send to the Hofrat. The letter was written in Greek. One can therefore follow that the author had a university degree. He furthermore possessed detailed knowledge about the local conditions. This suggests that the

officials was, however, not uncommon. There are also examples from other parts of the territory that later became the Grand-Duchy as well as from other German territories where state officials took bribes in exchange for granting personal benefits.⁷⁰ But district magistrates also used the power they received from the intransparent decision making mechanisms described above to blackmail monetary and non-monetary benefits from subjects.

Intransparent administrative and legal rules and processes were certainly one reason for the high incidence of corruption during the 18th century; but not the only one. The rules that governed remuneration and responsibilities also set up incentives to engage in corrupt behavior. During the 18th century, district magistrates were relatively independent from their employers, because of two reasons:

First, remuneration was mainly paid in kind and not in cash. That is, district magistrates were paid with a legal claim on taxes, dues, court charges and administrative fees paid by the subjects. Normally the part of remuneration that was paid directly or indirectly by the subjects ranged from 45 to 90 percent. A striking example for such an arrangement is the remuneration that the *Obervogt* of Triberg – the district magistrate representing the government of Further Austria – received during the year 1753. The components of his remuneration are depicted in table one. The main part of his remuneration came from the participation in administrative fees and court charges followed by payments in kind and revenue sharing of incomes from dues and taxes. All these components of remuneration were paid by the subjects of the district that was administered by the *Obervogt*. Only a very small part of remuneration was paid by the government. If one only counts the fixed monetary income of the *Obervogt*, the share of the government's part in his remuneration was 7.6 percent. But even when one adds the subsidy to the *Obervogt's* housing costs, the government's share only increases to 9.6 percent of total remuneration (see table 1.1).

author himself had a position within the administration of the magraviate. In this case one cannot exclude that the letter was intended to provide the author with a political or personal benefit, e.g. through the elimination of a rival for a seat in the *Hofrat* or the Privy Council. The letter can be found in the Generallandesarchiv Karlsruhe, section 120, fascicle 1183 (thereafter cited as GLA 120/1183).

⁷⁰ For Baden see GLA 229/353. The fascicle contains a letter of the baron of Adelsheim to the elector of the Palatinate in which he complains about the corruption of one of his magistrates.

Table 1.1: Annual Remuneration of the Obervogt of Triberg in 1753 (in fl.)

Monetary Income	58.20
Subsidy to housing costs	20
In Kind	142.26
Participation in the revenue of dues and taxes	130
Administrative fees and court charges	460
Total	810.46
Monetary income in (%) of Total	7.2

Source: *Hohkamp*, *Herrschaft*, p. 41.

Second, district magistrates were hardly controlled through the higher administrative organizations. Although members of the central agencies visited the countryside, they were not interested in supervising local districts. The main focus of these visits was to record the country's resources.⁷¹

On the other hand, the rules that governed remuneration made district magistrates dependent on local elites whose co-operation was needed when the former would like to receive income from their legal claims against the district's subjects.⁷² Therefore, it was not unusual that district magistrates helped local elites to embezzle taxes or to preserve or introduce economic privileges from which the latter received a monetary or non-monetary benefit.⁷³ The lack of control through the central agencies supported this behavior. Corrupt activities were seldom detected and even when drawbacks were reported to higher agencies, district magistrates had to fear no consequences. The latter was one of the main complaints of Ernst Sigismund Herzog a member of the *Rentkammer* and later director of the *Hofrat*. In 1786 Herzog anonymously published a

⁷¹ Cf. *Holenstein*, "Gute Policey", pp. 309–312. A reporting system that was established in the last third of the 18th century failed, because state officials refused their cooperation to prepare the demanded periodical reports about several important administrative issues. See: pp. 254-255, 259-260 and 272.

⁷² Cf. *Hohkamp*, *Herrschaft* and *Mahlerwein*, *Herren im Dorf*.

⁷³ For Baden see: *Holenstein*, "Gute Policey", pp. 468-472 and 478. The interdiction to accept bribes and presents from communes in the first half of the 18th century can also be interpreted as a hint that collusion between district magistrates and communes was common in Baden. Cf. GLA 74/1601, 1692 and 2823. David Sabeau reports cases of collusion for the contiguous Duchy of Württemberg. See *D. W. Sabeau*, *Kinship in Neckarhausen, 1700 - 1870*, Cambridge 1998, pp. 49–52. For Hesse and Rhine-Hesse see *Gottschalk*, *Alkoholische Gärung* and *Mahlerwein*, *Herren im Dorf*, pp. 332; 368, respectively. For a general treatment of the topic see: *S. Ogilvie*, *The State in Germany: A Non-Prussian View*, in: *J. Brewer/ E. Hellmuth* (ed), *Rethinking Leviathan. The eighteenth-century state in Britain and Germany*, Oxford 2004, pp. 167–202.

collection of fictive letters in which he accused the majority of district magistrates and state officials to hush up any drawbacks that occur in the administration of the country. In his view this behavior could be explained with the officials' snugness and slothfulness.⁷⁴

Another effect of the 18th century remuneration scheme was the high insecurity about the timing and the actual level of income. Problems of liquidity also arose, because magistrates were paid a quarterly instead of a monthly remuneration. Additionally, magistrates often had to pick up remuneration in kind at the manorial depositories.⁷⁵ Such problems of liquidity often were an incentive to embezzle taxes, asking subjects for additional rent-payments, higher office fees or court charges as well as to accept bribes or to abuse administrative power in order to extract higher rent payments.⁷⁶

The structure of remuneration furthermore set incentives to focus on such duties which allowed the collection of fees, while other, less profitable duties – like fighting crime – were neglected.⁷⁷ Hence, district magistrates did not internalize positive external effects that would have increased (physical) security of property rights.

The 18th century institutional framework, including formal administrative and legal rules as well as rules that governed the incentives for district magistrates to misuse and disregard these formal rules was hence relatively disadvantageous for economic growth. Intransparent decision mechanisms were used by district magistrates in order to grant themselves or their networks a monetary or non-monetary benefit. This behavior discouraged those individuals who were not network members to engage in economic activities by increasing the uncertainty about the security of property rights.⁷⁸

⁷⁴ See *E. S. Herzog*, *Briefe über die Verfassung der Markgrafschaft Baden 1786*, pp. V–XXIV. Although the letters were published anonymously and Herzog always has denied his authorship, he was well known as the author of the "Briefe". See: *B. Ottnad*, *Badische Biographien*, Stuttgart 1982, pp. 365–366.

⁷⁵ Cf. *Krapp*, *Die badische Ämterorganisation*, pp. 60–66.

⁷⁶ These drawbacks, especially the practice of asking for higher administrative fees, were prevalent in most of the German countries. E.g. see *Agna*, *Der Amtmann im*, pp. 180–182 and *G. von Schmoller*, *Der deutsche Beamtenstaat vom 16.-18. Jahrhundert*, in: *Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft im Deutschen Reich*, 1894, pp. 695–714, here pp. 698–700. For Hesse see *Brakensiek*, *Fürstendiener - Staatsbeamte - Bürger*, p. 162. For Baden see GLA 74/1601, 1692 and 2823, GLA 229/353, *Eibach*, *Staat*, pp. 23; 41, *Gothein*, *Wirtschaftsgeschichte des Schwarzwaldes*, p. 737 and *Hohkamp*, *Herrschaft*, pp. 41–45. These practices were possible, because the regulation of administrative fees often was unknown to the public.

⁷⁷ Cf. *Eibach*, *Staat*, p. 23.

⁷⁸ The institutional framework of the 18th century state was thus extractive and designed to solve distributional conflicts rather than to stimulate economic growth. For the theory of distributional

1.2. The 19th Century State

The 18th century institutional was reformed at the turn of the 19th century. The defeat of the Holy Roman Empire through Napoleon served as a promoter of reform.⁷⁹ As a result of the *Reichsdeputationshauptschluss* in 1803 and the alliance with Napoleon in the following wars the small margraviate quadrupled in size and population forming the Grand-Duchy of Baden. In the period between 1802 and 1815 the territory of the country grew from 3.900 km² to 15.000 km². Likewise the country's population increased from 250,000 inhabitants to one million.⁸⁰ The new country incorporated parts of the Palatinate and Further Austria as well as myriads of smaller secular and clerical territories. As a result, the princes of Baden for the first time ruled over a cohesive territory that was defined by the Lake Constance in the south, the Rhine River in the West, the Black Forest in the east and the Odenwald in the north-east. This territory is illustrated by the grey shaded areas in figure 1.2.

The fast and huge increase of territory made institutional reforms necessary.⁸¹ Administrative and legal institutions were reformed in 1809 and 1810, respectively. The reform of the organization of administration was undertaken by minister of state Sigismund von Reitzenstein⁸² who introduced a three level hierarchy:⁸³ Reitzenstein rearranged the old districts and formed 118 new districts called *Ämter*.⁸⁴

effects of institutions see: S. Ogilvie, 'Whatever is, is right'? Economic institutions in pre-industrial Europe, in: *The Economic History Review* 4, 2007, pp. 649–684. See also Ogilvie, *State in Germany* and S. Ogilvie, *State corporatism and proto-industry. The Württemberg Black Forest, 1580 - 1797*, Cambridge 1997. The term extractive institutions was framed by Acemoglu and Robinson. See: *Acemoglu/Robinson, Why nations fail*

⁷⁹ This argument was first made by Weis: E. Weis, *Der Einfluß der Französischen Revolution und des Empire auf die Reformen in den süddeutschen Staaten*, in: *Francia*, 1973, pp. 569–583. More recently Acemoglu and his co-authors have made a similar claim, although they concentrate their argument on those states that were directly controlled by Napoleon. See: D. Acemoglu/D. Cantoni/S. Johnson/J. Robinson, *The Consequences of Radical Reform: The French Revolution*, in: *American Economic Review* 7, 2011, pp. 3286–3307.

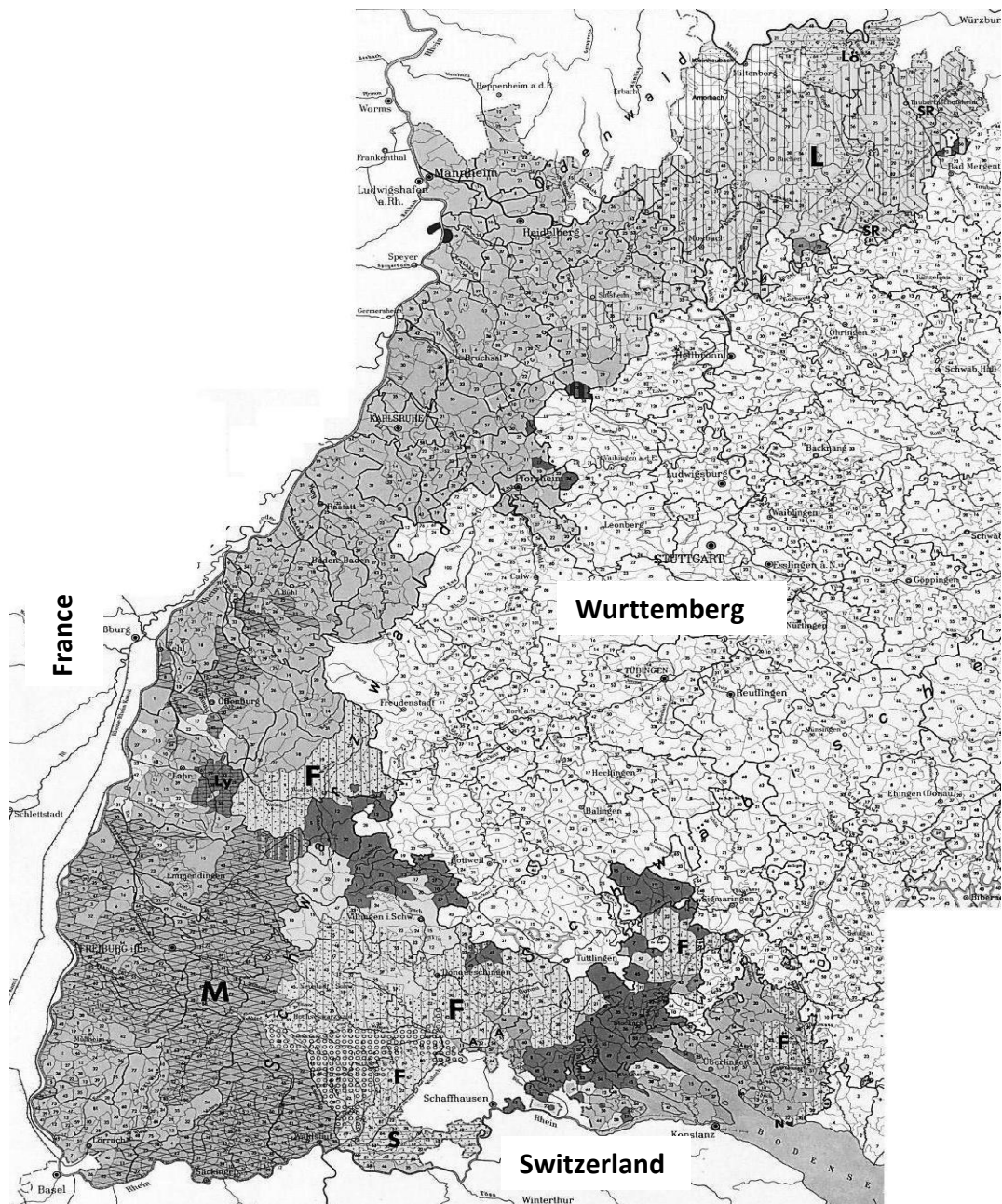
⁸⁰ See H. Fenske, *Allgemeine Geschichte Südwestdeutschlands im 19. Jahrhundert*, in: H. Schwarzmaier (ed), *Handbuch der baden-württembergischen Geschichte. Vom Ende des Alten Reiches bis zum Ende der Monarchien*, Stuttgart 1992, pp. 1–24. For a more detailed overview of the political development on the early years of the 19th century cf. also: Schwarzmaier, *Baden: Dynastie - Land* and H.-P. Ullmann, *Baden 1800 bis 1830*, in: H. Schwarzmaier (ed), *Handbuch der baden-württembergischen Geschichte. Vom Ende des Alten Reiches bis zum Ende der Monarchien*, Stuttgart 1992, pp. 25–78.

⁸¹ For a short overview of these reforms see: Ullmann, *Baden 1800 bis 1830*.

⁸² Sigismund Karl Johann von Reitzenstein was born in Nemmendorf February 2, 1766. He died in Karlsruhe March 5, 1847. For a short biography, see H. v. Barmeyer-Hartlieb Wallthor/K. G. A. Jeserich/H. Neuhaus, *Persönlichkeiten der Verwaltung. Biographien zur deutschen Verwaltungsgeschichte 1648-1945*, Stuttgart 1991, pp. 79-83.

⁸³ Cf. for the administrative reforms Knemeyer, *Regierungs- und Verwaltungsreformen*, pp. 146–162, Schwarzmaier, *Baden: Dynastie - Land*, pp. 162-176; 198-203 and Lee, *Politics of harmony*. Andreas was the first who described the reforms at the beginning of the 20th century (cf.

Figure 1.2: The Grand Duchy of Baden during the Napoleonic Area



Source: (Kerkhoff/Miller/Beck, Historischer Atlas von Baden-Württemberg 1972-1988), vol.1 map VII.

These new administrative units were smaller than the old districts and should consist of about 7000 inhabitants.⁸⁵ As during the 18th century, the districts were made responsible for civil and criminal proceedings as well as for administrative issues like

Andreas, Aufbau). Before Reitzenstein, Johann Nepomuk Brauer introduced several reorganizations of the administrative structure. Yet, his organizational structures were not permanent and were replaced by Reitzenstein's organization in 1809. Cf. for example *Krapp, Die badische Ämterorganisation*.

⁸⁴ The number of *Ämter* was reduced later on.

⁸⁵ However, this number was seldom achieved and many *Ämter* consisted of more than 7000 inhabitants.

public security, public health, administration of poor relief, the promotion of agriculture and industry, granting trade concessions, the supervision of public works, taxation and the financial issues of the communes in their district. Above the districts Reitzenstein created a new intermediary administrative level called *Kreise* or circles. The *Kreise* should serve as the link between the central agencies and the districts by communicating instructions to the districts, collecting and summarizing information from the districts as well as by controlling the work of district magistrates, called *Amtmänner*. At the top of the new administration were the ministries that replaced the central agencies of the 18th century. The ministries were more specialized than the collegial working councils and the *Rentkammer*. Reitzenstein introduced six ministries: the ministry of interior, finance, justice, foreign affairs and war. Their work was coordinated by the ministry of the state which was directly controlled by the Grand-Duke.

In contrast to the 18th century, the 19th century organization clearly defined the tasks of the different administrative stages. That is, administration was from now on organized by clearly defined and straightforward rules and not by an unmanageable and contradicting set of by-laws. Thus, in theory the outcome of a decision making process became more secure. By introducing an all-embracing organizational structure Reitzenstein also abolished the myriads of local customs and rules ending market fragmentation from this source.

Legal institutions were reformed as well. As a result of the *Reichsdeputationshauptschluss*, the country inherited territories with different law traditions. Thus, fragmentation of the law skyrocket after 1803 and made a reform of the legal system indispensable. This necessity together with slight French pressure caused Johann Nepomuk Brauer,⁸⁶ the predecessor of Reitzenstein in the office of minister of state, to introduce a new *Landrecht* that mainly adopted the Code Napoleon in 1809.⁸⁷ On one side the new law introduced clearly defined property rights – that is, clearly defined rights about resources and the right to write contracts on them. The new law also implemented more transparent decision mechanisms by abolishing the three old law traditions and replacing them with clearly defined principles which made the

⁸⁶ Brauer was born in Büdingen (January 14, 1754) and died in Karlsruhe (November 17, 1813). For a short biography see v. *Barmeyer-Hartlieb Wallthor/Jeserich/Neuhaus*, *Persönlichkeiten der Verwaltung*, pp. 61-64).

⁸⁷ Cf for the introduction of the code Napoleon: *E. Fehrenbach*, *Vom Ancien Régime zum Wiener Kongreß*, München 1981, *J. Federer*, *Beiträge zur Geschichte des badischen Landrechts*, Freiburg 1947, *N. J. Gross*, *Der Code Civil in Baden. Eine deutsch-französische Rechtsbegegnung und ihr Erbe*, Baden-Baden 1993¹ and *Schubert*, *Französisches Recht*.

outcome of a trial more predictable. Additionally, the introduction of the new civil law formally abolished local customs theoretically ending uncertainty and market fragmentation from this source.

The reform of administrative and legal rules was accompanied by an exact definition of district magistrates' duties and obligations. Furthermore there were stricter guidelines in respect to administrative processes and their professional conduct. These guidelines included e.g. the obligation to periodical report about several issues, rules how to organize the district's depository as well as formal guidelines for civil trials.⁸⁸ The latter defined the rights of the parties, confined the power of magistrates by allowing lawyers and introduced more transparency by making civil trials public.⁸⁹ District magistrates were furthermore advised to show an exemplary way of living, e.g. abstaining from alcohol abuse and running into debts, and to treat citizens in a calm and politely way.⁹⁰ However, the standardization of formal administrative processes as well as the implementation of rules of professional conduct took a long time. First attempts in this direction were made with the *Hofratsinstruktion* of 1794; further regulations were added in the reform period around 1809.⁹¹ Yet, the reformer Reitzenstein was dismissed in 1810⁹² and could not pass implementation rules for his new organization of the administration. The same is true for the legal system. Although the new code of civil law was introduced in 1810, this law was not accompanied by guidelines of how to organize a process. Detailed implementation rules therefore did not follow before the 1830's.⁹³ In the case of criminal law the situation was even worse. This part of the law was not reformed before 1852. Then the reform, however, included already practical guidelines for the criminal process which ameliorated legal security of the accused.⁹⁴

⁸⁸ Cf. *Eibach*, Staat, pp. 54–55. The guidelines for civil trials are discussed in more detail by *Keller*, Die badische Zivilprozessordnung.

⁸⁹ Cf. *Keller*, Die badische Zivilprozessordnung.

⁹⁰ The government repeated these instructions for several times since the late 18th century. However, these ideas are best summarized in the instructions for the supervision of district magistrates that were enacted in 1835. The instruction can be found in GLA 233/30343 (Ministry of interior to ministry of state, Karlsruhe, January 20, 1835).

⁹¹ *Großherzogtum Baden*, Hofratsinstruktion 1794

⁹² He became the victim of an intrigue. See: v. *Barmeyer-Hartlieb Wallthor/Jeserich/Neuhaus*, Persönlichkeiten der Verwaltung, pp. 79–83.

⁹³ The guidelines for civil trials were enacted in 1830, the rules how to organize the depository followed not before 1839. A concise formulation about the professional conduct of district magistrates was not enacted before 1835.

⁹⁴ The process was now open for the public and lawyers received more competencies. This reduced the power of the judges to deliver an arbitrary judgment. See *Moses*, Kriminalität in Baden, pp. 43–46; 50–53; 59–60.

At last, the rules and regulations that governed district magistrates' employment and remuneration were reformed. An important step in this regard was the Civil Service Reform Law of 1819.⁹⁵ The law basically addressed all state-employees with an academic (e.g. judicial) education, making them "Beamte" or civil servants. For district magistrates had to hold a degree in law, they became a part of the corps of civil servants. The Civil Service Reform Law thus excluded candidates who only had clerical training leading to a higher professionalization of the bureaucracy. The law introduced three important innovations: first, civil servants' social status was increased, e.g. by making (verbal) attacks on civil servants a *lèse-majesté* and by introducing uniforms which was a symbol of power, because the Grand-Duke also appeared in uniform.⁹⁶ Second, the law granted pension payments and widow's allowance to all civil servants.⁹⁷ This also was a social privilege, because civil servants were one of the few groups at this time which benefitted from these innovations. Third, the law defined civil servants' duties against the state and introduced a set of sanctions for the case of a neglect of duty. Furthermore, the state had the right to relocate, retire or reactivate his employees at his will.

The methods and terms of payment were also reformed during the second decade of the 19th century.⁹⁸ Participation in office fees, court charges, taxes and other dues was abolished between 1809 and the early 1820's.⁹⁹ Payments of the communes and remuneration in kind were abolished during the same period, as well. In return a district magistrate would from now on receive a fix cash payment by the Grand Duke.

These reforms had three effects: First, district magistrates were from now on more dependent on their employer – the prince and his central government. They faced clear rules of professional conduct and had to obey to formal administrative processes. If they

⁹⁵ A first civil service reform law was enacted in 1809. It was, however, annihilated during the same year. The Reform of administration demanded the relocation and retirement of many magistrates which was easier to implement without the privileges granted in the 1809 law. A new civil service law was introduced in 1819. For the history of the civil service reform laws see *Wunder, Die Badische Beamtenschaft*.

⁹⁶ Cf. *B. Wunder, Privilegierung und Disziplinierung. Die Entstehung des Berufsbeamtentums in Bayern und Württemberg (1780 - 1825), München 1978*¹.

⁹⁷ In fact, granting pension payments was the only surviving feature of the short-living first Civil Service Law of 1809. For a more detailed description of pension payments and widow's allowance see chapter 2.

⁹⁸ Cf. for the following *Eibach, Staat*, p. 41 and *Wunder, Die Badische Beamtenschaft*, pp. 608–611.

⁹⁹ The November-Edict of 1809 (reform of administration) abolished the participation in office fees for all newly employed magistrates. However, magistrates who received benefits at the time of the passage of the edict should still procure their granted office fees. Therefore, abolishing of the participation of fees took until the 1820's when the last recipients of office fees were retired. Cf. *Eibach, Staat*, p. 41.

neglected these obligations, the government could sanction its employees, e.g. by relocating them to another, less attractive position or even by dismissing them. In this case, a Civil Servant would also have lost his claim on pension payments and widows' allowance. Such a practice, however, made more detailed controls necessary. Therefore a control system was build up in which the *Kreise* should supervise the performance of district magistrates in regard of the adherence to formal administrative processes and the respect of rules of professional conduct. Supervisors should control district magistrates' work by assessing their reports to the supervisory institutions. Because this system of control proved to be inoperable, it was replaced by a system of personal visitations during the 1830's. Another mean of control was the establishment of the *Gendarmerie*, a security police force. The members of the police forces reported the number of individuals they arrested to the ministry of interior. Given these reports, the ministry could control if district magistrates actually started an inquiry.¹⁰⁰ Besides of stricter rules, closer control and more options to sanction district magistrates, there was a further reason which made magistrates dependent on the government. Since the early 19th century the government was the source of the magistrates' power by increasing his social status, especially by granting them an exceptional position in the civil and criminal law.

The second effect of the reforms is connected with the first. Besides *increasing* the dependency on their employer, the reforms also *reduced* the dependency on local elites. Remuneration and pensions were now fully paid by the state. Furthermore, every claim was paid in money at fixed intervals. Therefore, problems of liquidity could not occur anymore. At last, uncertainty about the actual level of income also vanished. Thus, the incentives to collude with local elites, to accept bribes, or to blackmail subjects did not longer exist.

District magistrates now had no incentives to concentrate only on duties from which they could earn a considerable amount of fees. Indeed, remuneration was made more and more dependent on a magistrates' performance in regard to the formal administrative processes and the respect of the rules of professional conduct.¹⁰¹ Magistrates therefore internalized positive external effects they created through their sound administration of a district.

¹⁰⁰ For the role of the *Gendarmerie* cf. B. Wirsing, Die Geschichte der Gendarmeriekorps und deren Vorläuferorganisationen in Baden, Württemberg und Bayern. 1750-1850, Konstanz 1990, pp. 160; 164.

¹⁰¹ For a more detailed argument see chapter three.

The reforms of the 19th century thus introduced more clearly defined rules as well as more transparent decisions mechanisms, including stricter guidelines for district magistrates. The rules of employment and remuneration were also altered in a way that increased the professionalization of the bureaucracy and confined incentives to engage in corrupt actions. Hence, the reforms should have reduced transaction costs and increased legal security creating an environment more conducive to growth than during the 18th century.¹⁰² However, there is one qualification that has to be made. Guidelines that regulated the implementation of the new laws as well as the system of controls were not effectively in work until the 1830's. A sound working of the new institutional framework during the second and third decade of the 19th century was therefore not possible. Missing implementation rules granted district magistrates a high scope of action comparable to the 18th century and forced to improvise as during the previous century. As a result ad-hoc decisions remained the rule and legal practice still differed between districts. That is, local customs still played an important role in the administrative and legal practice of the districts. As in the preceding century, this environment favored intransparent and arbitrary decisions.¹⁰³ This is not surprising given the fact that there was no change of the workforce directly after the reforms of the early 19th century. Indeed, the workforce did not change considerably before the 1830's when a large number of older district magistrates were retired and replaced with younger successors.¹⁰⁴ The new administrative and legal rules therefore had to be implemented by employees who were used to totally different work customs. This was especially true for those district magistrates who formerly worked in the small clerical and secular territories.¹⁰⁵ The first generation of district magistrates that worked under the new administrative and legal rules showed severe faults in the implementation of the new institutional framework because of two reasons:

First, there were magistrates who were intellectually not able to understand and to implement the new institutional framework. This was often the case with those magistrates who were taken over from smaller territories.¹⁰⁶ A striking example is the

¹⁰² In the words of Acemoglu and Robinson that means that the reforms have created an inclusive institutional framework (*Acemoglu/Robinson, Why nations fail*). North, Wallis and Weingast speak of an Open Access Society (*North/Wallis/Weingast, Violence*).

¹⁰³ *Eibach, Staat*, pp. 34-36; 54-55; 60-62; 81-82. See also *J. R. von Meldegg, Aus den Erinnerungen eines badischen Beamten, Freiburg 1872*, pp. 24-26; 52-53.

¹⁰⁴ *Eibach, Staat*, pp. 82-83.

¹⁰⁵ The Reichsdeputationshauptschluss prescribed that Civil Servants of the dissolved territories had to be taken over by the governments which inherited the territory. This also included pension obligations. The latter were a high burden of the states' budgets in the coming decades.

¹⁰⁶ Cf. *Eibach, Staat*, pp. 56-58.

case of district magistrate Christ who was retired in the late 1830's, because he was apparently unable to catch legal problems at all. As a result a simple inheritance claim that could have been solved within three month was retarded by six years.¹⁰⁷ With a similar motivation the leading magistrate¹⁰⁸ of the district of Waldshut asked for the retirement of his employee, district magistrate Scheef. Before he was taken over as a district magistrate in the Grand-Duchy of Baden, Scheef worked in a small clerical territory. In his new position he was responsible for legal issues. However, he proved totally incompetent in this field.¹⁰⁹ At last, there were some magistrates who did not only lack knowledge of the new administrative and legal rules and had problems to implement them but also did not possess basic literal skills.¹¹⁰

Besides the intellectual incompetence to understand and to implement the new administrative and legal rules, district magistrates also denied the implementation of the latter, because they felt disempowered. While district magistrates had a high scope of action during the 18th century thanks to contradicting regulations and unclear defined processes, the reforms of the 19th century took a lot of this power by defining administrative processes and rules of professional conduct. The disempowerment of district magistrates was reflected by the new organization of the administration. While district magistrates were only responsible to the prince during the 18th century, the introduction of the *Kreise* as a new supervisory institution also relegated district magistrates within the hierarchy of the administration. Many older district magistrates who were used to the pre-reform customs did not want to accept their degradation and ignored the new administrative processes and rules of professional conduct whenever they could.¹¹¹ This behavior can be best illustrated by an observation made by district magistrate Joseph Reichlin von Meldegg. In his memoirs he reports, that during his early years in the administration – von Meldegg entered the Civil Service in 1829 – older

¹⁰⁷ See personal file of district magistrate Philipp Josef Christ. GLA 76/1362.

¹⁰⁸ Most districts were staffed with more than one magistrate. In this case magistrates divided the administrative and legal duties among each other. Nevertheless, one magistrate was declared to be the man in charge who supervised the second district magistrate. This magistrate was called leading magistrate (*Amtsvorstand*). For a more detailed description of the hierarchy see chapter three.

¹⁰⁹ See personal file of district magistrate Josef Scheef. GLA 76/6689 (District Waldshut to ministry of interior, Waldshut June 31, 1835).

¹¹⁰ See the personal file of district magistrate Felder. The assessment of Felder's skills is from his supervisor, the leading district magistrate Dreyer. GLA 76/2197 (District Waldshut to ministry of interior, Waldshut, June 8, 1841).

¹¹¹ *Eibach*, Staat, pp. 56–58.

district magistrates dumped letters and instructions of superior agencies when they received too many of them.¹¹²

As Joachim Eibach reports in his book, district magistrates more and more adhered to the formal administrative processes and rules of professional conduct since the 1830's. On the one hand, this may be a result of stricter and more clearly defined guidelines that were enacted since the 1830's and a generational change in the corps of district magistrates. Although this explanation surely plays a role, it may be short-sighted, because it ignores the internal dynamics of the administration; e.g. the interaction between the supervisory agencies at the intermediary and central level on the one side and district magistrates on the other side. For a more detailed explanation of how adherence to formal administrative processes and respect for the rules of professional conduct was achieved since the 1830's, an analysis of the staffing policy seems to be reasonable. Such an inquiry should concentrate on the incentives that motivated district magistrates to actually implement the new administrative and legal rules and processes. This analysis is undertaken in chapter two and three.

¹¹² *J. R. von Meldegg*, *Aus den Erinnerungen eines badischen Beamten*, Mannheim 1874, pp. 97–98.

2. Civil Servants' Living Standards in the Grand-Duchy of Baden, 1780-1913

2.1. Introduction

At the beginning of the 19th century Baden gained control over new territories. To rule its enlarged territories, the state introduced, even before Prussia, several legal and administrative reforms.¹¹³ In order to implement the new administrative and legal framework which established more clearly defined rules and rights and introduced more transparent decision mechanisms, the government built up a specialized Civil Service. This new organization was, unlike its 18th century predecessor, characterized by the professional education of its members and a stronger control through the prince.¹¹⁴ In return, it is argued, Civil Servants received a remuneration including old age pensions and widows insurance that ensured a good living¹¹⁵ and reflected social status.¹¹⁶ Yet, there are surprisingly few studies which actually test this hypothesis empirically.¹¹⁷ Hence, it remains unclear whether remuneration could actually guarantee a good living and reflected social status. Furthermore, we do not know whether a high and socially adequate remuneration was a new phenomenon of the 19th century. This chapter is a first attempt to fill the gap by estimating real living standards of district magistrates in Baden during the late 18th and the 19th century.

Existing studies about the living standards of Civil Servants often rely on anecdotic evidence¹¹⁸ or Abel's concept of corn wages.¹¹⁹ But corn wages are a very rough measure of well-being, because people did not consume corn but bread and other foodstuffs as well as consumer goods. Thus, using corn wages may distort the picture of Civil Servants' living standards. In this chapter, I will circumvent this shortcoming by introducing a consumption basket that reflects the needs of a member of the upper

¹¹³ See chapter one.

¹¹⁴ Cf. *Wunder*, Privilegierung und Disziplinierung.

¹¹⁵ *Wunder*, Privilegierung und Disziplinierung.

¹¹⁶ *Weber*, *Economy and Society*, p. 963.

¹¹⁷ E.g. *H.-J. Gerhard*, *Diensteinkommen der Göttinger Offizianten 1750 - 1850*, Göttingen 1978; *H. Henning*, *Die deutsche Beamtenschaft im 19. Jahrhundert. Zwischen Stand und Beruf*, Wiesbaden 1984 and *H. Kübler*, *Besoldung und Lebenshaltung der unmittelbaren preußischen Staatsbeamten im 19. Jahrhundert*, Nürnberg 1976.

¹¹⁸ See e.g. *Henning*, *Die deutsche Beamtenschaft*.

¹¹⁹ See e.g. *Kübler*, *Besoldung und Lebenshaltung*. An exception is *Gerhard* who constructs a price index composed of several basic goods to deflate nominal incomes. See *Gerhard*, *Diensteinkommen*. For the concept of corn wages cf. *W. Abel*, *Agricultural Fluctuations in Europe from the Thirteenth to the Twentieth Centuries*, London 1980.

class.¹²⁰ In contrast to the corn wage approach, my upper class consumption basket includes several foodstuffs as well as expenditure for sanitation, housing and luxuries and thus should reflect upper class consumption patterns more exactly.¹²¹

The remainder of the chapter is organized as follows: The next section describes the development of district magistrates' nominal incomes starting in the late 18th century. The third section focuses on the construction of the luxury consumption basket. The fourth section will then present real incomes of district magistrates in absolute terms. Furthermore the section compares district magistrates' living standards with those of other social groups and analyzes the evolution of district magistrates' incomes over time. The last section summarizes the results.

2.2. Nominal Incomes between 1780 and 1860

To compute real living standards, we need information about nominal remuneration. I therefore collected remuneration data since the late 18th century.¹²² Unfortunately, remuneration data are patchy until the first reform of remuneration in 1809 and suffer from the fact that some records only report parts of total remuneration. Most sources only report the margraves payments to his servants while others also include income from participation in office fees, court charges and dues. This leads to a distorted picture of the remuneration scheme in the late 18th century. As table 2.1 shows, a 18th century noble district magistrate earned between ca. 2400 and 3300 guilders (fl) per year (whether one accounts for office fees or not),¹²³ while Gothein reports the typically remuneration of a non-noble magistrate to be approximately 1600 fl including office

¹²⁰ The consumption basket is based on the work of Robert Allen. Cf. *R. C. Allen, The Great Divergence in European Wages and Prices from the Middle Ages to the First World War*, in: *Explorations in Economic History*, 2001, pp. 411–447.

¹²¹ The luxury consumption basket presented below will concentrate on material living standards. This may be criticized, because the modern definition of living standard also includes immaterial factors like health, education and happiness. One way to consider some of these factors would be the construction of a Human Development Index, as Andrea Wagner did for Germany in the first half of the 20th century. Cf. *A. Wagner, Ein Human Development Index für Deutschland: Die Entwicklung des Lebensstandards von 1920 bis 1960*, in: *Jahrbuch für Wirtschaftsgeschichte* 2, 2003, pp. 171–199. Yet, group specific data about these factors is hard to obtain. Therefore this article concentrates on material living standards.

¹²² During the 18th century remuneration included non-monetary components. I translated these non-monetary components into money-equivalents using the *Taxordnung*; i.e. the official regulation of prices for foodstuffs and other goods. Using the *Taxordnung* for converting non-monetary components of remuneration is feasible, because magistrates were bound to the prices of the *Taxordnung*.

¹²³ See Generallandesarchiv Karlsruhe section 120 fascicle 232; thereafter cited as GLA 120/232.

fees.¹²⁴ Hence, the income of the noble magistrate seems to be very high and not representative. In contrast, the 738 fl earned by the second *Amtmann* of the Oberamt Yberg¹²⁵ seem to be very low, given Gothein's report of typical remuneration. These inconsistencies in the records combined with a small number of surviving records make it difficult to reconstruct the 18th century remuneration scheme directly from the sources.

Table 2.1: Nominal Remuneration of District Magistrates in fl.

	fl
Noble magistrate (late 18 th c.)	3289 – 2383
City Manager (1819)	2800 – 2400
Magistrate (since 1819)	2400 – 1200
Noble magistrate (1808-1819)	2492 – 2192
Non-noble magistrate (1808-1819)	1827 – 1258
Non-noble magistrate (late 18 th c.)	1600 – 738
Junior civil servant (since 1819)	600 – 800
Junior civil servant (1808-1819)	600

Sources: GLA 120/232; 134/32, 57; 233/3387; *Gothein*, Johann Georg Schlosser, pp. 8–9 and *Wunder*, Die Badische Beamtenschaft, p. 615.

In 1808 government passed a new remuneration scheme.¹²⁶ The scheme granted a district magistrate at least 1258 fl including free lodging or a subsidy to housing costs of 200 fl. Total remuneration consisted of a cash payment and remuneration in kind. The remuneration scheme was structured into six classes. During the 18th century, a non-noble district magistrate could advance up to the fourth class from the bottom which gave him remuneration equal to 1822 fl. The fifth and the sixth class were connected with the title of an *Obervogt* and a *Landvogt*, respectively. While the position of an *Obervogt* (2192 fl) was opened for non-noble magistrates during the turn of the century, the position of the *Landvogt* (2492 fl) was reserved to the noble district magistrates. This discrimination between noble and non-noble district magistrates was even more distinct if one considers that the workload of non-noble magistrates was higher than that of

¹²⁴ This figure is reported by *E. Gothein*, Johann Georg Schlosser als badischer Beamter, in: *Badische Historische Kommission* (ed), Heidelberg 1899, pp. 1–109, here p. 8. However, it was possible to get a higher remuneration.

¹²⁵ See GLA 134/32.

¹²⁶ See GLA 233/3387.

their noble counterparts.¹²⁷ Consequently, there is little wonder that non-noble district magistrates resented the traditional promotion policies.¹²⁸

In 1819, a new non-discriminating hierarchical pay scheme based on full cash payment was introduced. Within the local Civil Service four different ranks can be distinguished. New entrants into the Civil Service, called junior Civil Servants (or *Assessor*) constituted the lowest rank. An *Assessor* assisted the more experienced district magistrates (*Amtmänner*). In this position a Civil Servant earned between 600 and 800 fl.¹²⁹ District magistrates could earn between 1200 fl and 2400 fl including free lodging or a subsidy to housing costs. Yet, this group can be divided between those magistrates who were only responsible for an individual branch of administration like civil and criminal justice or the police (called *zweiter Amtmann*) and the leading magistrates (*Amtsvorstand*) who were responsible for the administration of the entire district.¹³⁰ Naturally, the remuneration of the latter was higher, ranging between 1600 and 2400 fl.¹³¹ At last, leading magistrates in the few big cities of the country – called city manager (*Stadtdirektor*) – could even earn up to 2800 fl.¹³² However, such positions were rare which makes a maximal remuneration of 2400 fl the more realistic threshold. Taking 2400 fl as benchmark, maximal nominal incomes decreased by 3.7 percent, compared to 1808. For those magistrates who earned up to 2800 fl, maximal nominal incomes rose by 12.4 percent compared to 1808. Comparing the two lowest salary levels, nominal incomes slightly decreased by 4.6 percent. Thus, taking nominal values and the more realistic 2400 fl threshold into account, one has to assert that nominal incomes decreased at the beginning of the 19th century. Yet, there were two developments which we do not have considered so far: First, there was a larger improvement for non-noble magistrates,

¹²⁷ Districts were officially run by a noble *Landvogt* who was assisted by a non-noble magistrate. In reality, however, the non-noble magistrate administered the district without much help of the *Landvogt*.

¹²⁸ Cf. *Lenel*, Beiträge, p. 40.

¹²⁹ There were some candidates who entered the Civil Service directly on the intermediary level. Yet, the bulk of new employees entered at the local level.

¹³⁰ Some districts were staffed with only one district magistrate. In this case the magistrate would automatically become the leading magistrate. Other districts were staffed with two or more district magistrates. In this case, the magistrates divided the tasks among each other. Yet, one magistrate had discretionary power over the others. This magistrate was called leading district magistrate (*Amtsvorstand*).

¹³¹ The level of remuneration was also dependent on the size and population density of the district.

¹³² The remuneration scheme can be found in GLA 233/3387. Cf. also *Wunder*, Die Badische Beamtenschaft, pp. 613–615 and von *Müller*, Der öffentliche Dienst, p. 119. Wunder reports a remuneration scheme similar to the one cited above. This scheme displays only remuneration up to 2400 fl. Müller, in contrast, refers to another remuneration scheme which includes the position of a city manager who could earn up to 2800 fl.

because high positions in the hierarchy were not anymore reserved to noble magistrates; for this big group of district magistrates maximal nominal remuneration rose by 9.5 percent taken the 2400 fl income as benchmark and given that a non-noble magistrate could hold the position of an *Obervogt* right before the 1819-reform.¹³³

Second, government introduced pension payments and widow's allowances. Before 1819 there was no legal claim to pension payments and the number of granted pensions was small. The civil service reform law¹³⁴ of 1819 granted pensions to all civil servants who had been employed for more than five years. Under this scheme, civil servants could retire with 70 percent of their last remuneration after ten years of service. Benefits rose by one percentage point for each additional year. Thus, after 40 years a district magistrate could retire with his full remuneration.¹³⁵

In the course of time, government reduced the level of pension payments by a considerable amount in order to cut costs:¹³⁶ In 1831/32, benefits were reduced to 56 percent for seniorities between five and ten years. Pensions increased about 0.8 percentage points per annum for each additional year of service. Consequently, a district magistrate would be retired with 80 percent of his last remuneration after 40 years of service. This scheme remained in charge until 1890. Then, pension payments accounted for 30 percent after ten years of service, rose by 1.5 percentage points each additional year but were confined to a maximum of 75 percent of the servant's last remuneration.¹³⁷

¹³³ Compared to the 2800 fl threshold maximal nominal remuneration for non-noble magistrates even rose by 27.7 percent.

¹³⁴ For a brief history of the Civil Service Reform Law see *Wunder*, *Die Badische Beamtenschaft*, pp. 21–50.

¹³⁵ *Großherzogtum Baden*, *Staatsdienerpragmatik*, in: *Staats- und Regierungsblatt*, Karlsruhe 1819, pp. 11–18. The assessment base of pension payments was fix remuneration; that was remuneration without service loads, forage and subsidies in favor of the employment of clerks. Reasons for retirement were illness, physical infirmity and administrative reasons. If the reasons which led to retirement disappeared, the civil servant had to return to duty. Pension payments were not allowed to exceed 4000 fl. This last regulation was only important for the higher branches of the Civil Service whose remuneration and therefore their pensions exceeded the maximum of 2800 fl that a district magistrate could earn. For a brief history of Civil Service pensions see *Wunder*, *Die Badische Beamtenschaft*, pp. 21–36; 51–70. Cf. also von *Müller*, *Der öffentliche Dienst*, p. 55.

¹³⁶ In 1831 government declared 20 percent of civil servants' remuneration as functional. If the remuneration counted for more than 4500 fl even 100 percent of the amount exceeding 4500 fl was declared functional remuneration. The remaining 80 percent of remuneration were the new assessment base for pension payments. At first, this rule was applied for the fiscal years 1831/32 and 1832/33. However, the rule was prolonged each year and in 1844 it was implemented irrevocable. Cf. von *Müller*, *Der öffentliche Dienst*, pp. 65–66; 110.

¹³⁷ von *Müller*, *Der öffentliche Dienst*, pp. 64–65.

Widows insurance was first established in Baden in 1758. In its early stages, membership was not obligatory and the insurance had only little funds. As a result, pension payments fluctuated with the cash position of the insurance and usually paid only a pittance.¹³⁸ The shortly-lived first civil service law from 1809¹³⁹ made membership obligatory. Pensions ranged from 15 to 20 percent of the husband's remuneration.¹⁴⁰

Eight years later, in 1818, the constitution introduced a legal claim to widow's insurance which has to be interpreted as a significant improvement.¹⁴¹ In 1819 the civil service law improved widow's pension further by allowing a bonus of 50 percent of the regular pension which was entirely paid by the state instead of private contributions.¹⁴² Since then, widow's pension accounted for 25 percent of the servant's remuneration.¹⁴³ Obviously, the prince was now willing to pay families of Civil Servants a decent standard of living.

Pension payments and widows insurance, thus, both increased material well-being of district magistrates and their families after 1809/1819. Since the 1830's, after 40 years of duty a magistrate could retire with 80 percent of his last remuneration while a widow received 25 percent of the last remuneration of her late husband.¹⁴⁴ Although a benefit of 25 percent may seem modest, it has to be considered that widows often moved in with their son or son in law and thus had less expenditure.¹⁴⁵

¹³⁸ Payments were about 52 fl and 63 fl in 1775 and 1792, respectively. Cf. von Müller, *Der öffentliche Dienst*, pp. 24–26; Wunder, *Privilegierung und Disziplinierung*, p. 144 and *Windelband, Verwaltung*, pp. 307–308.

¹³⁹ The first Civil Service Law was enacted in the April of 1809 and abolished in November of the same year. The reason for the abolishment was a change in the position of the leading minister from Friedrich Nepomuk Brauer to Sigismund von Reitzenstein. Reitzenstein abolished the law of his predecessor, because of his great administrative reform which required dislocations and retirements that would have been too costly under the pension-rules of the civil service law. The paragraphs that regulated widow's allowances were, however, not abolished. See Wunder, *Die Badische Beamtenschaft*, pp. 36–37.

¹⁴⁰ If the widow had to care for children she obtained an additional payment. When the widow re-married, allowance was reduced. *Staats- und Regierungsblatt, Karlsruhe* 1809, pp. 161–179.

¹⁴¹ *Großherzogtum Baden, Die Verfassung des Großherzogtums Baden vom 22. August 1818, mit allen Abänderungen bis zum Gesetz vom 24. August 1904*, in: K. Binding (ed), *Deutsche Staatsgrundgesetze in diplomatisch genauem Abdruck*, Leipzig 1904, § 1–39, here § 25.

¹⁴² Cf. *Großherzogtum Baden, Staatsdienerpragmatik*.

¹⁴³ As before, allowance ceased if widows re-married or if orphans reached the age of 18. Cf. J. Eibach, *Loyalität und "standesgemäße" Lebensweise. Zur Entstehung der staatlichen Beamtenhinterbliebenenpensionen am Beispiel Badens*, in: *Zeitschrift für die Geschichte des Oberrheins*, 1991, pp. 503–513, here p. 507; *Großherzogtum Baden, Staatsdienerpragmatik* and Wunder, *Die Badische Beamtenschaft*, p. 145.

¹⁴⁴ Allowances were even increased up to 33.25 percent in 1876. Cf. Eibach, *Loyalität*, pp. 511–512.

¹⁴⁵ Cf. Wunder, *Die Badische Beamtenschaft*, p. 145.

Hence, the 19th century reform seems to have a pronounced effect on material maintenance of district magistrates and their families in the form of pension payments and widows insurance rather than on remuneration which seems to be already high during the 18th century.

However, even if nominal remuneration was high before the reforms in the second decade of the 19th century, magistrates' incomes have to be put in context with both price levels and real incomes of other peer groups in order to make secure propositions about the evolution of district magistrates absolute and relative living standards in the late 18th and 19th century. This is especially important for verifying whether living standards slightly deteriorated after the reforms, like the nominal evidence would suggest. Therefore the next sections develop a real income index based on an upper-class consumption basket and compare district magistrates' real incomes with those of peer groups.

2.3. The Construction of the Luxury Consumption Basket

In order to compare material well-being of district magistrates over time and relative to peer groups, I constructed a consumption basket that reflects the consumption pattern of the local upper class. Recently, Robert Allen introduced a very useful computation method.¹⁴⁶ In his consumption basket, Allen reported information about the daily caloric contents as well as grams of proteins of the included items. The information about the nutritional value makes it possible to adjust the consumption basket to the needs of different social groups. In his original paper, Allen constructed a poverty line consumption basket using silver prices and quantities in Strasbourg. The price index is constructed as a Laspeyres index with the period between 1745 and 1754 as base period. The basket includes foodstuffs and some other basic goods like expenditure for clothing, sanitation, light and heat. In total, the basket provided 1940 calories and 80 grams of proteins per day. According to Fogel, who estimated a distribution of the daily consumption of calories in late 18th century England and France, this would put an individual in the second decile in England and in the third decile in France.¹⁴⁷

¹⁴⁶ See Allen, *The Great Divergence* and again R. C. Allen, *The British industrial revolution in global perspective*, Cambridge 2010⁴.

¹⁴⁷ R. Fogel, *The Conquest of High Mortality and Hunger in Europe and America. Timing and Mechanisms*, in: P. Higonnet et al. (ed), *Favorites of Fortune. Technology, Growth, and Economic Development since the Industrial Revolution*, Cambridge 1991, pp. 33–71, here p. 45.

Table 2.2: Allen's Poverty Line Consumption Basket (Prices are Averages of Prices in Strasbourg between 1745-1754, in g Silver)

	Consumption per year and head	Price per unit (in g silver)	Spending share (in %)	Calories per day	Proteins per day (in g)
Bread	182 kg	0.693	30.4	1222	50
Beans/peas	52 l	0.477	6.0	160	10
Meat	26 kg	2.213	13.9	178	14
Butter	5.2 kg	3.470	4.4	104	0
Cheese	5.2 kg	2.843	3.6	53	3
Eggs	52	0.100	1.3	11	1
Beer	182 l	0.470	20.6	212	2
Soap	2.6 kg	2.880	1.8		
Linen	5 m	4.369	5.3		
Candles	2.6 kg	4.980	3.1		
Lamp oil	2.6 l	7.545	4.7		
Fuel	5 M BTU ¹⁴⁸	4.164	5.0		
Total		414.754	100	1940	80

Source: *Allen*, *The Great Divergence*, p. 421.

However, district magistrates were members of the upper classes and thus had a higher consumption of food and other basic goods. But how much more goods would an upper class household consume? Allen's analysis of Alexander Somerville's workers' budgets may give a hint.¹⁴⁹ In the original publication Somerville presented expenditures of four different household types that only differed in their weekly income and thus also in their expenditures.¹⁵⁰ Allen converted the information about weekly good-consumption of the different household types into a daily consumption of calories and proteins per head. According to Allen, the worker household with the highest weekly income of 318 pence consumed 3937 calories and 147 grams of proteins per day and head.¹⁵¹ This is a little more than twice the amount of calories and proteins that the poverty line consumption basket provides. And it represents the caloric consumption of a member of the upper classes: according to Fogel, an individual who consumed 3937 calories per day was in the 10th decile of the French and in the 9th decile of the English caloric distribution.¹⁵² That is, in order to adjust the consumption basket to the consumption

¹⁴⁸ Million British Thermal Unit.

¹⁴⁹ See *Allen*, *Industrial Revolution*, p. 47. The data was collected by Alexander Somerville in 1843. See A. *Somerville*, *A Letter to the Farmers of England on the Relationship of Manufactures and Agriculture*, by One Who Has Whistled at the Plough, London 1843.

¹⁵⁰ Weekly income ranged from 66 d to 318 d.

¹⁵¹ See *Allen*, *Industrial Revolution*, p. 47.

¹⁵² See *Fogel*, *Conquest*, here p. 45. Unfortunately, there is no distribution for proteins. However, the picture should be similar.

pattern of the upper class, it would be possible to double the consumption of the goods that were included into Allen's poverty line basket.

However, there are two caveats to this simple rule. First, while a household with a weekly income of 318 pence had a yearly income, measured in grams of silver, of 7276 grams, district magistrates could earn up to 26712 grams of silver p. a. One may therefore argue that district magistrates could have consumed even more calories and basic goods. Hence, the goods of the poverty line consumption basket had to be more than doubled. Although it is possible that members of the upper class would consume more than twice the poverty line consumption basket it is not plausible. As we know from consumption theory, the consumption of a good has a saturation point. That is individual goods are not consumed up to infinity. This is especially true for basic foodstuffs: up to a certain point the human body would not demand the ingestion of more calories or proteins. As Fogel's caloric distribution shows, the consumption of 3937 calories is close to such a saturation point: Thus, it is not very plausible to assume that an individual would consume much more food and other basic goods. Instead, individuals would consume new goods that were not included into the original poverty line consumption basket.

The second caveat addresses the observation that the consumption of a good normally has a saturation point. Because of different income elasticities, the consumption of a good does not increase proportionally with rising income. That is, individual goods respond differently to income shocks. Therefore, in order to construct a "luxury" consumption basket, Allen's poverty line basket has to be modified in two steps. In the first step, additional luxury goods will be added. In the second step, the consumption of the original items of the consumption basket will be increased according to the different income elasticities of the goods. Although the luxury consumption basket is constructed for Baden, prices will remain those of Strasbourg. This is necessary, because there are no reliable price series for Baden for the period under examination. The base period of the corresponding Laspeyres index was changed to the period 1780 to 1789, e.g. the last peacetime period before the Revolutionary and Napoleonic Wars.

As a first luxury good, sugar was introduced into the consumption basket representing the consumption of luxury foodstuffs.¹⁵³ Upper class households would furthermore

¹⁵³ Until the first decades of the 19th century sugar was a luxury good. See *R. Sandgruber, Die Anfänge der Konsumgesellschaft. Konsumgüterverbrauch, Lebensstandard und Alltagskultur in Österreich im 18. und 19. Jahrhundert*, München 1982, pp. 207–210.

spend on the provision of services, as studies about household budgets of different social groups show.¹⁵⁴ This category includes expenditures for cultural goods and education, as well as for leisure, health, transportation and the employment of servants. Civil Servants' households especially spend on cultural goods and education.¹⁵⁵ Thus, adding this category to the luxury consumption basket would have been desirable. Unfortunately, price series for cultural goods and education (e.g. teachers' wages, tuition fees) do not exist for the pre-industrial period examined here. The same is true for expenditures on leisure and health.¹⁵⁶ In the case of servants, another important spending category, more information exists. There is a rich reservoir of records that report servants' wages. From these sources long price series can be constructed. Expenditures on servants can therefore be integrated into the luxury consumption basket.¹⁵⁷

Transportation costs can also be added. Because many district magistrates were employed in regions where other means of transportation did not exist, I integrated transportation costs in the form of the variable maintenance cost of a horse represented by the main foodstuffs oats and hay. The latter can also be taken as further luxury consumption interpreting a horse as a symbol of status. At last, housing costs were included. Except for the latter, prices are those of Strasbourg and were taken from Hanauer.¹⁵⁸ Information about rent data is hard to obtain for the early modern period.¹⁵⁹

¹⁵⁴ Cf. H. K. Fischer, *Konsum im Kaiserreich. Eine statistisch-analytische Untersuchung privater Haushalte im wilhelminischen Deutschland*, Berlin 2011; T. Pierenkemper, *Der bürgerliche Haushalt an der Wende zum 20. Jahrhundert*, in: D. Petzina (ed), *Zur Geschichte der Ökonomik der Privathaushalte*, Berlin 1991, pp. 149–185; T. Pierenkemper, *Informationsgewinne und Informationsverluste einer Analyse von Haushaltsrechnungen auf massenstatistischer Basis - am Beispiel ausgewählter bürgerlicher Haushalte im 19. Jahrhundert*, in: T. Pierenkemper (ed), *Zur Ökonomik des privaten Haushalts. Haushaltsrechnungen als Quelle historischer Wirtschafts- und Sozialforschung*, Frankfurt a. M. 1991, pp. 61–75 and R. Spree, *Klassen- und Schichtenbildung im Medium des privaten Konsums: Vom späten Kaiserreich in die Weimarer Republik*, in: *Historical Social Research - Historische Sozialforschung* 2, 1997, pp. 29–80 For a general overview see: T. Pierenkemper, *Haushaltsrechnungen in der historischen Wirtschafts- und Sozialforschung - Ein Überblick*, in: T. Pierenkemper (ed), *Zur Ökonomik des privaten Haushalts. Haushaltsrechnungen als Quelle historischer Wirtschafts- und Sozialforschung*, Frankfurt a. M. 1991, pp. 13–33 and T. Pierenkemper, *Haushalt und Verbrauch in historischer Perspektive - ein Forschungsüberblick*, in: T. Pierenkemper (ed), *Haushalt und Verbrauch in historischer Perspektive. Zum Wandel des privaten Verbrauchs in Deutschland im 19. und 20. Jahrhundert*, Sankt Katharinen 1987.

¹⁵⁵ See Pierenkemper, *Der bürgerliche Haushalt*, here pp. 167–168 and also Spree, *Klassen- und Schichtenbildung*, pp. 63–64; table six and seven.

¹⁵⁶ While for the former it is unclear how to measure expenditures, there are no long price series for the latter, like prices for pharmaceuticals or physician wages.

¹⁵⁷ However, for cultural goods, education as well as expenditure for health and leisure are service goods, they may be roughly be approximated by the expenditure for servants.

¹⁵⁸ A. Hanauer, *Études Économiques sur l'Alsace Ancienne et Moderne*, Paris 1878.

¹⁵⁹ Compare e.g. P. Hoffman/D. Jacks/P. Levin/P. Lindert, *Real Inequality in Europe since 1500*, in: *The Journal of Economic History* 2, 2002, pp. 322–355, here pp. 326–327.

But remember, that under the 1808 remuneration scheme magistrates received free lodging or a subsidy of 200 fl.¹⁶⁰ From this information one can infer that housing costs for a representative apartment of a district magistrate accounted for the silver equivalent of 200 fl.¹⁶¹

In the second step, the consumption of the original goods was increased using information about 18th and 19th century income elasticities from England from where we have the best data.¹⁶² The evidence from these studies was supplemented by early 20th century data from Germany and the United States.¹⁶³ As my computations based on Sommerville's budgets as well as Houthakker's computations – both depicted in table three – show, income elasticities vary with the level of income. In most cases, income elasticities decline with rising incomes.¹⁶⁴ This is a sign of the existence of a saturation point which is reached when the income elasticity equals zero. Yet, there are some exceptions from this rule. For some goods – like clothing, fuel, soap and candles – income elasticities are u-shaped. Another caveat is that income elasticities vary between different studies of comparable social groups. E.g. Clark, Huberman and Lindert¹⁶⁵ estimate different income elasticities from diverse samples of poor household budgets. The same is true for the study of Schultz,¹⁶⁶ whose results are also dependent on the underlying budgetary data. These caveat shows that it is difficult to determine the "right" income elasticity of a good.¹⁶⁷ The problem can only be solved by making reasonable assumptions and comparing the results with other consumption baskets.

¹⁶⁰ Cf. GLA 239/4889.

¹⁶¹ Even if this approach seems to be a crude guess it is the best we have, for there is no other reliable information about housing costs in southwest Germany or the Alsace. It may also be that upper class households own their houses rather than paying rent. In this case housing costs can be interpreted as opportunity costs.

¹⁶² However, income elasticities should not be dependent on country specific factors. We can thus use data from England as a good proxy for Baden.

¹⁶³ Data for England is from *Somerville*, Letter and *G. Clark/M. Huberman/P. H. Lindert*, A British Food Puzzle, 1770-1850, in: *The Economic History Review* 2, 1995, pp. 215–237. Data for the United States and Germany was taken from *T. W. Schultz*, *The Economic Organization of Agriculture*, New York 1953 and *H. S. Houthakker*, An International Comparison of Household Expenditure Patterns, Commemorating the Centenary of Engel's Law, in: *Econometrica* 4, 1957, pp. 532–551, respectively.

¹⁶⁴ Cf. also *Clark/Huberman/Lindert*, British Food Puzzle, pp. 219; 221.

¹⁶⁵ *Clark/Huberman/Lindert*, British Food Puzzle.

¹⁶⁶ *Schultz*, *The Economic Organization*.

¹⁶⁷ Other authors also emphasize this problem. They usually assume a joint income elasticity between 0.5 and 0.6 for food products in general. See e.g. *Clark/Huberman/Lindert*, British Food Puzzle; *N. F. R. Crafts*, English Economic Growth in the Eighteenth Century: A Re-Examination of Deane and Cole's Estimates, in: *The Economic History Review* 2, 1976, pp. 226–235 and *R. V. Jackson*, Growth and Deceleration in English Agriculture, 1660-1790, in: *The Economic History Review* 3, 1985, pp. 333–351.

Table 2.3: Income Elasticities in England, Germany and the United States

	Sommerville ^a			Clark et al. ^c	Schultz ^d	Houthakker ⁱ
	66 d p. w.	120 d p. w.	186 d p. w.			All food
<i>Food products</i>						Germany (1927/28):
Bread	0.61	0.77	0.25			Manual
Beans/ peas					-0.289 ^e /0.093; 0.034 ^f	workers: 0.598
Meat			1.53 ^h	0.358/0.451/ 0.617/0.853/ 0.87	0.522/1.32/ 1.77 ^g	Clerical workers: 0.501
Butter			0.88	0.343/0.633/ 0.644/0.718/ 0.854	0.3681 ^e /0.327	Government officials: 0.385
Cheese			0.67	0.509	0.5902 ^e /0.503	Average: 0.473
Eggs				1.281/1.454	0.308 ^e	Germany (1907)
Beer			3.82	0.468/0.817/ 3.032		Workers: 0.537
<i>Non-food products</i>						Clothing
Soap	0.69 ^b	0.66 ^b	0.76			Germany (1927/28):
Linen (Clothing)	3.44	0.93	1.74			Manual
Candles	0.69 ^b	0.66 ^b	0.76			workers: 1.297
Lamp Oil						Clerical
Fuel (Coal)	0.69	0.00	1.07			workers: 1.035
						Government officials: 0.918
						Average: 1.049
						Germany (1907):
						Workers: 1.498

Notes and Sources:

^a Own computation, derived from worker budgets in 1843. All elasticities are arc elasticities. ^b Joint elasticity for soap and candles. ^c Regression analysis based on consumption patterns of rural and urban poor in 1787-96, 1837-41, 1863 and 1889-90. ^d Study of American budgets after WW II. ^e Low income groups in 1936. (Value of consumption, arc elasticities). ^f canned baked beans and canned peas, respectively. ^g Elasticity dependent on quality. Higher quality meat has a higher elasticity. ^h Butcher's meat.

At first, I categorized income elasticities into four different groups. The first two groups represent necessary goods, ranging from elasticities of 0 to 0.5 and 0.5 to 1.0, respectively. The latter two groups represent luxury goods. While the third group ranges from an income elasticity of 1.0 to 2.0, the fourth group is an open group that starts at an elasticity of more than 2.0. The available data from table three suggest that it is plausible to assume for the first two groups an income elasticity of 0.3 and 0.6,

respectively. Regarding luxury goods it seems reasonable to assume income elasticities of 1.5 and 3.0. Yet, knowledge about the *right* income elasticities alone does not suffice to adjust Allen's poverty consumption basket. We also have to know how much income increased. Remember from page 38 that – according to Allen and Somerville – a well-to-do workers household consumes roughly twice the amount of calories and proteins that the poverty line consumption basket provides. Hence, because doubling the nutritional content of the poverty line consumption basket seems to be reasonable, income has to double, in order to make the new consumption basket affordable. Given this assumption the consumption of goods should increase by the factor 1.3, 1.6, 2.5 and 4.0, respectively.¹⁶⁸

For the classification of goods I used income elasticities of poor households, wherever possible. These seem to be the most appropriate elasticities, because the poverty line consumption basket corresponds to very low incomes. An exception from this rule had to be made for meat, beer and fuel. The Somerville data only provide information about the meat consumption of better-situated households. For these households the income elasticity is 1.53. Clark, Lindert and Huberman, on the other side, report much lower income elasticities. Yet, the authors remark that they have no information about quality while Somerville reports data about high-quality meat. It is plausible to assume that the income elasticity of meat rises in quality. This is suggested by the data provided by Schultz as well as by Clark, Lindert and Huberman themselves who doubt their own estimates and argue that income elasticity between 1.1 and 1.5 seems to be more appropriate. Therefore, meat was classified as a moderate luxury good.

In the case of beer, Somerville also only reports data for better-situated households ($\epsilon=3.82$), while Clark, Huberman and Lindert report highly divergent elasticities ranging from 0.468 to 3.032. This high divergence may also be due to differences in quality or alcoholic content. However, I have neither information about quality nor about alcoholic content. Hence, it seemed the most plausible to classify beer as a moderate luxury.

¹⁶⁸ Technically I assumed that all income elasticities remain constant until income is doubled and then drop to zero. This is the easiest way to deal with declining income elasticities and the existence of a saturation point. It also makes sure that, when income more than doubles the household will spend his additional income on new "luxury" goods that were not included in the original poverty line consumption basket.

Table 2.4: Classification of Income Elasticities

Necessary	Luxury
$0 \leq \varepsilon < 0.5$	$1 \leq \varepsilon < 2$
Beans/Peas	Meat
$0.5 \leq \varepsilon < 1$	Fuel
Bread	Eggs
Butter	Beer
Cheese	$\varepsilon \geq 2$
Soap	Clothing
Candles	
Lamp Oil*	

*Assumption that the elasticity for lamp oil is equal to candles

At last, fuel was also classified as a moderate luxury good, although low-income households had income elasticity below 1.0. Yet, in the case of fuel the income elasticity rises with rising income, becoming a moderate luxury good for better-situated households. That is, richer households tend to spend more on heat when income rises than poor households.

Applying all the rules described above to the poverty line consumption basket, leads to the luxury consumption basket that is depicted in table 2.5. This basket allows for the consumption of luxury goods and provides 3430 calories and 140 grams of proteins per day. The consumption of 3430 calories per day would put an individual, according to Fogel, in the 8th decile of the caloric distribution in England and in the 9th decile in France.¹⁶⁹ Thus, given this measure, the consumption basket corresponds to the consumption of a member of the upper class.¹⁷⁰

Compared to consumption baskets of upper class households used in other studies the luxury consumption basket presented here had a higher share of housing and a lower share of foodstuffs: E.g. a well-to-do class family in Saxony in 1857 spent, according to Engels,¹⁷¹ 50 percent of its total expenditures for food and twelve percent for housing while in the luxury consumption basket, the corresponding figures are 34.4 and 27.1 percent. A comparison with the consumption pattern of elite-members in the Netherlands leads to similar results. Hoffmann, Jacks, Levine and Lindert present two

¹⁶⁹ Fogel, Conquest, here p. 45.

¹⁷⁰ Albeit the consumption basket provides a little less than 3900 calories it still represents the consumption pattern of an upper class member. Furthermore, one has to take into account that upper class members did not work physically and thus needed less calories than workers.

¹⁷¹ E. Engel, Die vorherrschenden Gewerbszweige in den Gerichtsämtern mit Beziehung auf die Productions- und Consumtionsverhältnisse des Königreichs Sachsen, in: Zeitschrift des Statistischen Bureaus des Königlich Sächsischen Ministeriums des Inneren 8 a. 9, 1857, pp. 153–182, here p. 170.

estimates for the periods 1800/52 and 1806/62, respectively.¹⁷² Expenses for food and drinks were 60.8 and 56.0 percent compared to 34.4 percent in my luxury consumption basket. Yet, the Netherlands households spent only 11.4 and 7.0 percent on housing.

Table 2.5: The Luxury Consumption Basket (Prices are Averages of Prices in Strasbourg Between 1780-1789, in g Silver)

	Consumption per year and head	Price per unit (in g silver)	Spending share (in %)	Calories per day and head	Proteins per day (in g) an head
Bread	291.2 kg	0.772	9.6	1955	80
Beans/peas	67.6 l	0.426	1.2	208	13
Meat	65 kg	3.042	8.4	445	36
Butter	8.32 kg	5.104	1.8	166	0
Cheese	8.32 kg	2.915	1.0	85	5
Eggs	130	0.133	0.7	28	2
Sugar	1 kg	9.890	0.4	11	0
Beer	455 l	0.581	11.2	531	4
Soap	4.16 kg	4.042	0.7		
Linen	20 m	9.460	8.0		
(Clothing)					
Candles	4.16 kg	5.723	1.0		
Lamp oil	4.16 l	6.985	1.2		
Fuel	12.5 M BTU ¹⁷³	4.164	2.8		
Servants	1	249.400	10.6		
Total		1383.498		3430	140
Consumption per household					
Total*3		4150.493			
Housing Costs	1	1908	27.1		
Oats	22,5 hl	21.513	6.9		
Hay	2700 kg	0.189	7.2		
Household consumption		7053.373			

Source: Own calculation based on data from *Hanauer*, Études Économiques.

In the case of clothing the figures are 18 percent for the Engel's family, 15.4 and ten in the Netherlands case and eight percent in the case of the luxury consumption basket presented here.

¹⁷² Hoffman/Jacks/Levin/Lindert, Real Inequality, p. 327.

¹⁷³ Million British Thermal Unit.

The figures for heat and lightning are relatively close. In Saxony an upper class family spent five percent on these items, in the Netherlands households spent between 1.0 and 8.9 percent while the corresponding share for the luxury consumption basket is also five percent. The same is true for servants: a district magistrate's household spent 10.6 percent of its total expenditure for services while the corresponding share is 8.0 in the Netherlands.¹⁷⁴ Yet, also accounting for the differences in the expenditure for food and drinks and housing, the luxury consumption baskets seems to be – in total – comparable to other 19th century consumption baskets of members of the upper class.

This picture is confirmed if one compares the luxury consumption basket with household budgets of Civil Servants during the *Kaiserreich*. In his recent book, Fischer computes several consumption clusters. The consumption cluster that was mainly consumed by Civil Servants is quite comparable to my luxury consumption basket in terms of expenditure shares. While Fischer's households spend 36.4 percent for foodstuffs, 26.6 percent for housing, 12.9 percent for clothing and ca. nine percent for services the shares in the luxury consumption basket are 34.4, 27.1, 8.0 and 10.6 percent, respectively.¹⁷⁵

A major problem of the construction of the luxury consumption basket is the absence of detailed price information for Baden in the period under consideration. Long price series of foodstuffs and staple goods for German states are very rare.¹⁷⁶

Information about prices of these goods is almost only provided by Elsas¹⁷⁷ and the works of Gerhard and Kauffold¹⁷⁸, who carried Elsas work forward. Yet, most of their price data is for northern or eastern German towns and thus not feasible for computing real wages in Baden.¹⁷⁹ Yet, as I will argue in the following paragraphs, prices in the Alsace and Baden were highly correlated. We also have good information about prices in

¹⁷⁴ For the 1800/52 household the expenditure for servants is believed to be zero.

¹⁷⁵ See Fischer, *Konsum im Kaiserreich*, pp. 232–237. Fischer calls the described consumption cluster "cluster 2.4".

¹⁷⁶ Cf. for example W. von Hippel, *Armut, Unterschichten, Randgruppen in der frühen Neuzeit*, München 1995, pp. 60–61.

¹⁷⁷ J. M. Elsas, *Umriss einer Geschichte der Preise und Löhne in Deutschland. Vom ausgehenden Mittelalter bis zum Beginn des 19. Jahrhunderts*, Leiden 1936.

¹⁷⁸ H.-J. Gerhard/K. H. Kaufhold, *Preise im vor- und frühindustriellen Deutschland. Grundnahrungsmittel*, Göttingen 1990 and H.-J. Gerhard/K. H. Kaufhold, *Preise im vor- und frühindustriellen Deutschland. Nahrungsmittel - Getränke - Gewürze - Rohstoffe und Gewerbeprodukte*, Stuttgart 2001.

¹⁷⁹ This is not quite true for the Elsas data which provides information for Speyer. However, data for Speyer does only cover a small set of goods and shows many gaps in the data. Therefore it cannot serve as a proxy for prices in Baden.

Strasbourg, provided by Hanauer.¹⁸⁰ Therefore Strasbourg prices can be used as a proxy for prices in Baden.

Table 2.6: Comparison of Selected Goods from Baden and Strasbourg at the Beginning of the 1870's

Category	Difference between Baden and Strasbourg (in percent)	Weights in the original consumption basket (in percent)	Weighted Difference (in percent)
Bread	2.6	13.1	0.35
Peas	28.3	1.7	0.48
Butter	- 1.3	2.5	- 0.03
Meat	- 12.0	11.5	- 1.38
Eggs	3.8	1.0	0.04
Fuel (Wood)	83.3	3.8	3.17
Sum	-	-	2.62

Source: Own Calculation. *Großherzogtum Baden*, Statistisches Jahrbuch für das Großherzogtum Baden, vol. 1868-1870, pp. 200-201; 140-141; 138-139, respectively and *Hanauer*, Études Économiques.

For some goods of the consumption basket we have price information for Baden since 1869. Because Hanauer reports his price series until 1875, we can compare the two price levels during the 1870's. Given the weights of the original Strasbourg consumption basket, prices in Baden were only 2.62 percent higher than in the contiguous Alsace at the beginning of the 1870's (table 2.6).¹⁸¹ Furthermore, the two regions had a similar economic structure¹⁸² and grain prices were quite correlated (table 2.7) during the 18th and 19th century.

Table 2.7: Grain Price Correlation

Region	Period	Correlation Coefficient
Strasbourg – Mannheim	1813 – 1860	0.90
Mannheim – Württemberg	1813 – 1860	0.91
Strasbourg – Württemberg	1766 – 1819	0.87
Strasbourg – Württemberg	1766 – 1788	0.74
Strasbourg – Paris*	1766 – 1788	0.52

Source: *Statistisches Reichsamt*, Vierteljahreshefte zur Statistik des Deutschen Reiches 1935, pp. 273–307 (Mannheim); M. Baulant, Le prix des grains à Paris de 1431 à 1788 1968, in: Annales 3, 1968, pp. 520-540 (Paris); *Hanauer*, Études Économiques (Strasbourg) and *Königreich Württemberg*, Württembergische Jahrbücher für Statistik und Landeskunde 1897 (Württemberg).

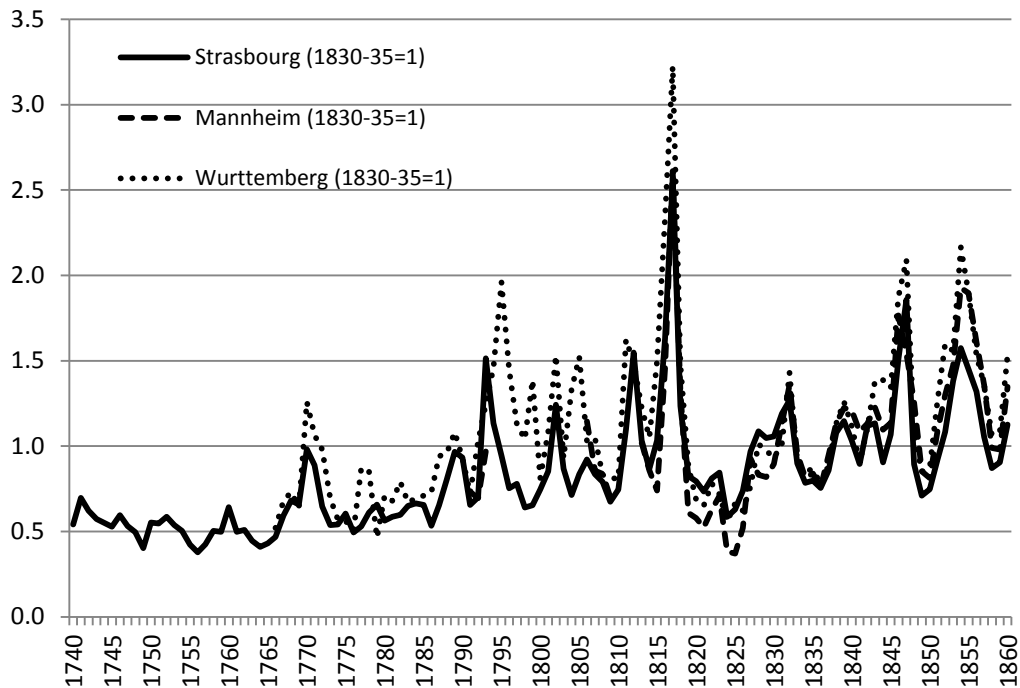
*Prices are for the Departement Seine which is almost identical with greater Paris.

¹⁸⁰ *Hanauer*, Études Économiques.

¹⁸¹ Taking coal instead of wood would let the difference between Alsace and Baden shrink to 1.6.

¹⁸² Cf. E. H. Meyer, Badisches Volksleben im neunzehnten Jahrhundert, Stuttgart 1984, p. 6.

Figure 2.1: Grain Prices in Strasbourg, Mannheim and Württemberg



Source: *Statistisches Reichsamt*, Vierteljahreshefte zur Statistik des Deutschen Reiches 1935, pp. 273–307 (Mannheim), Hanauer, *Études Économiques* (Strasbourg) and *Königreich Württemberg*, *Württembergische Jahrbücher für Statistik und Landeskunde* 1897 (Württemberg).

The correlation between grain prices in Mannheim and Strasbourg was 0.90 in the period 1813-1860,¹⁸³ while it was 0.91 for Mannheim and the German state of Württemberg in the same period (compare table 2.7 and figure 2.1). For the second half of the 18th century there are no prices for Baden. However, the correlation coefficient between grain prices in Strasbourg and Württemberg is 0.87 for the period 1766-1819. Because Baden was located between Württemberg and the Alsace it seems plausible to assume that there was a similar correlation between Strasbourg and Baden between 1766 and 1819. This assumption is sustained by the fact, that the correlation coefficients between Mannheim and Strasbourg and Mannheim and Württemberg were quite similar in the 1813-1860 period. The assumption that there was a regional rather than a national convergence of grain prices is further sustained by the observation, that for the 18th century the correlation between Strasbourg and Württemberg was significantly

¹⁸³ Note that this was before the transportation revolution and the emergence of a global grain market in the 1860's and 1870's.

higher than between Paris and Strasbourg. Hence, grain price correlation suggests that price data from Strasbourg can be used to estimate a consumption basket for Baden.¹⁸⁴

Grain price correlation was a result of the high economic integration of the two regions: the Alsace and Baden were only separated by the Rhine River and faced the same climatic conditions and exogenous shocks, e.g. the Napoleonic Wars or floods. Furthermore, the Rhine provided an easy, and compared to land transportation, cheap way to transport goods.¹⁸⁵ At last, there were no major trade barriers between Baden and France throughout the examination period.¹⁸⁶ Though France was not Baden's main trading partner, there were considerable trade flows between the two countries.¹⁸⁷ Furthermore, Baden was an important transit route for French goods sold at the German market. There is also some evidence, that entrepreneurs from Baden employed skilled French workers. Thus, relatively low trade costs between Baden and France were the main driver for grain price correlation.

2.4. Real Income of 18th and 19th Century District Magistrates

This section will analyze how district magistrates' real living standards developed during the late 18th and the first half of the 19th century using an index of real living standards. Following the lines of Allen, who constructed welfare ratios for a hypothetical family of two adults and two children between 4-6 and 1-3, I developed a luxury ratio based on the luxury consumption basket. The luxury ratio is defined as annual earnings divided by the cost of the luxury consumption bundle of the family.¹⁸⁸ The costs of foodstuffs, drinks, clothes, heat and sanitation were multiplied by the factor three, assessing the requirements of the two children as half the adult's daily caloric needs. Then the costs of

¹⁸⁴ I also run several regressions where grain prices in Strasbourg are regressed on a constant and grain prices in Mannheim and Württemberg, respectively. All regressions have a R^2 above 0.70 and a very high t-statistic.

¹⁸⁵ See *W. von Hippel*, *Wirtschafts- und Sozialgeschichte 1800-1918*, in: *H. Schwarzmaier* (ed), *Handbuch der baden-württembergischen Geschichte. Vom Ende des Alten Reiches bis zum Ende der Monarchien*, Stuttgart 1992, pp. 477–784, here pp. 534–535. Though there were a strong current and many rapids river transportation was much cheaper than land transportation.

¹⁸⁶ For the trade relations between Baden and France cf. *von Hippel*, *Wirtschafts- und Sozialgeschichte 1800-1918*, here pp. 549; 486-487; *Fischer*, *Anfänge der Industrialisierung*, pp. 108; 124-128; *M. Kutz*, *Studien zum deutschen Außenhandel, insbesondere zum Handel mit England und Frankreich von der französischen Revolution bis zur Gründung des Zollvereins. Eine statistische Strukturuntersuchung zur vorindustriellen Zeit*, Bonn 1968 and *G. Seybold*, *Württembergs Industrie und Außenhandel vom Ende der Napoleonischen Kriege bis zum Zollverein*, Stuttgart 1974, p. 281 Even if Baden would had have erected trade barriers, the country would not had have the capability to control its long borders. Indeed, the tariff increase on French goods as a response to high French tariffs in 1822 could not prevent French goods from flowing into Baden via Switzerland.

¹⁸⁷ Baden mainly exported agricultural products into France and imported French industrial goods.

¹⁸⁸ Cf. *Allen*, *The Great Divergence*, p. 425.

provender of a horse were added. In a last step housing costs were added to the consumption basket.¹⁸⁹

A luxury ratio of 1.0 then means that the household can just afford the luxury basket. Because the basket includes the caloric and social needs of an upper class member, a luxury ratio of one can be interpreted as representing a very decent standard of living for an upper class member. A welfare ratio greater than 1.0 means, that the household can afford even more luxury goods and would have a living standard that would be more than adequate considering its social status. Because its caloric needs are more than satisfied, it will spend most of his excess income on consumer goods or will invest in assets and the education of children.¹⁹⁰ If the ratio is smaller than 1.0 the household cannot afford the luxury consumption basket. In a physiological view, this is not harmful, because the family members will still be above the subsistence level. However, the household would have a living standard that is not suitable to his social status.¹⁹¹

2.4.1 Absolute Living Standards

In order to quantify the absolute level of well-being over time we have to examine district magistrates' luxury ratios. Because it is interesting to ask whether or not living standards deteriorated in real terms after the reform of remuneration – as the results from the nominal evidence would suggest – , we have to compare real incomes right before and after the reform. The relevant luxury ratios are reported in table eight. The table shows, that in the decade before the 1819-reform, non-noble magistrates could consume up to more than twice the luxury consumption basket regardless of using the 1808 remuneration scheme or the figures reported in the late 18th century records.¹⁹² A noble magistrate could reach an even higher luxury ratio. The lowest paid magistrates had a luxury ratio between 1.0 and 1.3 (depending on which source is used). That is, also before the 1819 reform even the lowest paid magistrates had an income that can be interpreted as very decent. Only junior Civil Servants (*Assessor*) had a luxury ratio less than one. However, they had fewer expenses than magistrates, because, in general, they were not allowed to marry. Accounting for that factor, the luxury ratio of a junior Civil

¹⁸⁹ Cf. table 2.5.

¹⁹⁰ In such cases the share of foodstuff in the consumption basket will decrease and the basket will converge more and more to a modern consumption basket. Additionally, the household has the possibility to substitute foodstuffs according to his own preferences.

¹⁹¹ It may be harmful in a social view, because the family can be forced to abstain from sending their children to university or is not able to participate in the local upper class society.

¹⁹² Nominally the remuneration in 1808 was higher but inflation reduced real values to the late 18th century level.

Servant was about 1.2.¹⁹³ Furthermore, magistrates did not remain on the lowest salary level and could spend more money on luxury goods after some years of service.

Table 2.8: Luxury Ratios of District Magistrates over Time

	Late 18th century	Pre-reform (1808-1819)	Post-reform (1819-1830)	1830's	1860's
Noble magistrate	4.8 – 4.1	2.6			
City Manager			2.9	2.8	2.3
Magistrate	2.2 – 1.0	2.3 – 1.3	2.5 – 1.2	2.4 – 1.2	2.0 – 1.0
Junior civil servant		0.6	0.8 – 0.6	0.8 – 0.6	0.7 – 0.5

Source: Own calculations, based on GLA 120/232; 134/32, 57; 233/3387 and *Wunder*, Die Badische Beamtenschaft, p. 615.

The reform of remuneration between 1809 and 1819 did not improve incomes much in real terms. Comparing the upper bound of the 1819 pay-scheme with that of non-noble magistrates in 1808, real incomes rose slightly by about 7.8 percent. Comparing the top incomes – that is the income of a noble magistrate in 1808 with a city manager (*Stadtdirektor*) in 1819 – real incomes rose by ten percent. At the lower bound real income decreased by six percent. That is, unlike nominal values real living standards only decreased at the lower bound and not overall. Yet, because of ongoing inflation real incomes seemed to decline during the first half of the 19th century falling below the level of the early 19th century during the 1860's.

Furthermore, one has to take into account that district magistrates benefitted from pension payments after 1819 and their widows received an allowance payment. The average years of service for a sample of 80 district magistrates was 32.1 years while the average last remuneration for the same sub-sample accounted for 2202 fl.¹⁹⁴ Between 1831 and 1890 this would have implied an average nominal pension of 1622 fl. In real terms this would have induced an average real pension payment of 1.6 in the 1830's, and 1.5 in the 1850's. During the 1820's, under the original pension scheme, average real pension benefits would have even accounted for 2.1.¹⁹⁵ Thus, pension payments were significantly above a luxury ratio of 1.0 implying that district magistrates' living standards remained high after their retirement while before 1819 there was no guarantee that the servant could preserve his living standard. Yet, the welfare effects of

¹⁹³ In 1819 the luxury ratio of a single Assessor who earned between 600 and 800 fl was 1.6 and 1.2, respectively. Yet, the prohibition to marry may have reduced junior Civil Servants' happiness and thus their immaterial living standard.

¹⁹⁴ The sample includes district magistrates that were employed between 1797 and 1902 whereas the bulk of the data is between 1820 and 1860. Wage data was available for a sub-sample of 30 magistrates.

¹⁹⁵ Nominal pension benefits were 2028.

pension payments are depend on retirement age and life expectancy. For a sample of 40 district magistrates Wunder estimates an average age of retirement of 66.1 years.¹⁹⁶ Average life expectancy of a 65 year old male accounted for 9.2 years during the first half of the 19th century and rose to 12.5 years in the second half of the century.¹⁹⁷ The welfare effect of pension payments thus seems to be quite considerably.¹⁹⁸

Since 1819, widows received 25 percent of their husbands' last remuneration. Assuming an average last remuneration of 2202 fl widows insurance benefits were about 550 fl. This implies a luxury ratio of 0.6 during the 1820's and 1830's and 0.5 during the 1860's. Yet taking into account that widows usually did not had to sustain a family and that they often lived in the household of their son or son-in-law real widow benefits were above the 1.0 threshold. Unfortunately, further statements about welfare effects are not possible, because I have no information about widows' age at the time of their husbands' death.¹⁹⁹

2.4.2 Relative Living Standards

A major drawback of the luxury ratio approach described above is that it merely measures satisfaction of caloric and social needs, and therefore is a measure of absolute wealth, rather than giving information about relative wealth. Nevertheless, information about relative wealth is important if one wants to test if district magistrate' remuneration reflected social status or, in other words, was high compared to other social groups. Though it is plausible that an individual with a luxury ratio explicitly above one would have a relatively high position in the income distribution this hypothesis has to be tested. Therefore district magistrates' real income will be compared with the income of other high income groups as well as with the income of low income groups.

¹⁹⁶ Wunder, Die Badische Beamtenschaft, pp. 309–310.

¹⁹⁷ A. E. Imhof/H.-U. Kamke, Lebenserwartungen in Deutschland, Norwegen und Schweden im 19. und 20. Jahrhundert, Berlin 1994, p. 409.

¹⁹⁸ Welfare effects may have been even higher if one considers that income and mortality were correlated negatively. Cf. e.g. J. Vögele, Sozialgeschichte städtischer Gesundheitsverhältnisse während der Urbanisierung, Berlin 2001, p. 204.

¹⁹⁹ Some district magistrates complained that they could not sustain a socially adequate living standard. See for example Krapp, Die badische Ämterorganisation, pp. 61–62 and Eibach, Staat. Cf. also the personal files of the district magistrates Bauer (GLA 76/357), Beck (GLA 76/256), Bleibimhaus (GLA 76/838) and Jägerschmid (GLA 76/3894-6). For the second half of the 18th century compare GLA 120/230. In most cases these grievances were due to higher prices for both luxury goods and foodstuff as well as for education (sons of district magistrates had to visit schools in distant towns). Yet, in these cases government often granted a pay rise in order to assure an adequate standard of living.

According to Schulz the upper and middle class in Baden was dominated by civil servants – including clergymen – merchants, rich innkeepers and brewers.²⁰⁰ The lower classes mainly consisted of farmers, craftsmen, day laborers and workers. Unfortunately, we have no data about incomes of farmers who represented about half of the labor force in 1810 and more than a third in 1843/44.²⁰¹ However, we know that, because of the dominance of small scale farms, most farmers did not earn much more than subsistence. Though for 18th century Baden no wage or income data for other income groups can be found, it exists for the contiguous Duchy of Wurttemberg which makes a loose comparison possible. For the 19th century data was obtained from Baden, Brunswick-Wolfenbüttel, Magdeburg and Nuremberg. Because the data covers a long period, inflation effects had to be eliminated by deflating 18th and 19th century incomes with an average of 1750/1799 and 1800/1849 prices, respectively using the luxury ratio approach.²⁰²

Table 2.9 shows that 18th century-magistrates' real income was relatively high compared to other high income occupations of the time. Compared to the annual capital income of a partner in a joint stock company, non-noble magistrates had a similar or at least comparable standard of living. Living standards of the less representative noble magistrates were even identical with the incomes of the company's partners. Compared to other academic occupations like managers or clergymen, district magistrates had a considerably higher living standard. Compared to workers and day laborers district magistrates real income was extremely high. Together with agricultural labor those

²⁰⁰ Cf. A. Schulz, *Wirtschaftlicher Status und Einkommensverteilung - die ökonomische Oberschicht*, in: L. Gall (ed), *Stadt und Bürgertum im Übergang von der traditionellen zur modernen Gesellschaft*, München 1993, pp. 249–271, here p. 256.

²⁰¹ For a survey of the economic structure of Baden, see Fischer, *Anfänge der Industrialisierung*, pp. 197; 277; 288 Industry accounted for 36 percent of the labor force in 1810 and 49 percent in 1843/44 including craftsmen, workers, as well as factory owners, merchants and innkeepers. However, industry was dominated by small scale business which accounted for 30 percent in 1810 and 36.4 percent in 1829 (there is no information for 1843/44) while manufacturing accounted for one percent in 1810 and 4.9 percent in 1843/44. Day laborers accounted for six percent in 1810 and 5.6 percent in 1843/44. Unfortunately, Fischer only reports a distribution of the labor force rather than a personal distribution of income. However, because we know that most of the farmers, small scale business men factory workers and day laborers belonged to the lower middle class and the lower class (however the transition between these groups was permeable) we can estimate the lower classes to represent between 85 and 84 percent of the labor force in 1810 and 1843/44, respectively which corresponds with the share of the lower classes in early modern societies. For example, von Hippel depicts the share of the lower class to up to 70 percent for the 18th century. See von Hippel, *Armut, Unterschichten, Randgruppen*, p. 15.

²⁰² Note, that, because price levels varied notably between regions, the depicted luxury ratios of peer groups from foreign countries rather display the purchasing power of these foreign incomes in Baden than actual domestic living standards.

groups – marked by the dotted line – represented about 85 percent of the labor force.²⁰³ That is, district magistrates belonged at least to the top 15 percent of income earners in the 18th century which supports the results of ranking magistrates in the 8th and 9th deciles of the caloric distribution computed by Fogel.

Table 2.9: Comparison of 18th Century District Magistrates' Income with High and Low Income Groups (in 1750/1799 Prices)

Occupation	Luxury Ratio
Capital income of a partner in a joint stock company ^a	3.9 – 3.1
Noble magistrate	3.8 – (3.4) ^b
Non-noble magistrate	3.4(2.8) ^b – 1.9
Manager of a faience manufactory	1.2 – 0.8
Clergymen (average) ^a	1.0
Skilled (factory) worker ^a	0.5 – 0.4
Day laborer ^a /unskilled worker ^a /weaver ^a	0.2 – 0.1

^aWurttemberg

^b dependent whether or not a non-noble magistrate could become an "Obervogt".

Source: Luxury ratios for district magistrates: own calculation based on GLA 120/232; 134/32, 57 and 233/3387. Peer group data was obtained from *E. Troeltsch*, *Die Calwer Zeughandelskompagnie und ihre Arbeiter. Studien zur Gewerbe und Sozialgeschichte Altwürttembergs*, Jena 1897, pp. 152-153; 222-226; 234-237 (partners in joint stock company, day laborers, weavers and workers); *T. Meyer*, *Die Fayence-Manufaktur des Johann Mathäus Babeck in Mergentheim 1785-1798*, Frankfurt a. M. 1996, pp. 52–53 (managers of faience manufactory), and *M. Hasselhorn*, *Der altwürttembergische Pfarrstand im 18. Jahrhundert*, Stuttgart 1958, pp. 3-4; 16 (clergymen).

The overall picture did not change in the 19th century which becomes clear by comparing district magistrates' living standards with the well-being of merchants in Magdeburg.²⁰⁴ Only a small number of very rich wholesale merchants, called *Großhändler*, earned more than magistrates and magistrates' income was not far away from merchant's income when it is compared to the income of the less affluent *marchand en gros* and average merchants income.²⁰⁵ The top remuneration of the few city managers (*Stadtdirektoren*) almost matched those incomes. Compared to small merchants in Magdeburg incomes were slightly higher at the upper bound and slightly lower at the lower bound. Thus, in sum, magistrates' living standards were comparable to the living standards of wealthy merchants from Magdeburg. In relation to factory owners, clergymen, retail dealers in

²⁰³ Cf. *Fischer*, *Anfänge der Industrialisierung*, p. 277.

²⁰⁴ Cf. *R. Straubel*, *Kaufleute und Manufakturunternehmer. Eine empirische Untersuchung über die sozialen Träger von Handel und Großgewerbe in den mittleren preußischen Provinzen*, Stuttgart 1995.

²⁰⁵ The average excludes the very rich but few wholesale merchants and bankers. The exclusion of these two groups from the average is justified because their incomes are outliers in the distribution of merchant's incomes. See *Straubel*, *Kaufleute und Manufakturunternehmer*, p. 249.

Wolfenbüttel and skilled workers, district magistrates in Baden had considerably higher living standards. The same is true in comparison to innkeepers, artisans, unskilled workers and journeymen. As well as in the 18th century magistrates earned considerably more than the lower 85 percent of the labor force marked by the dotted line in table 2.10.²⁰⁶ Thus, also in the first half of the 19th century district magistrate belonged to the top 15 percent of income earners.²⁰⁷

Table 2.10: Comparison of 19th Century District Magistrates' Income with High and Low Income Groups (in 1800/1849 Prices)

Occupation	Luxury Ratio
Wholesale Merchant ("Großhändler"; Magdeburg)	7.5
Merchant ("marchand en gros"; Magdeburg)	3.1
Average merchants income (Magdeburg) ^a	3.0
City Manager	2.8
Magistrate	2.4 – 1.2
Small merchant (Magdeburg)	2.3 – 1.4
Factory Owner (Wolfenbüttel)	1.2
Clergymen (Average)	1.1
<hr/>	
Retail Sector (Wolfenbüttel)	1.0 – 0.7
Skilled Worker	1.1 – 0.6
Innkeeper (Wolfenbüttel)	0.8 – 0.5
Artisans (Baden, Nuremberg, Wolfenbüttel)	0.6 – 0.1
Unskilled Worker/Journeymen (Baden, Nuremberg, Wolfenbüttel)	0.4 – 0.2

^a The average excludes incomes of rich "Großhändler" and bankers.

Source: Luxury ratios for district magistrates: own calculation based on GLA 233/3387 and *Wunder*, Die Badische Beamtenschaft, p. 615. Peer group data was obtained from *K. Aßmann/G. Stavenhagen*, Handwerkereinkommen am Vorabend der industriellen Revolution. Materialien aus dem Raum Braunschweig-Wolfenbüttel, Göttingen 1969, pp. 11-12; 33 (factory owners, retail sector and innkeepers in Wolfenbüttel); *R. Straubel*, Kaufleute und Manufakturunternehmer. Eine empirische Untersuchung über die sozialen Träger von Handel und Großgewerbe in den mittleren preußischen Provinzen, Stuttgart 1995, p. 250 (merchants in Magdeburg); *H. Niens*, Kirchengut, Pfarrbesoldung und Baulast in der Evangelischen Landeskirche in Baden. Entstehung – Entwicklung – Probleme, Heidelberg 1991, p. 165 (clergymen); *Fischer*, Anfänge der Industrialisierung, pp. 364-365; 371-372; *R. Reith*, Auswirkungen der Not- und Teuerungskrise 1846/47 auf Erzeuger und Verbraucher am Beispiel Konstanzer Handwerkerhaushalte, in *T. Pierenkemper* (ed.), Haushalt und Verbrauch in historischer Perspektive. Zum Wandel des privaten Verbrauchs in Deutschland im 19. und 20. Jahrhundert, Sankt Katharinen 1987, pp. 125-147, here pp. 130–132 (workers, artisans and journeymen in Baden) and *R. Gömmel*, Wachstum und Konjunktur der Nürnberger Wirtschaft 1815-1914, Stuttgart 1978, pp. 103-104; 107 (artisans and journeymen in Nuremberg).

²⁰⁶ Cf. *Fischer*, Anfänge der Industrialisierung, p. 297.

²⁰⁷ Note, however, that the situation for members of the lower classes ameliorated. Skilled workers could now, for example, reach a luxury ratio above one which was a result of the industrialization.

Unfortunately, a more detailed comparison between the pre- and post-reform period is not possible, because the two – admittedly provisional – income distributions in table 2.9 and 2.10 are based on household types which partly differ in occupation and location. However, it does not seem that the relative position of district magistrates within the income distribution had changed much until the 1850's which supports the earlier finding of only little change of district magistrates' real remuneration during the first half of the 19th century.²⁰⁸

2.4.3 The Development of Relative Living Standards in the Second Half of the 19th Century

Until now I concentrated on the first half of the 19th century. Yet, as Kübler²⁰⁹ and Henning²¹⁰ argue, the relative position of Civil Servants in Germany deteriorated significantly in the second half of the century. Was this also true for district magistrates in Baden? To answer this question I will compare the development of district magistrates' real incomes with the living standards of blue collar workers.

To this end, I used Gömmel's index of nominal wages of blue collar workers and incomes of artisans.²¹¹ The index represents the lower 85 percent of the income distributions presented in table nine and ten. In a second step, I constructed subsistence ratios similar to the luxury ratio approach. In doing so, I used Allen's poverty line consumption basket with the new base period 1780-1789.²¹² The subsistence ratios will be compared to the development of district magistrates' luxury ratios during the second half of the 19th century. As figure 2.2 shows, subsistence ratios of blue collar workers and artisans stagnated until the late 1860's. During the 1870's real living standards commenced to rise. This development continued until the eve of WW I.²¹³ The lower bound of the luxury ratios of district magistrates, on the other hand, slightly decreased during the second half of the 19th century. At the upper bound district magistrates' luxury ratios

²⁰⁸ The comparison rather shows a decreasing living standard over the century. However, as argued above, when split up in smaller time periods living standards first increase and then seem to stagnate.

²⁰⁹ Kübler, *Besoldung und Lebenshaltung*.

²¹⁰ Henning, *Die deutsche Beamtenschaft*.

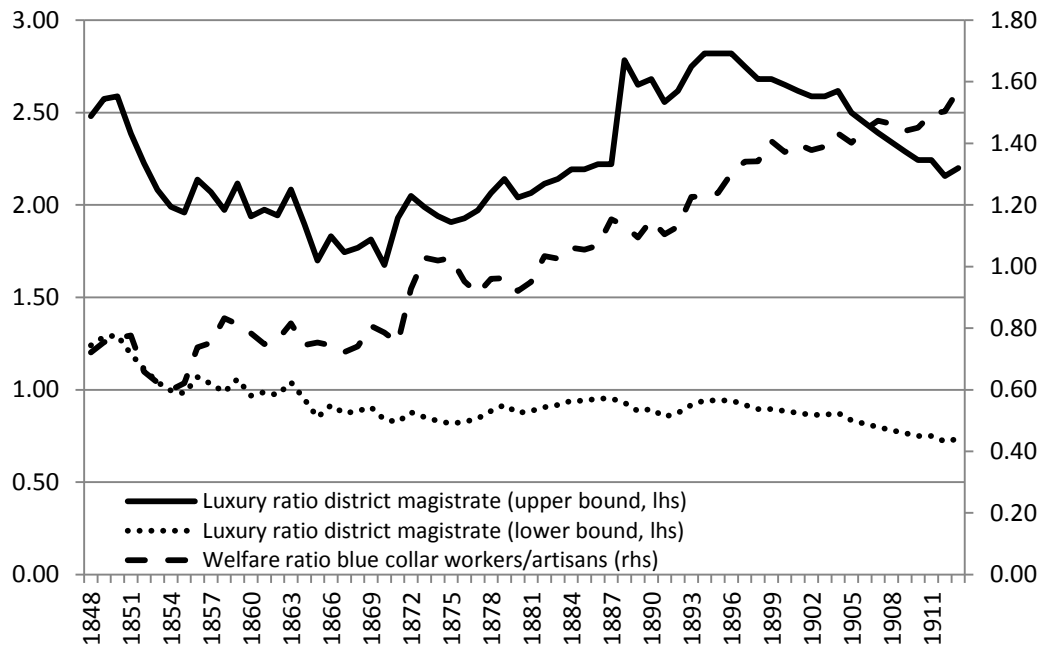
²¹¹ R. Gömmel, *Realeinkommen in Deutschland. Ein internationaler Vergleich*, Nürnberg 1979, pp. 19–29.

²¹² Allen also constructed subsistence ratios but called them welfare ratios.

²¹³ This view is confirmed by Baten who estimates living standards using anthropometric evidence. J. Baten, *Anthropometrics, consumption, and leisure: the standard of living*, in: S. C. Ogilvie/ R. Overy (ed), *Germany: a new social and economic history*, London 2003, pp. 383–422, here pp. 389-390; 400-401. See also J. Baten, *Ernährung und wirtschaftliche Entwicklung in Bayern. (1730 - 1880)*, Stuttgart 1999, pp. 88-112; 151-164.

first decreased, then rose and decreased again.²¹⁴ Yet, as mentioned above, positions at the top of the hierarchy were relatively rare and not every district magistrates reached the upper strata of the hierarchy. Thus, figure two confirms the Henning-Kübler view. That is, district magistrates lost ground compared to other social groups during the second half of the 19th century.

Figure 2.2: Welfare Ratios of Blue Collar Workers and Artisans and Luxury Ratios of District Magistrates, 1819 – 1913



A comparison with white collar workers further illustrates the deterioration of district magistrates' privileged position in the second half of the 19th century: During the 1870's, district magistrates' average real entry-level salary kept falling and slipped below the 1.0 threshold. In the next two decades average real entry salaries stagnated around 0.9 and dropped to 0.85 in the 1900's. White collar workers, on the other side, reached luxury ratios above 1.0 since the 1880's. And their luxury ratios grew further: in the 1880's they averaged 1.11, in the 1890's 1.30 and in the 1900's 1.63. Thus, also compared with better-situated households, district magistrates started to lose their privileged position within the income distribution of the economy since the last quarter of the 19th century.

²¹⁴ Cf. Wunder, *Die Badische Beamtenschaft*, pp. 620–622. The upper bound was increased by 400 fl from 2400 fl to 2800 in 1871. Remuneration also rose because of the conversion to the Mark in 1875. Wherever necessary, remuneration was rounded. The second pay rise took place in 1888 when a new civil service law was introduced.

Table 2.11: Average Luxury Ratios of District Magistrates and White Collar Workers in the Machine Factory Esslingen

Period	District Magistrates		White collar workers
	Upper Bound	Lower Bound	
1870's	2.02	0.87	0.90
1880's	2.33	0.93	1.11
1890's	2.74	0.92	1.30
1900's	2.54	0.85	1.63

Sources: Own calculation. Nominal data is from *Großherzogtum Baden, Gesetz- und Verordnungsblatt für das Großherzogtum Baden* 1888, pp. 466–469 and *Wunder, Die Badische Beamtenschaft*, pp. 615; 620-622 and *W. Fischer/J. Krengel/J. Wietog, Sozialgeschichtliches Arbeitsbuch I. Materialien zur Statistik des Deutschen Bundes 1815-1870*, München 1982, pp. 149–152.

2.5. Conclusion

The results of the chapter can be summarized as follows: Real living standards of district magistrates in Baden were already high during the 18th century and did not change much during the first third of the 19th century. This is true for measuring living standards in absolute terms using the luxury ratio approach as well as in relative terms comparing district magistrates' living standards with those of other social groups. Nevertheless, district magistrates benefitted from the abolishment of the discriminatory 18th century remuneration scheme and the introduction of better pension schemes and widows insurance after 1809. Yet, while the welfare effects of pension payments were quite considerable the effects of the former improvement were small. Although discriminatory rules that favored noble magistrates were abolished between 1809 and 1819, high-paid positions at the top of the hierarchy remained scarce and thus hard to achieve.

The relative position of district magistrates in the income distribution seemed to deteriorate since the second half of the 19th century. During the last quarter of the century real wages of blue collar workers and artisans started to increase while district magistrates' remuneration decreased or stagnated for most of the time. While blue collar workers did not reach district magistrates' real income in absolute terms, white collar workers did. Since the 1880's, luxury ratios of white collar workers exceeded district magistrates entry salaries.

The empirical analysis thus confirms the hypothesis that district magistrates' remuneration granted a good living and reflected social status. Until the mid 19th century, real remuneration was also very competitive which may have attracted high skilled individuals who otherwise would have chosen a career in the private sector.

However, material well-being of local Civil Servants in Baden was already high during the late 18th century and thus not a result of the Napoleonic Reforms at the beginning of the 19th century. From a material point of view, it also seems that the hypothesis only holds for the first third of the 19th century, for district magistrates' privileged position deteriorated in absolute as well as in relative terms since the second half of the century.

The deterioration of district magistrates' relative living standards in Baden is, at first impression, a result of Germany's industrialization which gained momentum in the last quarter of the 19th century. However, there is no reason why Civil Servants should not have participated in the country's growth through the redistribution of the gains from industrialization. Hence, there has to be a deeper reason why relative living standards of district magistrates decreased during the late 19th century. A possible explanation for Baden is that Civil Servants lost influence as a pressure group compared to the rising power of the working class and the bourgeoisie:²¹⁵ While the former emerged as an important political factor since the 1860's, citizens' control over the administration rose during the same time. The administrative reform of 1864 introduced institutions of self-government and thus weakened district magistrates' freedom of action. Furthermore, the second chamber of the diet (state parliament) increased its control over the budget restricting the government's possibility to raise Civil Servants' remuneration.²¹⁶ There is also a further explanation. During the 19th century a more and more well-working system of audits was established reducing the government's need to discipline its Civil Servants by paying them a high real wage. This explanation is studied in further detail in the following chapter.

²¹⁵ Cf. *T. Nipperdey*, *Deutsche Geschichte. 1800 - 1866. Bürgerwelt und starker Staat*, München 1983; *T. Nipperdey*, *Deutsche Geschichte 1866-1918. Arbeitswelt und Bürgergeist*, München 1994 and *T. Nipperdey*, *Deutsche Geschichte 1866-1918. Machtstaat vor der Demokratie*, München 1995³

²¹⁶ Cf. *R. v. Krosigk*, *Bürger in die Verwaltung! Bürokratiekritik und Bürgerbeteiligung in Baden; zur Geschichte moderner Staatlichkeit im Deutschland des 19. Jahrhunderts*, Bielefeld 2010.

3. Implementing Administrative and Legal Reforms in Baden during the 19th century

3.1. Introduction

This chapter concentrates on the question of how administrative processes and the rules of professional conduct were enforced in Baden during the 19th century. Its main contribution lies in the quantitative analysis of the incentive mechanisms of the labor market for state officials.

In this chapter I suggest that the Civil Service reforms²¹⁷ in the first two decades of the 19th century established an internal labor with a hierarchy of pay levels and clearly defined rules of promotion.²¹⁸ These rules of promotion made advancement in the hierarchy, and therefore an increase of remuneration, inter alia dependent on the performance in regard to administrative processes and rules of professional conduct. This rule generated an incentive to implement the new formal administrative and legal rules, because sticking to the rules led to a monetary reward. However, because it is impossible to observe directly whether or not bureaucrats – called Civil Servants – obeyed administrative processes and adhered to the rules of professional conduct, this hypothesis cannot be tested directly. Fortunately, there exist records that include supervisors' assessments about the ability and willingness to obey to these rules for district magistrates (*Amtmänner*). For the sub-group of district magistrates I could therefore test my hypothesis by asking in a first step whether or not promotion was dependent on the assessment of a district magistrate's performance in regard to administrative processes and rules of professional conduct. In a second step I will then test whether or not career prospects of district magistrates in the Grand-Duchy of Baden

²¹⁷ The Civil Service reforms culminated in the Civil Service Reform Law of 1819. For a detailed description see *Wunder*, *Die Badische Beamtenschaft*.

²¹⁸ The classic work about internal labor markets is: *P. B. Doeringer/M. J. Piore*, *Internal labor markets and manpower analysis*, Armonk 1985. For further theoretical literature see: *E. P. Lazear/Rosen Sherwin*, Rank-Order Tournaments as Optimum Labor Contracts, in: *The Journal of Political Economy* 5, 1981, pp. 841–864; *J. M. Malcomson*, Work Incentives, Hierarchy, and Internal Labor Markets, in: *The Journal of Political Economy* 3, 1984, pp. 486–507 and *M. A. Meyer*, Biased Contests and Moral Hazard: Implications for Career Profiles, in: *Annales d'Economie et de Statistique* 25/26, 1992, pp. 165–187.

The internal labor market model has already been used in other empirical studies. See for example: *H. Shpayer-Makov*, Career Prospects in the London Metropolitan Police in the Early Twentieth Century, in: *Journal of Historical Sociology* 4, 1991, pp. 380–408 and *P. Howlett*, The internal labour dynamics of the Great Eastern Railway Company, 1870-1913, in: *The Economic History Review* 2, 2004, pp. 396–422.

during the 19th century were dependent on these assessments employing a logit as well as panel regression analysis.

In total, 79 districts (*Ämter*) existed in 1841 which were managed by 163 district magistrates. Some districts were only staffed with one magistrate (30 Percent), but most districts were managed by two magistrates (70 percent).²¹⁹ My sample contains 73 district magistrates that were employed between 1803 and 1866 and retired between 1832 and 1902, thus covering the entire 19th century.²²⁰ This figure represents 22 percent of the 331 district magistrates about whom information can be found for this period in the archive of the Grand-Duchy of Baden – the *Generallandesarchiv* in Karlsruhe.²²¹ I have analyzed the entire sample of available records. Unfortunately, not every file contained information about remuneration which reduced the number of district magistrates that I could integrate into my dataset to 73 individuals.²²² I could find no clear patterns for missing information about remuneration, except for the fact that the probability of finding information about remuneration rose slightly with time.

The remainder of the chapter is organized as follows: The following two sections describe the labor market for state officials. While the second section focuses on the hierarchy and district magistrates' career prospects, the third section analyzes the central government's promotion rules and the determinants of their staffing decisions. The fourth and the fifth sections introduce the panel regression model and the logit model, respectively. The sixth section discusses some qualifications and caveats while the last section concludes.

²¹⁹ There were few districts that were staffed with three or more magistrates. These districts are subsumed in the figure for districts that were managed by two magistrates. For a more detailed description see *Eibach, Staat and Krapp, Die badische Ämterorganisation*. Since 1814 the number of district magistrates had increased (125 in 1814) while the number of districts had decreased (91 in 1814). As a result two-third of all districts were staffed with only one magistrate in 1814. (See *Eibach, Staat*, pp. 53–54). The number of district magistrates rose further during the following decades reaching 213 in 1869 and 237 in 1889. (See *Wunder, Die Badische Beamtenschaft*, pp. 592–594).

²²⁰ The names and shelf marks of all district magistrates included into the dataset can be found in the appendix.

²²¹ Because the catalogue is structured alphabetically, one needs a key that allows the identification of district magistrates. Such key is provided by Wechmar, who in 1846 published a volume that contained the names and ranks of all Civil Servants (*Wechmar, Handbuch für Baden und seine Diener oder Verzeichnis aller badischen Diener vom Jahr 1790 bis 1840, nebst Nachtrag von 1845, Heidelberg 1846*). Wechmar's work was supplemented by the Hof- und Staatshandbuch, a periodical that too provided information about names and function of all Civil Servants that were employed in the year of its publication. See: *Großherzogtum Baden, Hof- und Staatshandbuch des Grossherzogtum Baden, Karlsruhe 1834-1924*, here I used the issues of 1834 and 1857.

²²² Information about nominal incomes can be found on a loose sheet at the end of the personal file which could be a reason for the high loss rate.

3.2. The Hierarchy

For the existence of an internal labor market, it is necessary to observe a hierarchy of pay levels and one or several clearly defined entry ports to the hierarchy.²²³ Baden introduced such a hierarchy for its Civil Servants including a sole entry point in 1819.²²⁴ Internal labor markets are also characterized by a correlation of rank and the level of remuneration, e.g. a higher rank should be connected with a higher level of remuneration.²²⁵ As I will argue in the following paragraphs, this was also true for the hierarchy in Baden.

Entry into the hierarchy was made dependent on education:²²⁶ since 1803 a three year study of law was indispensable to enter the Civil Service.²²⁷ In 1823 the examination at the universities became standardized and the exams had to be authorized by the ministry of justice. During the same time, the nine year curriculum of the high school (*Gymnasium*) became compulsory to visit the university. Academic education was followed by two years of practical training in several administrative positions. Employment was then made dependent on the superiors' assessments and a sample work candidates had to send to the ministry of justice.²²⁸ If they passed, the trainees (called *Rechtspraktikanten*) could enter the Civil Service. Additionally, successful trainees earned the right to make submissions at the courts and at agencies which allowed them to work as lawyers.

The career path of a district magistrate was determined by the structure of the administration. The organization of the administration was reformed in 1809 using the French organization as a blueprint.²²⁹ The reform introduced a three level hierarchy for all branches of administration. In the case of the civil administration, which is of most interest here, the ministry of interior was at the top of the hierarchy. At the

²²³ Cf. Doeringer/Piore, Internal labor markets, pp. 43–50.

²²⁴ See Wunder, Die Badische Beamtenschaft, pp. 613–614

²²⁵ Cf. Doeringer/Piore, Internal labor markets, p. 70.

²²⁶ For the following see Wunder, Die Badische Beamtenschaft, pp. 267–292.

²²⁷ However, this was only true for those civil servants who were employed after 1803 and not for those who were employed before that date or were taken over from other territories between 1803 and 1815.

²²⁸ In 1854 the work sample was replaced by an exam which was supervised by the ministry of justice, called 2. *Staatsexamen*. The training of the *Rechtspraktikanten* (trainees) was reformed too. Training became more practice-oriented. Before 1854 trainees often were used as cheap clerks. Now, they assumed the daily duties of district magistrates but were supervised by an experienced magistrate.

²²⁹ For the administrative reforms see: Knemeyer, Regierungs- und Verwaltungsreformen in, pp. 146–162 See also Schwarzmaier, Baden: Dynastie - Land, pp. 162-176; 198-203; Lee, Politics of harmony and Weis, Französische Revolution. Andreas was the first who described the reforms at the beginning of the 20th century. Andreas, Aufbau.

intermediary level a new agency, called *Kreisdirektorium* or *Kreisregierung*, was introduced. In 1809 ten such agencies were created. Yet, because of missing qualified employees their number was reduced to six and then to four in 1819 and 1832, respectively. The *Kreisregierungen* should summarize the information of the districts, communicate the central agency's instructions to the districts and supervise and sanction district magistrates. The districts were at the bottom of the new structure but were responsible for the daily administrative as well as legal issues. As mentioned above, similar hierarchies existed in other branches of the administration. The legal administration, for example, was also organized as a three level hierarchy. Above the districts, four appellate courts, called *Hofgerichte*, and a supreme court (the *Oberhofgericht*) were established in 1809.

After we have described the organization of the administration, we can now turn to the question whether the Civil Service was characterized by a hierarchy. This question may be analyzed by examining the stylized career path of a typical district magistrate. In most cases successful trainees entered the Civil Service on the local level as *Assessor* (junior Civil Servants), who assisted experienced district magistrates.²³⁰ After a while they were promoted to the position of a district magistrate. Some districts were endowed with only one *Assessor* and one district magistrate. In such a case, the magistrate would automatically become the leading district magistrate (called *Amtsvorstand*). He then was responsible for all administrative and judicial issues. Yet, many districts were endowed with two or more positions for district magistrates. In such a case the magistrate would become second or third district magistrate and was responsible for one or two specific areas like the police or judicial issues. After a time, a magistrate could then be promoted to the position of a leading magistrate in such a larger district. Furthermore, there was the possibility to become a leading magistrate in one of the big cities²³¹ of the country. In the latter case the magistrate was called *Stadtdirektor* (city manager). Some magistrates even were promoted to an intermediary agency like a *Kreisregierung* or appellate court; there, they could become a director or a chief justice. A very small fraction advanced to the central agencies and became secretaries or even presidents or directors of these institutions.²³²

²³⁰ There were some candidates who entered the Civil Service directly on the intermediary level. Yet, the bulk of new employees entered at the local level.

²³¹ The biggest cities were Mannheim, Karlsruhe, Freiburg and Heidelberg.

²³² Cf. Wunder, *Die Badische Beamtenschaft*, pp. 307–311.

As table 3.1 shows, each rank in this career ladder was connected to another pay level. E.g. a higher rank in the hierarchy was correlated with a higher pay level. Furthermore, there existed several pay levels within one rank. Thus there were two types of salary increase: district magistrates could be promoted within a position and to a higher rank in the hierarchy.

Table 3.1: Scheme of District Magistrates' Career Prospects

Rank	Remuneration in fl. (guilders)
Trainee (<i>Rechtspraktikant</i>)	no remuneration ^a
Junior Civil Servant (<i>Assessor</i>)	600 – 800 – 1000
District magistrate (<i>Amtmann</i>)	1200 – 1400 – 1600 – 1800 – 2000 – 2200 – 2400
City Manager (<i>Stadtdirektor</i>)	2600 – 2800
Director of an intermediary agency ^b	3000 – 3500 – 4000

^a Trainees did not receive a fixed remuneration, but some individuals succeeded to get a small compensation.

^b There were other positions at the intermediary and central levels of the administration which a district magistrate could achieve. Yet, these positions were paid similarly.

Source: (*Wunder, Die Badische Beamtenschaft zwischen Rheinbund und Reichsgründung (1806-1871)* 1998, p. 615) and (*von Müller, Der öffentliche Dienst in Baden im 19. Jahrhundert* 1974, p. 119) See also GLA 233/3387.

This stylized career path can be illustrated with the particular career of the district magistrate Julius Fecht.²³³ During his career Fecht experienced both types of promotion (see table 3.2). He started his career as *Rechtspraktikant* at the ministry of Justice in 1840. In this position he even received a small compensation of 440 fl.²³⁴ Three years later he became an *Assessor* in Gernsbach where he earned a salary of 800 fl (guilders) p.a. Later, he was removed to the appellate court in Bruchsal where he earned 1000 fl. In 1847, Fecht received a salary increase of 100 fl without being promoted to another rank. Two years later, Fecht became the leading district magistrate in Pforzheim and received a yearly remuneration of 1600 fl. In 1854 he received a salary increase of 200 fl, again without being promoted to a higher rank. This kind of salary increase was repeated in 1856 and 1858. In 1861, Fecht was promoted to the position of the *Stadtdirektor* of Heidelberg with a remuneration of 2200 fl. Four years later, Fecht even get hold of a position in the ministry of interior that was donated with 3000 fl. In this position he received two salary increases to 3100 fl and 3300 fl in 1866 and 1868, respectively. In the last stage of his career Fecht was the head of the administrative

²³³ Information about the career of district magistrate Fecht can be found in his personal file in the Generallandesarchiv Karlsruhe, section 76, fascicle 2174 (thereafter cited as GLA 76/2174).

²³⁴ Monetary compensation was an exception and not granted to all trainees.

court where he first received 3200 fl.²³⁵ However, since 1871 he received, until his death in 1874, 3800 fl.

Table 3.2: Career Path of District Magistrate Julius Fecht, 1840-1874

Period	Position	Remuneration in fl. (guilders)
1840 – 1843	Trainee (<i>Rechtspraktikant</i>) at the ministry of Justice	440
1843 – 1845	Junior Civil Servant (<i>Assessor</i>) in Gernsbach	800
1845 – 1849	Junior Civil Servant (<i>Assessor</i>) at the appellate court in Bruchsal	1000 1100 (since 1847)
1849 – 1861	Leading magistrate (<i>Amtsvorstand</i>) in Pforzheim	1600 1700 (since 1854) 1800 (since 1856) 2000 (since 1858)
1861 – 1864	City Manager (<i>Stadtdirektor</i>) in Heidelberg	2200
1864 – 1869	Landeskommissar at the ministry of interior (stationed in Mannheim)	3000 3100 (since 1866) 3300 (since 1868)
1869 – 1874	Head of the administrative court in Bruchsal	3200 3800 (since 1871)

Source: GLA 76/2174.

3.3. Promotion Rules and the Determinants of Staffing Decisions

Besides the existence of a hierarchy, a clearly defined rule that binds promotion to the performance in regard to administrative processes and the rules of professional conduct is necessary for the working of an incentive to implement this new formal institutional framework, e.g. the new administrative and legal rules. Yet, the mere existence of such a rule does not suffice. The rule has also to be relevant, that is it has to be used in promotion decisions. Therefore this section is divided in two parts. While the first section describes the formal rules of promotion, the second part analyses the actual determinants of staffing decisions.

3.3.1 Promotion Rules

Formally, all staffing decisions were made by the Grand-Duke according to a recommendation of the ministry of interior and the *Kreisregierungen*.²³⁶ In most cases

²³⁵ The drop from 3300 fl to 3200 fl in 1869 when Fecht was promoted to the position of the head of the administrative court can be explained by the loss of a compensation that Fecht received because of his job of a *Landeskommissär*. In this position Fecht travelled a lot and thus received a high allowance for his special expenditure. This allowance was removed when he became head of the administrative court.

²³⁶ Cf. Wunder, Die Badische Beamtenschaft, p. 325.

the final decision of the ministry of interior was countersigned without an objection by the ministry of state that represented the Grand-Duke. Yet, in some cases during the first half of the 19th century, district magistrates successfully intervened on the Grand-Duke's behalf against decisions of the ministry of interior.²³⁷ Full independence in staffing decisions was won by the ministry around mid-century.²³⁸

Regarding staffing decisions like employment, relocation and promotion the ministry of interior demanded more and more adherence to the rules of professional conduct and the implementation of administrative processes. In 1830 the ministry announced to the *Kreisregierungen* that it would use personal records as a basis of decision making and that they therefore should document district magistrates' "abilities and misbehavior".²³⁹ But the government became even more precise. In 1835 and 1844 the ministry of interior and the ministry of justice passed two detailed regulations about the inspection of district magistrates in administrative and judicial issues, which provide information about the central agencies' definition of "ability and misbehavior".²⁴⁰ The regulations instructed supervisors on which issues they should pay particular attention when they visited the district. Both regulations instructed supervisors to verify magistrates' ability to manage a district in general as well as their knowledge in administrative and legal issues. Furthermore, supervisors should control, if district magistrates implemented administrative processes and if they obeyed to the government's instructions. At last, supervisors should report about magistrates' conduct and personality. In this context government demanded also a calm and friendly demeanor vis-à-vis citizens; this was especially emphasized for magistrate's behavior during court hearings. The government, thus, controlled exactly for the performance in regard to the newly introduced administrative processes and rules of professional conduct.

²³⁷ This can be seen as a hint to patronage networks through which district magistrates tried to circumvent the formal promotion process. Yet, given the available records patronage seems not to be very common at the beginning of the century and lost more and more ground when the ministry of interior gained full control over promotion decisions.

²³⁸ von *Meldegg*, *Aus den Erinnerungen*, p. 4.

²³⁹ See GLA 236/8989 (Ministry of interior to *Kreisregierungen*, Karlsruhe, September 18, 1830. The record is also cited by *Wunder*, *Die Badische Beamtenschaft*, pp. 164–165. Cf. also *Lee*, *Politics of harmony*, p. 68, who states that the ministry of interior announced to made promotions dependent on merit since the 1820's. However, Lee also finds several examples where seniority played the bigger role in staffing decisions during the 1820's.

²⁴⁰ The regulation of 1835 concerning administrative issues can be found in GLA 233/30343 (Ministry of interior to ministry of state, Karlsruhe, January 20, 1835). The regulation of 1844 concentrating on legal issues can be found in the Staatsarchiv Freiburg section 16/1 fasc. 122 (*Instruktion über die Visitation der Justizverwaltung*, Karlsruhe June 24, 1844).

Yet, even when promotion decisions were announced to be linked to the performance in regard to the implementation of the new formal institutional framework, this rule had to be actually used by the ministry of interior, if it should serve as an incentive for district magistrates to adopt this new formal institutional framework. The next section deals with this question by analyzing employment decisions of the ministry of interior on the basis of the communication between district magistrates, the ministry of interior and the *Kreisregierungen*.

3.3.2 The Determinants of Staffing Decisions

Promotion to a higher rank as well as promotion within a rank may be determined by performance or seniority or, most probable, by both features. In this sub-section I analyze the staffing policy on the basis of personal files that are available in the Generallandesarchiv in Karlsruhe. These files contain information about the magistrates' remuneration, the results of audits, reprimands, petitions of district magistrates as well as edicts and instructions of the ministries and *Kreisregierungen*. Furthermore, the records provide information about the communication about remuneration related issues between district magistrates and their superiors from which we can deduce the determinants of the staffing decisions made by the ministry of interior.

Communication covered mainly three topics: *Rechtspraktikanten* (trainees) asked the ministry of interior about an employment in the Civil Service, district magistrates wanted to be relocated, or asked for a pay rise. Magistrates mainly argued with their loyalty and seniority, especially in comparison with their peers, as well as with high costs of living and the need to support their family on a socially adequate level.²⁴¹ Sometimes, magistrates also argued with their personal convenience. District magistrate Kaiser, for example, refused his relocation from Heiligenberg at the Lake Constance to the nearby Pfullendorf, because of the proximity to his parents and parents in law. He furthermore argued that the climate in Pfullendorf would not be good for his wife. At last, he mentioned that Heiligenberg had better schools for his children.²⁴²

²⁴¹ Cf. for example the file of district magistrate Franz Josef Bauer. GLA 76/357 (District magistrate Bauer to Grand-Duke, Überlingen, October 25, 1821 and district magistrate Bauer to Grand-Duke, Lörrach, October 15, 1823). Cf. also the file of district magistrate Gustav Friedrich Jägerschmidt. GLA 76/3894-6 (District magistrate Jägerschmidt to ministry of interior, Gengenbach, February 7, 1811). These arguments can also be found in later years. Cf. for example the file of the district magistrate Philipp Pfeiffer (District magistrate Pfeiffer to Grand-Duke, Adelsheim, May 31, 1840).

²⁴² Cf. for example magistrate Kaiser; GLA 76/4035 (District magistrate Kaiser to ministry of interior, September 31, 1849).

The ministry of interior on the other side accepted not every argument brought forward by the magistrates. As table three shows, it discriminated between three different policy-types. Decisions about permanent employment of *Rechtspraktikanten* and relocation to another position were mostly made dependent on the performance in regard to administrative processes and rules of professional conduct. This procedure can be illustrated by the example of district magistrate Demetrius Messmer: In 1828 the then-*Rechtspraktikant* Messmer had tried for several years to receive a fix employment in the Civil Service. In doing so, he referred to his good grades and favorable references about his administrative and legal skills that he received from his supervisors. He also argued with his seniority and the remark that he was one of the oldest *Rechtspraktikanten* in the whole country and all his peers were already employed in the Civil Service.²⁴³ Yet, when the ministry of interior finally employed Messmer as Assessor it emphasized his good grades and references and *not* his seniority as reason for its decision.²⁴⁴

Table 3.3: Ministry of Interior's Determinants of Staffing Decisions

Pledge for:	Reason for Decision:		
	Observation of admn. processes and rules of prof. conduct	Tenure	Granting adequate living standard
(fix) Employment	X	-	-
Relocation	X	-	-
Promotion	-	X	X

The ministry was also keen to staff important and complex districts only with those magistrates who met the appropriate requirements. In 1840 district magistrate Philipp Pfeiffer asked the Grand-Duke for relocation from the small district of Adelsheim in the Odenwald to the larger district of Neckargemünd, which the ministry of interior had refused for several times.²⁴⁵ Apparently, Pfeiffer missed all the skills that would be necessary in a larger and more complex district like Neckargemünd. He did not implement the new administrative processes, neglected the rules of professional conduct, did not adopt the new legal rules, did not recognize important issues, ignored instructions, possessed no authority and was stubborn, for he repeated these errors again and again. For these reasons the *Kreisregierung* and the ministry of interior

²⁴³ See file of the district magistrate Demetrius Messmer. GLA 76/5285 (Messmer to ministry of interior, Lahr, February 2, 1828 and Messmer to ministry of interior, Lahr, June 13, 1828).

²⁴⁴ Ibid, concept of the ministry of interior, Karlsruhe, September 12, 1828.

²⁴⁵ See file of the district magistrate Philipp Pfeiffer. GLA 76/5862 (District magistrate Pfeiffer to Grand-Duke, Adelsheim, May 31, 1840).

refused Pfeiffer's relocation when the Grand-Duke asked them to reconsider their decision. Both agencies emphasized that the appointment to a district had to be dependent on the magistrate's administrative and legal skills.²⁴⁶ E.g. the *Unterrheinkreis* argued in particular that:

*“[der] Dienst nicht nach den Wünschen der Personen, sondern
die Personen nach den Bedürfnissen des Dienstes
auszuwählen [seien].”²⁴⁷*

On the other hand, promotions within a position were mostly made according to seniority. For example, while the *Kreisregierung* advised the Grand-Duke not to relocate Pfeiffer to Neckargemünd, it saw no reason to deny Pfeiffer a pay rise because of his seniority.²⁴⁸ Furthermore, the ministry was keen to grant its employees a decent standard of living. This was especially true when the district magistrate argued that he could not support his family²⁴⁹ or when the costs of living were considerably above-average like in Lörrach.²⁵⁰

The analysis of district magistrates' personal files shows that performance in regard to administrative processes and the rules of professional conduct mattered in the promotion decisions of the ministry of interior.²⁵¹ Thus, promotion according to these features could serve as an incentive for district magistrates to implement the new formal institutional framework, e.g. the new administrative and legal rules. But promotion was not only dependent on these skills. Seniority and the government's effort to grant his employees a decent standard of living were also important determinants of the promotion decision. Furthermore, it also seems that the availability of funds limited the government's expenditure for district magistrates' remuneration as well.²⁵² On the basis of the anecdotic evidence presented in this section it is however hard to quantify the importance of performance, seniority and other factors for the

²⁴⁶ Ibid, report of the *Unterrheinkreis*, Mannheim June 13, 1840 and ministry of interior to ministry of state, Karlsruhe, November 11, 1841 (The ministry of state represented the Grand-Duke).

²⁴⁷ Ibid, report of the *Unterrheinkreis*, Mannheim June 13, 1840. Transl.: “a position cannot be filled according to the wishes of a person, but has to be filled according to the requirements of this particular position.”

²⁴⁸ Ibid.

²⁴⁹ See for example the personal file of district magistrate Julius Betz. GLA 76/738 (District magistrate Betz to ministry of interior, Ladenburg, August 9, 1844).

²⁵⁰ See for example personal file of district magistrate Carl August Baumüller. GLA 76/416 (District magistrate Baumüller to ministry of interior, Lörrach, May 5, 1820).

²⁵¹ Patronage networks, on the contrary, played only a minor role. On this low level, patronage was more common during the early decades of the 19th century.

²⁵² Cf. Wunder, *Die Badische Beamtenschaft*, p. 328.

promotion decision. Other studies face similar problems. Wunder, for example, mentions that merit was an important factor in employment and promotion decisions.²⁵³ But he also emphasizes tenure as another important determinant of staffing decisions.²⁵⁴ However, Wunder's analysis is also based on anecdotic evidence and fails to quantify the importance of the different promotion-criteria.

A panel regression analysis that explains the level of real remuneration with district magistrates' tenure and performance; that is his ability and willingness to implement administrative processes as well as to adhere to the rules of professional conduct, may help to overcome the shortcomings of the classic heuristic method. If the regression analysis finds a link between remuneration and performance, this link can be interpreted as an incentive for district magistrates to implement the new formal institutional framework. That this hypothesis is true may have two reasons: As I have argued above, the skill-level was an important determinant for relocations. In particular, the ministry of interior sought to staff larger and more complex districts like towns or districts with a high population density with high-performing magistrates. But these districts were also those with the highest ranks on the local level. E.g., while remuneration in smaller districts was limited to 1800 fl, a district magistrate in one of the big towns of the country could earn up to 2800 fl.²⁵⁵ Relocation according to performance may thus have increased the possibility to be relocated to an important district and thus to jump to a higher rank in the hierarchy of pay levels. The same argument holds for positions above the local level. Positions at the intermediary level of the administration were also mostly allocated according to performance.²⁵⁶ And these positions were even better paid than the top-positions on the local level. Remember from table 3.1 that the directors of the *Kreisregierungen* and the *Hofgerichte*, for example, earned up to 4000 fl.

3.4. Panel Regression

In order to quantify the impact of performance and seniority, a fixed-effects panel regression model is introduced in this section. The model will explain real income of district magistrates as a function of performance, tenure and further variables. Unfortunately, it is impossible to observe district magistrates' performance in regard to administrative processes and rules of professional conduct directly. This variable is

²⁵³ See Wunder, *Die Badische Beamtenschaft*, pp. 324-325, 327.

²⁵⁴ See Wunder, *Die Badische Beamtenschaft*, p. 328. In his footnotes, Wunder also mentions personal conduct, the requirements of the position and the availability funds as decision criteria.

²⁵⁵ Cf. Eibach, *Staat*, pp. 82-83 and Wunder, *Die Badische Beamtenschaft*, pp. 615-616.

²⁵⁶ Cf. Wunder, *Die Badische Beamtenschaft*, p. 332.

therefore measured by analyzing supervisors' assessments about magistrates' administrative and legal skills, their ability and willingness to obey to administrative processes as well as to adhere to the governments' instructions and to treat citizens in a friendly manner. In doing so, I am using the available information about nominal incomes and assessments from 73 district magistrates that were employed between 1803 and 1866.²⁵⁷ This represents ca. 22 percent of all accessible personal files of district magistrates in the Generallandesarchiv.

Figure 3.1: Year of Initial Employment and Retirement



Before we construct the empirical model it would be desirable to look on some descriptive statistics that can give a first hint of how real incomes varied with tenure and supervisors' assessment of the performance in regard to administrative processes and rules of professional conduct. Referring to real income data is necessary, because the sample covers almost the entire 19th century. As mentioned above, district magistrates in the sample were employed between 1803 and 1866 and retired between 1832 and 1902, whereby the bulk of data concentrates around 1820 and 1880 (cf. figure 3.1). In order to eliminate possible inflation effects, real income was constructed by deflating nominal incomes with the luxury consumption basket presented in the previous chapter.

²⁵⁷ The names and shelf marks can be found in the appendix.

Figure 3.2: Development of Real Incomes over Time

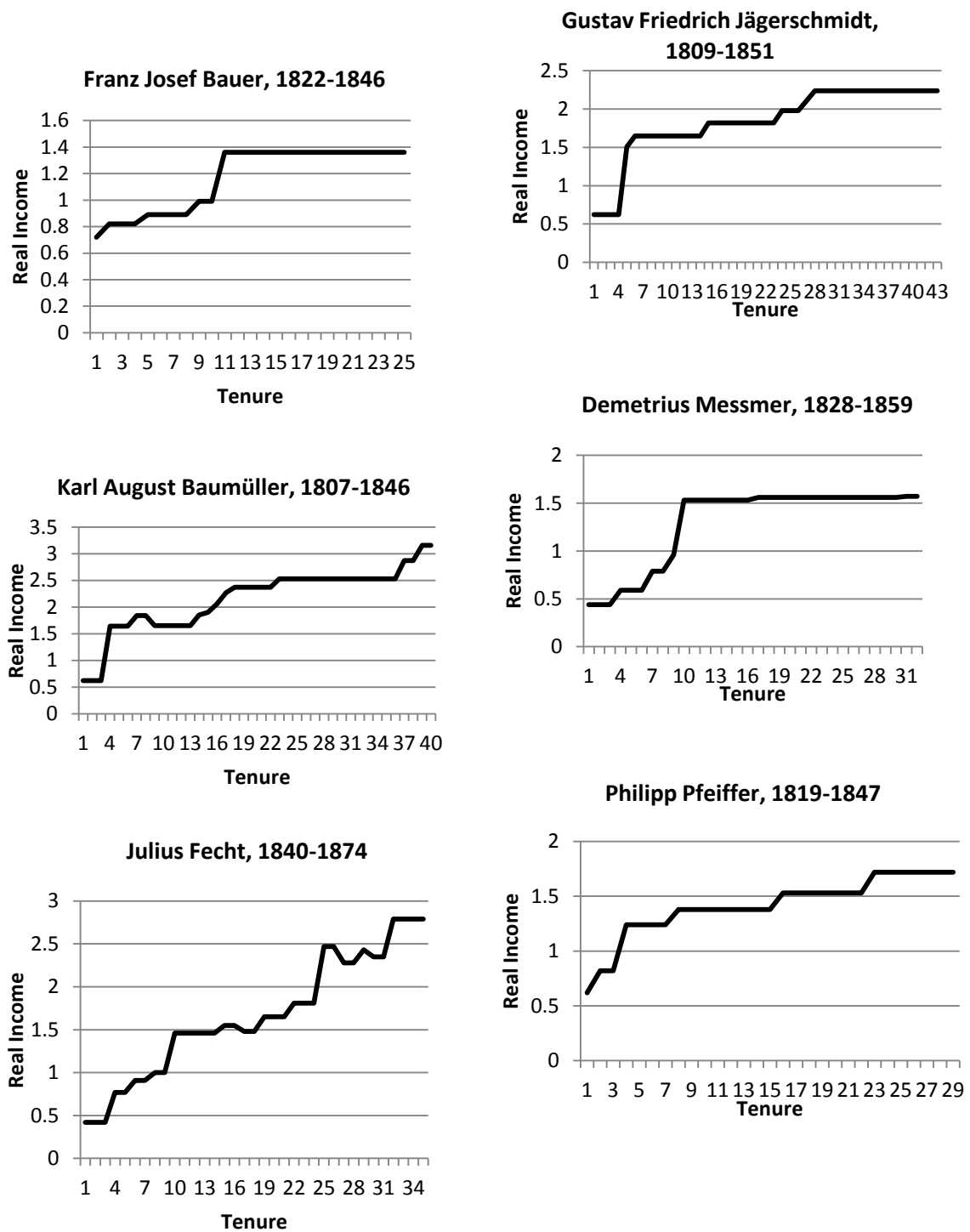
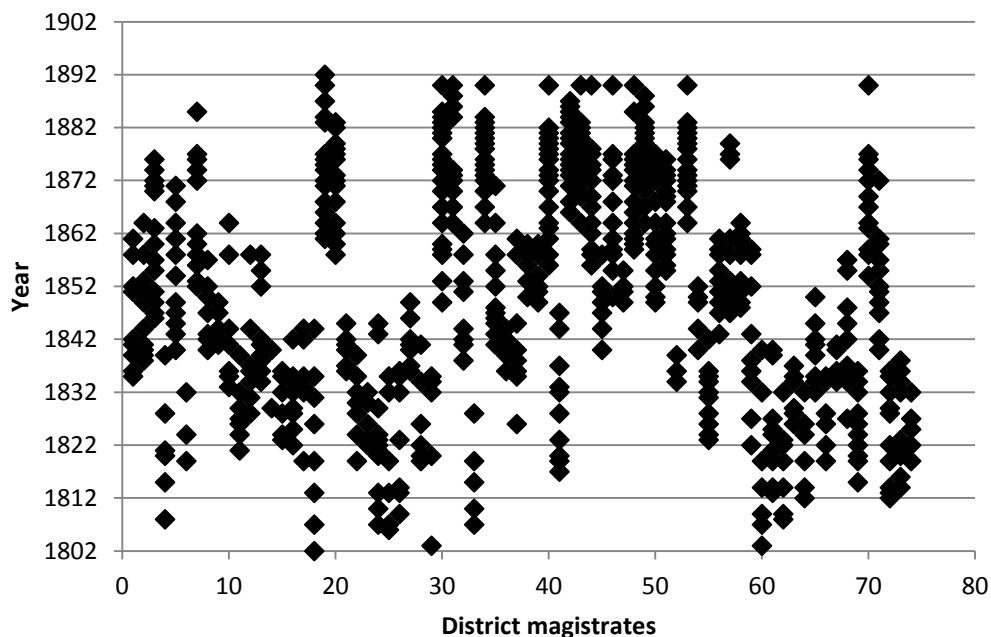


Figure 3.2 depicts the detailed development of real incomes over time of six selected district magistrates. All curves show a concave shape. That is, real incomes rose with tenure but with a decreasing slope. The empirical model should reproduce this concave shape. The model should also mirror another development. In 1865 the government introduced a rule that granted judges a salary increase every three years. In 1888 a similar rule for the civil branch of administration followed.²⁵⁸ This rule may have accelerated promotion. That this was really the case is suggested by figure 3.3 that indicates the dates of promotion for all 73 district magistrates in the sample. District magistrates, who were employed after 1850, seemed to be promoted more often and more regularly. In order to account for this phenomenon, the model should include time dummies for each year.

Figure 3.3: Promotion Paths of 73 District Magistrates



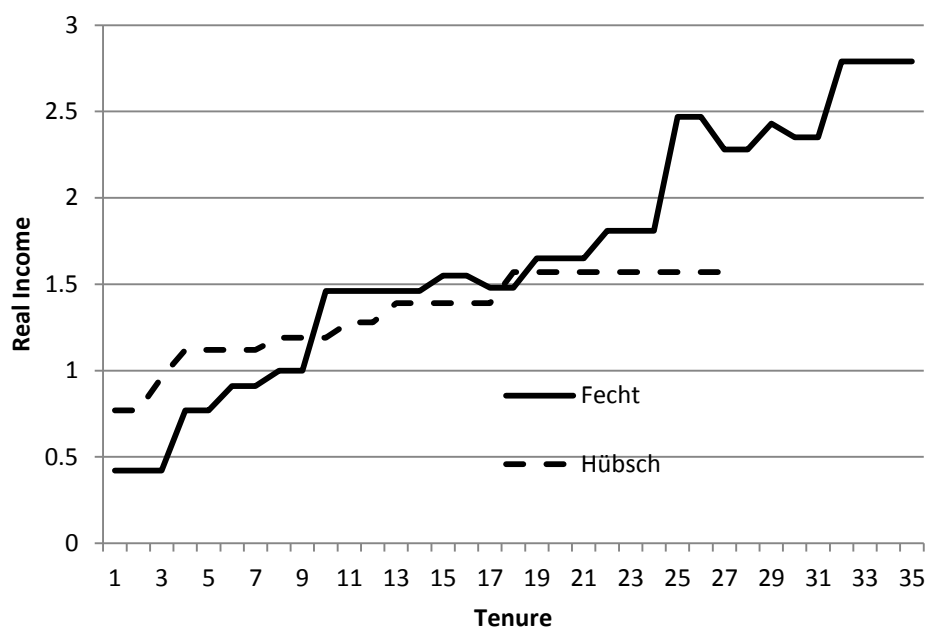
Note: Each number between one and 73 defines one district magistrate. The dots define the year of promotion of a particular district magistrate.

Real incomes rose with seniority. But how did supervisors' assessments about performance affect income. Figure 3.4 gives a first answer to this question. The figure compares a pair of district magistrates who differ in the results of the audits that were carried out by the *Kreisregierungen* and the ministry of interior. Magistrate Hübsch, for example, received several poor assessments which criticized his administrative and legal

²⁵⁸ Cf. B. Wunder, Die Beamtenschaft als Stütze des Großherzogtums in Baden während des 19. Jahrhunderts, in: Zeitschrift für die Geschichte des Oberrheins, 1996, pp. 381–396, here p. 391.

skills as well as his bearish behavior vis-à-vis citizens.²⁵⁹ In contrast, district magistrate Fecht received very good assessments. In two visitation reports from 1855 and 1858 the responsible supervisors were content with his management of the district.²⁶⁰ Besides of different assessments I tried to hold other variables constant: both magistrates were employed in 1840 and were located to districts in the same *Kreis* at the beginning of their career.²⁶¹ Career paths should therefore not be biased, because of time effects or of a different staffing policy of the director of the *Kreis* in the early years of a magistrate's career.²⁶²

Figure 3.4: Comparison of Different Career Paths of two District Magistrates



The career paths of the two magistrates differed in three aspects. First, the magistrate with the better assessments, Fecht, received after ten years of service a higher real remuneration than the one with the poor assessments. The two magistrates also differed in their deployment. Fecht managed the more important and better paid districts. He was, for example, leading magistrate in the bigger town of Pforzheim and city manager (*Stadtdirektor*) in Heidelberg, one of the countries four biggest towns.

²⁵⁹ See personal file of district magistrate Wilhelm Hübsch. GLA 76/3828 (several visitation reports in 1842, 1848, 1850, 1858 and 1861).

²⁶⁰ See personal file of district magistrate Julius Fecht. GLA 76/2174 (Visitation report, Pforzheim, November 5, 1855 and June 6, 1858).

²⁶¹ Fecht and Hübsch were both employed at districts in the *Mittelrheinkreis*. While Fecht was assigned to the districts Gernsbach and Bruchsal (1843-1849), Hübsch was first Assessor in Karlsruhe (1842-1843); he then became leading magistrate in Oberkirch (since 1843).

²⁶² The staffing policy of the director of the *Kreis* could influence a magistrates' work ethic (and thereby future assessments in another *Kreis*) by prosecuting neglects of duty more or less strict.

Fecht also became *Landeskommissär*, a supervisory position at the ministry of interior, and president of the higher administrative court. Hübsch, on the contrary, was located in the smaller districts of Oberkirch, Stühlingen and Phillipsburg. These differences in the location of the two magistrates can explain the income gap, for, as I mentioned above, the larger and more important districts were classified at a higher level within the hierarchical pay scheme. At last, the comparison of the two career paths shows that Fecht also had a longer career and thus was promoted more often than Hübsch. The latter was mainly due to the fact that Fecht succeeded to leave the local Civil Service and to achieve positions at the top of the hierarchy like the position of the *Landeskommissär* and the presidency of the higher administrative court.

Thus, it seems that a magistrate's performance in regard to administrative processes and rules of professional conduct influenced his real income as it was suggested in the last section: Magistrates with better assessments had higher real incomes. This was a result of the hierarchical pay scheme. High performing individuals were deployed in the large and important districts of the country. But these positions were considerably better paid than those in the smaller districts of the countryside. High performing district magistrates could also leave the local Civil Service for high-paid positions at the intermediary and central level of administration. Yet, if the correlation between supervisors' assessments and income should be tested formally, I have to construct a variable that measures these assessments of district magistrates' performance. Such a variable should be available for many points in time, because of the panel structure of the regression. Unfortunately, assessments are distributed very unequally in time and between district magistrates. E.g., for some magistrates only one assessment exists, while for other magistrates more assessments are available. But these assessments could be concentrated at the end of the magistrate's career. I dealt with this problem in two steps:

In a first step, I divided each report about a district magistrate's performance in regard to administrative processes and rules of professional conduct into several categories. These categories were legal and administrative skills, effort, assertiveness, behavior vis-à-vis citizens, remarks about a neglect of duty and the individual assessment of the supervisor. The latter included the supervisor's judgment whether the magistrate met the requirements of his actual position and whether he would recommend a promotion. The supervisors also mentioned whether a magistrate changed to a better after he was criticized in some points. The supervisor's report was translated into metric variables. A

good assessment in an individual category was translated into 1; a bad assessment was assigned to -1 and a neutral to 0. Note that the definition of an assessment is my subjective interpretation of the supervisor's subjective report to the ministry. In regard to the first drawback I made sure to define a report only as *good* or *bad* if the statement of the supervisor was clearly pronounced. The latter drawback was alleviated by the fact that the same supervisor seldom controlled a magistrate twice. Next, I computed the simple average of all categories that were mentioned in the report.²⁶³ An assessment was defined as *good*, if the simple average over all categories was greater than 1/3.²⁶⁴ Inversely, an assessment was defined as *bad*, if the simple average over all categories was smaller than -1/3. For all other cases the assessment was defined as *neutral*. Yet, one could argue that the simple un-weighted average of the categories presented above might distort the actual picture of a district magistrate's performance in regard to administrative processes and rules of professional conduct, because it included too many soft skills as well as the subjective assessment of supervisors. Therefore, I computed a second specification, which only includes magistrates' administrative and legal skills which are the key competences in regard of the implementation of the new formal administrative and legal rules.

In the second step, I dealt with the problem that the observations were distributed unequally across magistrates and time. I solved this problem by generating a variable that measures the share of good assessments which a magistrate received over his total time within the Civil Service. This variable serves as a proxy of the magistrate's performance in regard to administrative processes and rules of professional conduct. Formally, the variable represents a magistrates' fixed effect that is modeled explicitly. This procedure may be criticized by arguing that there are learning curves and magistrates' ability and willingness to implement the new formal institutional framework may therefore converge over time. Yet, this was apparently not the case. In a detailed study of the local Civil Service in Baden, Eibach could show that learning effects were more pronounced between different generations of district magistrates rather than within individual magistrates.²⁶⁵ Especially those magistrates that were employed before and during the extended reform period until the 1830's had problems to accept

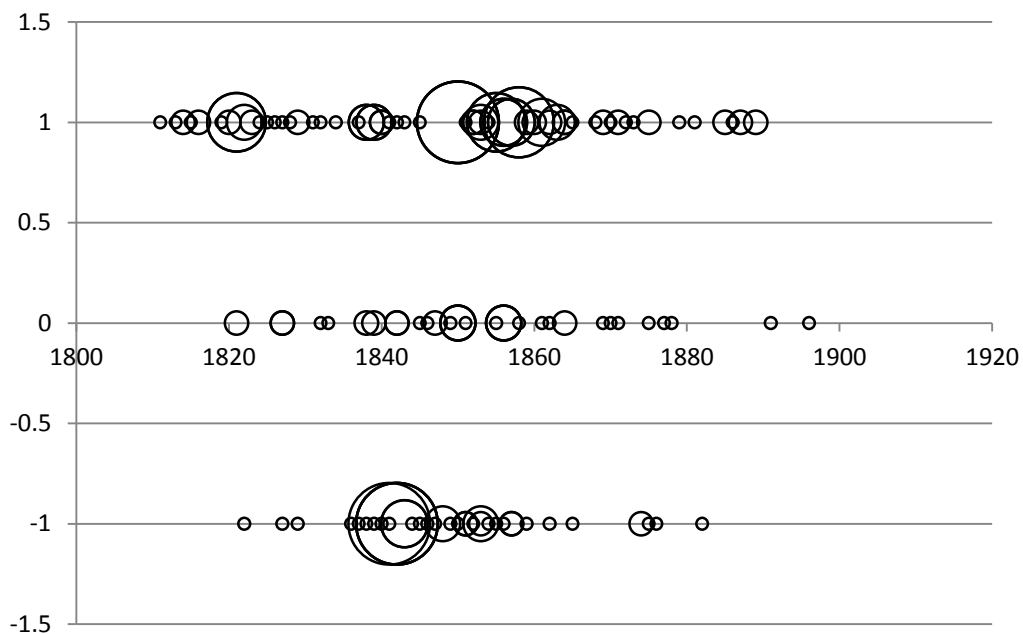
²⁶³ Not every report addressed every category. Some reports only contained one or two categories. In sum there were 121 observations in the category administrative skills, 92 for legal skills, 109 for effort, 46 for assertiveness, 87 for behavior vis-à-vis citizens, 36 demerit remarks and up to 65 subjective assessments of supervisors.

²⁶⁴ The average ranged from -1 to +1.

²⁶⁵ Cf. also for the following *Eibach*, Staat, pp. 81-83; 112-114 and 162-165.

their new role within the administration. In most cases, district magistrates worried about the fact that they had to give up their high scope of action that they enjoyed before the reform period. For this generation of magistrates it was also hard to learn the new administrative processes and rules of professional conduct. The code of legal procedure, for example, had over 1300 paragraphs which differed significantly from the procedure of the 18th century. Therefore it is not astonishing that some older magistrates never adopted this new code of procedure.

Figure 3.5: Good, Bad and Neutral Assessments over Time



Note: The size of a circle represents the number of assessments in a given year.

The results of the assessment variable that includes all categories are summarized in figure 3.5.²⁶⁶ The figure points to one important point: *Bad* and *neutral* assessments are concentrated in the three decades between 1830 and 1860. Before and after this period almost only *good* assessments can be observed. This is interesting, because it coincides with a change in the praxis of supervision. Until the early 1830's bureaucratic controls dominated in the process of supervision.²⁶⁷ Assessments were mainly based on reports or court decisions that were handed in to the *Kreisregierungen* or *Hofgerichte*, respectively. Yet, the obligation to report was limited to only some issues. Thus, the intermediary and central agencies often did not receive full information about the state of the local administration. Public unrest, critical reports in the press and especially the

²⁶⁶ The size of the circles indicates the frequency of equal assessments at one time. The picture is almost the same for the assessment variable that only includes the categories administrative and legal skills.

²⁶⁷ See for the following: *Eibach*, Staat, pp. 56-58; 74; 85-87; 98-102 and 105-109.

liberal opposition in the diet revealed the miserable state of the local administration during the 1830's and 1840's. As a reaction, the government introduced periodic visitations that were based on detailed reports of supervisors who visited the districts in regular intervals. At the same time, government instructed supervisors to be stricter in regard to a breach of the rules of professional conduct.²⁶⁸ In this context, the government passed the detailed regulations on which issues the supervisor should concentrate during the visitation.²⁶⁹ Figure 3.6 shows the distribution of these visitations in the sample. Detailed visitation reports are not available before the end of the 1830's. Thus, it is possible that the increase of *bad* and *neutral* assessments is a result of the introduction of the more detailed and more critical visitation reports.²⁷⁰ Yet, this phenomenon can be controlled for by employing the time dummies mentioned above. Because visitation reports were more detailed than bureaucratic controls, the former should reflected a district magistrate's performance more correctly. It is therefore reasonable to test whether the share of good visitation reports explains district magistrates' real income more accurately than the overall share of good assessments.

To summarize the argument so far, it would be helpful to formulate the two empirical baseline models:

$$Real\ Income_{it} = C_{it} + Tenure_{it} + Tenure_{it}^2 + ShareGood_i + Budget_t + D_t \quad (1)$$

and

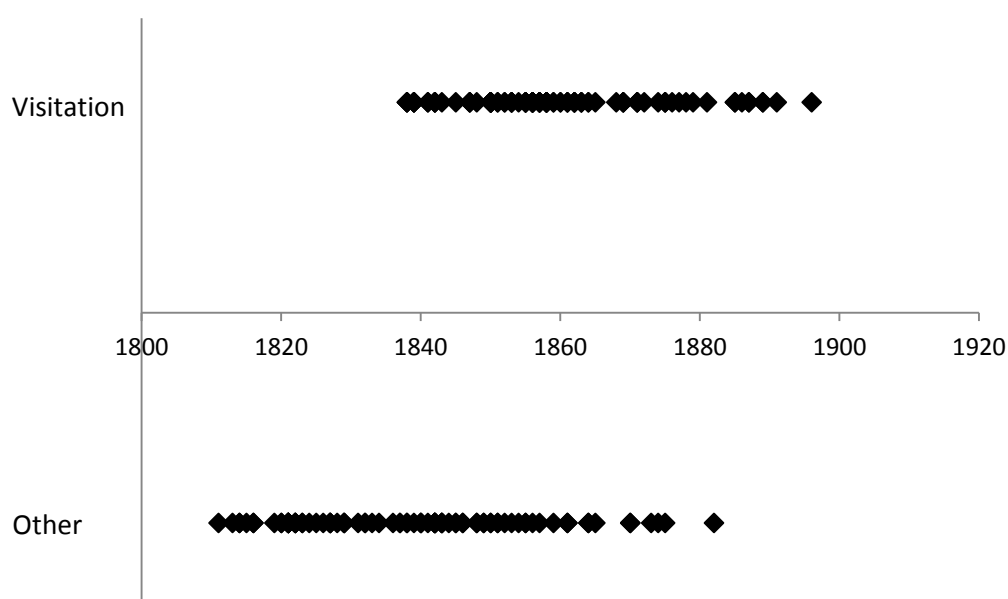
$$Real\ Income_{it} = C_{it} + Tenure_{it} + Tenure_{it}^2 + ShareGood_i + Tenure_{it} * ShareGood_i + Budget_t + D_t \quad (2)$$

²⁶⁸ Cf. the several edicts of the ministry of interior that instructed the *Kreisregierungen* to control district magistrates more strictly. These edicts can be found in GLA 236/8989. They are also cited by Wunder. Cf. *Wunder, Die Badische Beamtenschaft*, pp. 164–165.

²⁶⁹ The regulation also instructed supervisors to keep a diary about the visitation. The supervisor should make notes on all important points. After the visitation a copy of the diary was send to the *Kreisregierung* and the ministry of interior. An abstract of the report was stored in the personal files of the district magistrates.

²⁷⁰ It is interesting that *bad* and *neutral* reports started to increase before the revolution of 1848/9. Thus, stricter control of district magistrates was no reaction to the temporarily loss of monarchical power during the revolutionary years.

Figure 3.6: Distribution of Different Types of Assessments over Time



The models explain real income of district magistrate i at time t as a function of the magistrate's time of service at time t , the share of good assessments for each district magistrate i and the volume of the government's budget for remuneration in the civil and legal branch of administration at time t . The latter was included, because the available funds for remuneration could act as a natural limit to promotions. Hence, we would expect a positive correlation. In order to reflect the concave shape of the magistrates' live time income, the square of the tenure variable is added. Furthermore, time fixed effects are included.

The two models differ in one respect. While equation (1) only considers the share of good assessments, equation (2) also incorporates the interaction effect between the tenure variable and the share of good assessments. The two variables differ in their interpretation. The former represents the level effect and can be interpreted as the fix additional income that a district magistrate receives from a change in the share of its good assessments at every point during his career.²⁷¹ The latter variable influences the slope of the income function and therefore can be interpreted as the velocity of promotion. Comparing the two equations will give us information about the relative importance of the two effects. The baseline model will be expanded by further specifications which include the positive share of detailed visitation reports as well as the share of positive assessments based on the index that only considers administrative and legal skills.

²⁷¹ Technically, this is a change in the intercept.

Table 3.4 summarizes the results of the regression analysis. In the case of the tenure variable all coefficients have the expected positive signs. Quantitatively the coefficients do hardly change between the different specifications. For each additional year of service, real income increases by 0.07 luxury consumption baskets. Measured in grams of silver, a district magistrate's real wage would rise by almost a pound p.a. The squared tenure variable has also the expected negative sign reproducing the concave shape of the income curves.

The share of good assessments is only positive and significant when the interaction effect is ignored. Quantitatively, the effect differs between specifications which include all assessments and those which only include the detailed visitation reports. In the latter case the coefficients are smaller. Between the different methods of measuring the magistrates' performance in respect to administrative processes and rules of professional conduct, no differences in the coefficients can be observed.

The picture changes, when the interaction effect is incorporated. In the baseline model and in specification two, which both include all available assessments, the level effect becomes negative while the interaction effect is positive. Thus, the overall effect of the share of good assessments is only positive after six years of service in the baseline model and after five years in specification two, respectively. In specification one and three, which only use the detailed visitation reports, the level-effect loses its significances while the interaction effect is positive and significant. These differences may be a result of the fact that the effectiveness of the control mechanism was limited during the first three decades of the 19th century. Remember that bureaucratic audits which predominated until the mid 1830's did only catch a smaller part of the magistrate's ability to implement the formal institutional framework. Under this regime, the ministry of interior therefore based its promotion decision also on private information that we cannot observe. As Meldegg reports in his memoirs, this private information often stemmed from personal contacts between the minister or one of his assistants and district magistrates.²⁷² The practices of patronage and nepotism disappeared, according to Meldegg, during the 1840's; at the same time when bureaucratic controls were more and more replaced by detailed visitations. The defective control mechanism during the first three decades of the 19th century may thus explain the observed bias in the statistical results in the baseline model and in specification two.

²⁷² von Meldegg, *Aus den Erinnerungen*, pp. 1; 4-5; 92; 106.

Table 3.4: Determinants of District Magistrates' Promotion within the Internal Labor Market (Dependent Variable: Real Income)

Dependent variable: real income	Baseline		Spec.1		Spec. 2		Spec. 3	
	a	b	a	b	a	b	a	b
Tenure	0.07***	0.06***	0.07***	0.06***	0.07***	0.06***	0.07***	0.07***
Tenure ²	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001
Share Good	0.29***	-0.15***						
Tenure*Share Good		0.03***						
Share Good (only detailed Visitations)			0.17***	-0.03				
Tenure*Share Good (Only detailed Visitations)				0.01***				
Share Good (only admin. & legal skills)					0.23***	-0.08**		
Tenure*Share Good (only admin. & legal skills)						0.02***		
Share Good (only detailed visitation reports & admin. & legal skills)							0.17***	0.04
Tenure*Share Good (only detailed visitation reports & admin. & legal skills)								0.02***
Budget (in 1000 fl.)	0.01**	0.01**	0.01***	0.01***	0.01**	0.01**	0.02***	0.02***
Time Dummies	YES	YES	YES	YES	YES	YES	YES	YES
Constant	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1862	1862	1219	1219	1724	1724	1136	1136
Adj.-R ²	0.70	0.73	0.77	0.78	0.67	0.71	0.77	0.79
F-Test	67.9	79.9	64.7	68.9	60.0	65.1	66.4	67.5

*, **, *** indicate significance at the ten, five, and one-percent-level, respectively.

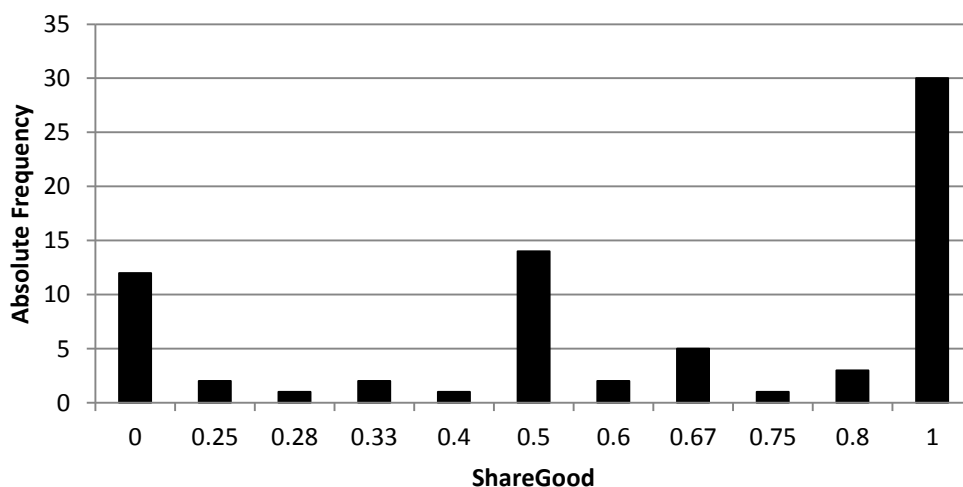
Overall, it seems that the interaction effect is more important than the single level-effect. That is, the effect of a change in the share of good assessments will increase with the time that a district magistrate spends within the Civil Service. In other words, a change in the share of good assessments will mainly influence the velocity of promotion. This is not astonishing given the mechanism of promotion described above. Remember from the last section that we have observed different career paths for magistrates with a different performance in respect to administrative processes and rules of professional conduct. These career paths were linked to different pay levels in the hierarchy and thus can explain the differences in real incomes. Yet, this mechanism needs some time to work, because all district magistrates start at the same level in the hierarchy and it takes some time to identify high-performing employees. But when the high performing district magistrates were identified, they were promoted faster and more often.

Table 3.5: Descriptive Statistics of the Panel Model

Variable	Obs.	Std. Dev.	Min	Max
Real Income	2295	1.56	0.11	3.78
Tenure	2295	17.2	1	48

The budget for remunerations in the civil and legal branch of the administration, at last, is also significant and has the expected sign. The magnitude of the coefficient remains more or less constant regardless of the specification. Furthermore all specifications include time dummies and a constant. The latter is significant at least at the five percent level in all specifications.

Figure 3.7: Frequency Distribution of the Share of Good Assessments



The panel regression illustrates the importance of district magistrates' performance in regard to administrative processes and rules of professional conduct as well as magistrates' seniority for the level of real income and the velocity of promotion. But, how important are the two variables quantitatively. In order to answer this question we have to analysis marginal effects.

Table 3.6 compares the effect of an increase of one year of tenure on the average real income with the effect of an increase in the share of good assessments by 10 percentage points at an average tenure of 17 years (cf. descriptive statistics, table 3.5). Both effects are not negligible ranging from 4.5 to 3.2 percent in the case of the tenure variable and from 3.4 percent to 1.8 percent in the case of the assessment variable. Measured in grams of silver and given average income this represents a range of 495 to 352 grams for the former variable and a range of 374 to 198 grams for the latter variable. Given these values, the tenure effect is larger. Yet, the performance-effect will increase with tenure. Therefore, the performance effect will gain importance with increasing tenure. There is a second caveat. In table 3.6, I assume a marginal effect of 10 percentage points. However, the share of good assessments is distributed very unevenly with a high concentration at the two ends of the distribution 0.0 and 1.0 and at 0.5 (cf. figure 3.7). Thus, an increase of at least 50 percentage points is more plausible which would lead to a higher performance effect.

Table 3.6: Marginal Effects of Tenure and Assessment

		Tenure $\Delta 1^a$	Share Good Δ 10%	Share Good*Tenure Δ 10% ^b	Total Effect Share Good Δ 10% ^b
Baseline	Total	4.5 %	2.9 %		
	Only detailed Visitation	3.2 %	-1.5 %	4.9 %	3.4 %
Spec. 1	Total	4.5 %	1.6 %		
	Only detailed Visitation	3.8 %	-0.2 %	2.0 %	1.8 %
Spec. 2	Total	4.5 %	2.3 %		
	Only detailed Visitation	3.8 %	-0.77 %	3.4 %	2.63 %
Spec. 3	Total	4.5 %	1.6 %		
	Only detailed Visitation	4.2 %	0.44 %	1.36 %	1.8 %

^a The computation is based on the average real income of 1.56.

^b Note: The computation is based on the average tenure of 17 years.

3.5. Logit Model

Another way to look at the correlations discussed in the last section is to estimate the effect of a single assessment on a district magistrate's probability to be promoted. In doing so, I have constructed a simple logit model that explains the probability of being promoted within one year after an assessment with a dummy for a *good* assessment, the centered tenure at the time of the assessment and a constant. The latter can be interpreted as the probability of getting promoted at average tenure if the assessment was *bad* or *neutral*. Together with a centered tenure variable that is unequal from zero, the variable measures the influence of seniority if the assessment was *bad* or *neutral*. The dummy variable, then, quantifies the additional probability of getting promoted if the assessment was *good*. The model can be written as follows:

$$Prob(Promotion|Assessment) = C + D_{good} + CTENURE|Assessment \quad (3)$$

Table 3.7: Descriptive Statistics of the Logit Model

Variable	Obs.	Mean	Std. Dev	Min	Max
Promotion	196	0.52	0.5	0	1
TENURE Assessment	196	14	9.7	0	41
D _{good}	193	0.58	0.50	0	1
D _{admin_skill_good}	152	0.67	0.47	0	1

In a second specification I replace the dummy for a *good* assessment with a dummy that only contains *good* assessments of the magistrate's administrative and legal skills. Note, that both models depict a probability that is conditional on the occurrence of an audit. In total 193 assessments that include all categories and 152 assessments that only include the magistrate's administrative and legal skills were available (cf. table 3.7). Of the 193 observations of the Dummy D_{good}, 86 assessments were *bad* or *neutral* and 110 were *good*.²⁷³ In 56 cases a *bad* or *neutral* assessment coincided with no promotion within one year. Only in 30 cases a promotion occurred. In the case of *good* assessments 72 assessments were followed by a promotion within one year. In 38 cases no promotion followed (cf. table 3.8). In the case of the 152 observations of the Dummy D_{admin_skill_good}, 50 assessments were *bad* or *neutral* and 102 were *good*. In 34 cases a *bad* or *neutral* assessment coincided with no promotion within one year. Only in 16 cases a promotion occurred anyway. In the case of *good* assessments only 35 assessments were not followed by a promotion, compared to 67 cases were a promotion followed within

²⁷³ *Bad* and *neutral* observations were merges, because there two little individual observations.

one year (cf. table 3.9). Thus, the descriptive statistics imply a positive correlation between a *good* assessment and a promotion. This first impression is confirmed by the regression analysis.

Table 3.8: Good Assessments and Promotion within One Year after Assessment

D _{good}	Promotion		Total
	0	1	
0	58	24	82
1	35	76	111
Total	93	100	193

Table 3.9: Good Administrative and Legal Skills and Promotion within One Year after Assessment

D _{admin_skill_good}	Promotion		Total
	0	1	
0	34	16	50
1	35	67	102
Total	69	83	152

Table 3.10 illustrates the results of the logit regression. In both specifications the coefficient of the dummy-variable is positive and significant at the one-percent level. Compared to individuals with a *bad* or *neutral* assessment, a *good* assessment thus increased the probability of promotion by 81 percent in the baseline model and 78 percent in the second specification. In other words, given a *good* assessment the probability of being promoted at average tenure was 67 percent in the baseline model and 64 percent in the second specification. This is quite twice the probability of being promoted at average tenure when the assessment was *neutral* or *bad*. The corresponding figures here were 31 percent in the baseline model and 33 percent in specification two.

Table 3.10: Probability of Promotion (Logit Model, Dependent Variable: Promotion within one Year after Assessment)

	Specification	
	1	2
C	-0.82***	- 0.70**
CTENURE Assessment	-0.04**	-0.04**
D _{good}	1.54***	
D _{admin_skill_good}		1.29***
Pseudo R ²	0.13	0.097
Prob > chi ²	0.000	0.000
Log Likelihood	-115.93	-94.5
Correctly Classified	69.95	67.76
Observations	193	152

*, **, *** indicate significance at the ten, five, and one-percent-level, respectively.

The coefficient of the centered tenure variable is negative and significant at the five-percent level in both specifications. This represents the simple fact that the probability of promotion decreased with tenure for values beyond the average but increased for values that were smaller than the average reflecting the concave shape of the tenure-income curves presented in the last section.

Hence, the logit model confirms the results of the previous section: A higher performance in respect to administrative processes and rules of professional conduct was an important determinant of promotion and led to higher real incomes. This mechanism could therefore serve as an incentive for the implementation of the new formal institutional framework. Yet, there may be further incentives and disincentives in the Civil Service. The next section will discuss some of these issues.

3.6. Discussion

There is one qualification and one caveat to the incentive mechanism presented in the previous sections. The qualification refers to the described mechanism itself, the caveat points to a further incentive mechanism.

Remember from the previous sections, I already mentioned that it will take some time until the described incentive mechanism could work. District magistrates had to identify the rules according to which the ministry of interior and the *Kreisregierungen* made its promotion decisions. Furthermore, they had to learn that the superior agencies would enforce these rules. This was especially hard for the first generations of district magistrates during the 19th century. These magistrates were used to the late 18th century administration which gave them a high scope of action at the local level.²⁷⁴ The need to observe clearly defined rules and regulations was thus new to them. Furthermore, even when administrative and legal rules were reformed in the first decade of the 19th century, more precisely defined implementation rules did not follow before the 1830's.²⁷⁵ The 18th century system of district magistrates' high scope of action thus survived in part until the 1830's. Additionally, the ministry of interior had only little information about local conditions until the late 1830's and therefore could not use its promotions rules efficiently. It is, for these reasons, not astonishing that first learning effects cannot be observed before the late 1830's and that learning mainly took place

²⁷⁴ For 18th century conditions see for example *Gottschalk*, *Alkoholische Gärung*. *Herrschaftskompetenz*; *Hohkamp*, *Herrschaft*; *Holenstein*, "Gute Policey".

²⁷⁵ *Eibach*, *Staat*, p. 60.

between different generations of district magistrates and not within individual magistrates as it was described by Eibach and in chapter one.²⁷⁶

Besides this qualification, there is a further caveat to the argument that the system of promotions was the sole incentive for district magistrates to implement the new formal institutional framework. In his study about the Civil Service reforms in Bavaria and Wurttemberg, Wunder has already in the late 1970's suggested that the introduction of social and material privileges was a device to commit Civil Servants to the state and its monarchical rulers. Unaware of the shirking wage theory, Wunder argues in a similar way: in his view, a Civil Servant would stick to administrative processes and rules of professional conduct in order to not to lose his social and material privileges.²⁷⁷

Social privileges included the wearing of uniforms as a symbol of power and a special treatment before the law, e.g. Civil Servants could only be accused by the state itself and not by the citizens. Furthermore, verbal attacks on Civil Servants were defined as a *lèse-majesté*. Unfortunately, it is hard to measure social status quantitatively. It is therefore quite impossible to make substantial predictions whether or not a potential loss of social status was an important incentive for district magistrates to implement administrative processes as well as to adhere to the rules of professional conduct.

Table 3.11: Comparison of 18th Century District Magistrates' Incomes with High and Low Income Groups (in 1750/1799 prices)

Occupation	Luxury Ratio
Capital income of a partner in a joint stock company ^a	3.9 – 3.1
Noble magistrate	3.8 – (3.4) ^b
Non-noble magistrate	3.4(2.8) ^b – 1.9
Manager of a faience manufactory	1.2 – 0.8
Clergymen (average) ^a	1.0
Skilled (factory) worker ^a	0.5 – 0.4
Day laborer ^a /unskilled worker ^a /weaver ^a	0.2 – 0.1

^aWurttemberg

^b dependent whether or not a non-noble magistrate could become an "Obervogt".

Source: see previous chapter.

²⁷⁶ It is also arguable that district magistrates did not learn at all but the selection mechanism of the ministry of interior would have become better. Yet, this would not change the result: with time the ministry of interior identifies those district magistrates that implemented the new institutional framework.

²⁷⁷ See Wunder, *Privilegierung und Disziplinierung*, pp. 323–324.

Table 3.12: Comparison of 19th Century District Magistrates' Incomes with High and Low Income Groups (in 1800/1849 prices)

Occupation	Luxury Ratio
Wholesale Merchant ("Großhändler"; Magdeburg)	7.5
Merchant ("marchand en gros"; Magdeburg)	3.1
Average merchants income (Magdeburg) ^a	3.0
City Manager	2.8
Magistrate	2.4 – 1.2
Small merchant (Magdeburg)	2.3 – 1.4
Factory Owner (Wolfenbüttel)	1.2
Clergymen (Average)	1.1
Retail Sector (Wolfenbüttel)	1.0 – 0.7
Skilled Worker	1.1 – 0.6
Innkeeper (Wolfenbüttel)	0.8 – 0.5
Artisans (Baden, Nuremberg, Wolfenbüttel)	0.6 – 0.1
Unskilled Worker/Journeymen (Baden, Nuremberg, Wolfenbüttel)	0.4 – 0.2

^a The average excludes incomes of rich "Großhändler" and bankers.

Source: see previous chapter.

In the case of material privileges, on the other side, a more detailed analysis is feasible. Tables 3.11 and 3.12 show district magistrates' real wage measured in luxury ratios compared to real incomes of other social groups during the 18th and the 19th centuries. The table shows that district magistrates' real incomes were high compared to other social groups in both centuries. District magistrate were members of the top fifteen percent of the income distribution which is marked by the dotted lines in table 3.11 and 3.12. Hence, there was a wage premium that could be lost after a potential dismissal. This may have served as an additional incentive to implement administrative processes and to adhere to the rules of professional conduct. Yet, there are two developments which may have hampered the shirking wage incentive mechanism: First, it seemed that the wage premium declined during the second half of the 19th century. This development is clarified by table 3.13 which depicts district magistrates' luxury ratios in the decades until 1870 and table 3.14 which compares district magistrates' luxury ratios with those of white collar workers at the end of the 19th century. The mechanism therefore may have become less effective since the last quarter of the century.

Table 3.13: Luxury Ratios of District Magistrates over Time

	Late 18th century	Pre-reform (1808-1819)	Post-reform (1819-1830)	1830's	1860's
Noble magistrate	4.8 – 4.1	2.6			
City Manager			2.9	2.8	2.3
Magistrate	2.2 – 1.0	2.3 – 1.3	2.5 – 1.2	2.4 – 1.2	2.0 – 1.0
Junior civil servant		0.6	0.8 – 0.6	0.8 – 0.6	0.7 – 0.5

Source: see previous chapter.

Second, as the analysis of the determinants of staffing decisions during the 19th century shows, dismissals occurred only seldom. In general, magistrates that did not implement administrative processes and did not adhere to the rules of professional conduct were promoted more slowly and retired earlier but were not dismissed before their retirement could be justified with age or illness. This view is confirmed by the logit approach which estimates the probability of being dismissed after an unfavorable assessment to only ten percent.²⁷⁸ Nonetheless, in the first decades of the century there were cases in which district magistrates were dismissed because of negative supervisory reports about their performance in regard to administrative processes and rules of professional conduct.²⁷⁹ Furthermore, even when we would observe no dismissal due to the neglect of the implementation of the institutional framework, this could be a sign of a very effective threat.

Table 3.14: Average Luxury Ratios of District Magistrates and White Collar Workers in the Machine Factory Esslingen

Period	District Magistrates		White collar workers
	Upper Bound	Lower Bound	
1870's	2.02	0.87	0.90
1880's	2.33	0.93	1.11
1890's	2.74	0.92	1.30
1900's	2.54	0.85	1.63

Source: see previous chapter.

Pension payments were a new element of material compensation in the 19th century. With the introduction of retirement benefits, Civil Servants were among a privileged group within society. Widows insurance, on the other side, already existed during the 18th century but was ameliorated significantly in the 19th century.²⁸⁰ Pensions and

²⁷⁸ The regression was based on all available assessments. The coefficient is significant at the five percent level. Log Likelihood is -43.5, pseudo R^2 is 0.24 and Prob. > χ^2 is 0.000. The model classifies 91.2 percent of all observations correctly.

²⁷⁹ Eibach, Staat, pp. 56–58.

²⁸⁰ Cf. the discussion in the previous chapter.

widows insurance were bound to the last remuneration of the late magistrate. For the 73 district magistrates in the sample, average nominal pension payments were about 1827 fl. In terms of luxury ratios real pension payments fluctuated between 1.5 and 1.9 in the first half of the 19th century. On average a district magistrate would receive old age pensions for nine years. Thus pension payments were considerably high. Average nominal widows' benefits accounted for 620 fl. In real terms this corresponds to a luxury ratio of 0.6. This does not seem much. However, most widows did not have to sustain a family and often lived with the family of their sons or son-in-law. Therefore, they had less expenditure which would have increased their living standard. This additional monetary benefit had to be added to the wage premium that is depicted in tables 3.11 and 3.12. The introduction of pension payments and widows' insurance thus increased the power of the threat of dismissal.

3.7. Conclusion

This chapter is based on the difference between a formal institutional reform and its actual implementation through state officials' implementation of administrative processes and adherence to the rules of professional conduct. Thereby, the chapter addresses the question how Civil Servants were motivated to obey to the latter. The study concentrates on the local level of the administration analyzing district magistrates' incentives to implement the newly introduced administrative processes and adhere to the rules of professional conduct.

The empirical analysis shows that promotions were dependent on seniority. Yet, supervisors' assessments about the performance of district magistrates in regard to administrative processes and rules of professional conduct also influenced promotion decisions. Magistrates who received a good assessment were promoted faster and their probability of promotion conditional on an assessment was higher. That is, magistrates with a high performance in implementing the formal institutional framework climbed the career ladder faster and had a higher probability to reach the top levels of the hierarchy. In practice this meant that those magistrates became city managers (*Stadtdirektoren*) or leading magistrates (*Amtsvorstand*) in populated and important districts or even achieved position at the intermediary or central level of the administration. Promotion according to the performance in respect to administrative processes and rules of professional conduct can thus be interpreted as an important incentive to implement the reforms.

Yet, a qualification to this interpretation has to be made. As I mentioned in the last section, learning effects took a long time, e.g. district magistrates did not fully adopt the new rules and regulations immediately. As a policy remark, this means that reforming the institutional framework takes a long time and a social planner who is willing to enforce the described incentive mechanism over a longer period.

There is also a further caveat. The described mechanism was not the sole incentive mechanism. Social and material privileges, the latter consisting of a wage premium, old age pensions and widows insurance also played a role. Here, a shirking wage mechanism seemed to be at work. Because magistrates feared to lose their material and social privileges, they stuck to administrative processes and rules of professional conduct. Yet, because of a reduction in the wage premium during the second half of the 19th century, this incentive mechanism may have lost its influence.

4. Bureaucratic Efficiency – The Development of Legal Capacity in the Grand Duchy of Baden in the Mirror of Court Records, 1829-1877

4.1. Introduction

In the previous chapters I discussed how the central government of the Grand-Duchy of Baden succeeded to enforce formal administrative and legal processes and rules of professional conduct among the corps of district magistrates. Yet, the question remains whether the implementation of these rules actually increased the efficiency of Baden's Civil Service. For the purpose of this chapter efficiency will be defined as legal capacity; that is the state's ability to protect property rights and support markets. In the absence of conventional measures for legal capacity – like the Index of Government Antidiversion Policies of the International Country Risk Guide or the World Bank Doing Business Indicator – this chapter introduces an alternative, second best measure that is available for the 19th century - the number of thefts per 1000 inhabitants registered by local district courts. However, this measure has two drawbacks: First, registered thefts are an official statistic that tabulates the number of trials a district court settled within one year. In the case of registered thefts, this number will be dependent on actual crime rates of a district, the efficiency of the district's police forces and the efficiency of the courts themselves and the overall legal framework. While the latter three variables are institutional components that influence legal capacity, the former – the actual rate of crime – is not. It is therefore necessary to decompose the registered theft rate into its different institutional and non-institutional components. The legal capacity measure can then be constructed using only the institutional components of the theft rate.

The direction of influence of the different institutional components on the legal capacity measure is not clear a priori. This is most obvious in the case of the police. An increase in the efficiency of police or a rise in the number of a district's police force could lead to higher registered theft rates, because more delinquents were caught and prosecuted. Alternatively, a change in the efficiency or number of the police could lead to a decline in registered theft rates, because of a deterrence effect. In order to decompose the different institutional and non-institutional factors as well as to isolate their direction of influence, I develop a structural model. This model will be estimated with panel data from 79 districts of the Grand-Duchy for the years 1829, 1832, 1837, 1842, 1847, 1852, 1857, 1862, 1867, 1867 and 1877.

The rest of this chapter is organized as follows: Sections two and three measure the influence of institutional and non-institutional variables on registered thefts per 1000 inhabitants and introduce a legal capacity measure. Thereby section two introduces theft rates as a measure for legal capacity and develops the basic structural model. Section three then presents the empirical results. Section four concludes.

4.2. Protection of Property Rights: The Model

4.2.1 Theft Rates as a Measure for Legal Capacity

In this chapter I use thefts per 1000 inhabitants that were trialed and registered by 79 district courts²⁸¹ of the Grand-Duchy of Baden during the period 1829-1877 as a tool to estimate the development of legal capacity in Baden and thus the efficiency of the country's Civil Service. In doing so, I interpret the criminal statistic of the Grand-Duchy of Baden as a statistic that measures court activity rather than actual crime rates. This view is supported by several studies which question the usability of criminal statistics as a proxy for the state of crime during the 19th century.²⁸² As these critics argue, criminal statistics are influenced by many factors other than actual crime that they significantly deviate from the latter. An often discussed concept is the shadow rate α , e.g. the actual share of crimes committed but not reported. According to this view, the rate of registered thefts is a function of the actual theft rate in the form:

$$\text{Registered Thefts} = (1 - \alpha) * \text{Actual Thefts} \quad (1)$$

with $0 < \alpha \leq 1$.

Some scholars have argued that α is constant over time.²⁸³ In this case information about the real value of α is not necessary. Registered theft rates would then be just a constant subset of all actual thefts. However, this assumption is not necessarily true. Three arguments should be emphasized here:²⁸⁴ First, the size of police forces rose more slowly than population for most of the time during the 19th century. The possibility to prosecute criminals and to report crimes was thus limited and maybe decreased over

²⁸¹ In total there were 82 district courts. However, because of limitations in the data I had to exclude some districts from the sample.

²⁸² See for the following: V. A. C. Gatrell/T. B. Hadden, *Criminal statistics and their interpretation*, in: E. A. Wrigley (ed), *Nineteenth century society. Essays in the use of quantitative methods for the study of social data*, Cambridge 1972, pp. 336–396, here pp. 350–361; J. J. Tobias, *Urban Crime in Victorian England*, New York, NY 1972², pp. 14–21 and H. Zehr, *Crime and the development of modern society. Patterns of criminality in nineteenth century Germany and France*, London 1976, pp. 14–17. However, the different authors come to different conclusions whether or not criminal statistics are a useful proxy for real crime rates.

²⁸³ See for example: Gatrell/Hadden, *Criminal statistics*, here pp. 350–351.

²⁸⁴ For a more detailed argument see: Zehr, *Crime*, pp. 14–17.

time, which should have increased the α -value over time. This development may have been exaggerated if increasing urbanization had stimulated thefts by reducing the respect for property and augmenting the possibility for property offences. Actual theft rates then would have risen but did not translate into increasing registered theft rates, because slow-growing police force were not able to deal with increasing urban crime. Second, with growing urban theft rates, citizens might get used to crime reducing their propensity to report a theft. This would also increase the α –value. Third, price shocks may also lead to changes in the actual theft rate without changing the registered theft rate. A rise in the prices for foodstuffs could e.g. lead to an increase of the actual rate of property crimes. In such a case people will steal more, because they would die of starvation otherwise. Given a fix capacity of the courts and the police forces in the short run, delinquents could not be registered and prosecuted and would therefore not appear in the official statistics. Given this discussion I propose a more complex functional relationship in the form:

$$\text{Registered Thefts} = f(\text{Actual Thefts}, \text{Legal Capacity}) \quad (2)$$

Registered thefts are thus not only dependent on actual theft rates but also on the state's legal capacity, e.g. the state's ability to protect its citizens from property offences. The view that the criminal statistic reflects rather legal capacity than actual crime is also supported by the founders of the statistic themselves. Controlling the activity of the courts was one of the reasons to establish a criminal statistic in the Grand-Duchy of Baden.²⁸⁵

4.2.2 Determinants of Legal Capacity

Court activity measured as registered thefts per 1000 inhabitants is dependent on several factors, both institutional and non-institutional. On the one hand the number of thefts trialed is dependent on the actual number of crimes committed, which are dependent on socio-economic factors (SE). On the other side institutional factors play a role. Here two factors can be distinguished: First, the number and efficiency of the police forces (P); this factor may influence the number of thefts that were detected and prosecuted by the courts. Second, the formal administrative framework (A) including the code of law, the code of procedure and the organization of the court system. These factors may influence which offences were defined as crimes, how fast they were trialed and which effort judges would invest. In what follows, I will therefore develop and

²⁸⁵ Moses, *Kriminalität in Baden*, pp. 102–108.

compute a structural model that estimates the impact of these different factors on thefts trialed at district courts. In a reduced form this model can be written as:

$$RT = SE + P + A \quad (3)$$

With: RT = Registered thefts per 1000 inhabitants
 SE = Socio-economic factors that contribute to registered crime
 P = Size and efficiency of the police force
 A = Formal administrative framework

Dealing with such different socio-economic and institutional variables also means that the data has to be retrieved from different statistical sources. These sources are quoted in table one. The table also hints to another caveat: the data was not always provided for the same administrative units. Basically the Grand-Duchy of Baden was organized in a three level hierarchy. At the top of the organization the different ministries were responsible for a special branch of the administration.²⁸⁶ The country was then organized in greater units, called *Kreise*²⁸⁷ in the case of the civil administration and *Hofgerichtsbezirke*²⁸⁸ in the case of the judicial administration. In the case of the financial administration these units were called *Steuerrevisoratsbezirke*.²⁸⁹ These greater administrative units were again divided into smaller administrative units which were responsible for the daily administrative and judicial work. These were the administrative districts – called *Ämter* – in the case of the civil administration, the judicial districts, or *Amtsgerichte* (local courts) in the case of the judicial administration and the financial districts – called *Obereinnehmereien* in the case of the financial administration. For most of the variables the data were collected for these administrative units as can be seen from table 4.1.

²⁸⁶ There were five ministries in total: the foreign ministry, the ministry of finance, the ministry of interior, the ministry of justice and the ministry of war. These ministries were headed by a sixth ministry, the ministry of state.

²⁸⁷ The *Kreise* were established in 1809. First there existed ten *Kreise*. Their number was reduced to six and then to four in 1832. In 1863 the *Kreise* were abolished and their supervisory functions were transferred to four high civil servants employed by the ministry of interior. See e.g. *Grube, Vogteien, Ämter, Landkreise*, pp. 104–112.

²⁸⁸ The term *Hofgerichtsbezirke* refers to *Hofgericht*, a higher court which was responsible for offences that were punished with more than four (after 1852 eight) weeks of prison (or its equivalent) and sums of dispute above 300 f. In total four *Hofgerichte* and thus *Hofgerichtsbezirke* existed between 1803 and 1863. Their number rose to eleven in 1863. In 1872 their number was reduced to six. Above the *Hofgerichte* only the *Oberhofgericht* – the highest appellate court of the country – existed.

²⁸⁹ In 1827 there were six *Steurrevisoratsbezirke*. Their number reduced to four between 1832 and 1837.

Table 4.1: Sources and Description of Data

Data	Level	Source
Thefts	Judicial Districts	<i>Übersichten der Strafrechtspflege.</i>
Industrial	Financial Districts	GLA 237/13950 and 13951.
Urbanization	Administrative Districts	<i>Übersichten der Strafrechtspflege, Beiträge zur Statistik der inneren Verwaltung.</i>
Population	Administrative Districts	<i>Übersichten der Strafrechtspflege, Beiträge zur Statistik der inneren Verwaltung.</i>
Real Wage	Country	Own computation according to: (Allen, The Great Divergence 2001) and (Gömmel, Realeinkommen in Deutschland 1979).
Number of Gendarmes	Administrative Districts/Circles	(Steinhauser, Geschichte 1900).
Police	Administrative Districts	(Teufel, Südwestdeutsche Polizei 1999, pp. 65–66) and (Wirsing, Gendarmerie 1990, pp. 176–179).
Number of Supervisory Institution	Judicial Districts	<i>Übersichten der Strafrechtspflege.</i>
Number of Courts	Judicial Districts	<i>Übersichten der Strafrechtspflege.</i>
Distance to Kreisgericht	Judicial Districts	Own Computation.

Table 4.1 thus suggests that the data used for computing the structural model comes from different geographical units, which would distort the results of the regression analysis. However, the problem of geographical dissimilarity can be alleviated. Until 1857 administrative and judicial districts were unified, e.g. the *Ämter* were responsible for civil as well as for judicial duties.²⁹⁰ In 1857 the two functions were separated organizationally. However, in most cases this did not mean a change in geographic location; that is administrative and judicial districts remained the same in terms of geography. Financial districts on the other side had another geographical shape than

²⁹⁰ The local courts were not responsible for capital offences or civil disputes which exceeded a sum of 300 fl. However, in the case of capital offences the local courts often were charged with the investigation of the crime.

administrative and judicial districts. In many cases they incorporated two or more of the latter, but there were also cases where one financial district was responsible for only one administrative district. Wherever possible I assigned the administrative and judicial districts to the financial districts using information from the *Verordnungsblatt für die Beamten und Angestellten der Steuerverwaltung*.²⁹¹ The rest of this section concentrates on the description of the variables used in the econometric model.

4.2.3 Theft Rates

Theft rates on district level were computed as thefts per 1000 inhabitants. Using district level data makes sense because of two reasons: First, an analysis on district level allows testing for differences in the influence of socio-economic as well as administrative factors on thefts trialed by the district courts. Second, compared to the *Hofgerichte*, the *Oberhofgericht* (the highest appellate court) and the petty session of the communes, district courts had the highest share of crimes trialed (see table 4.2).

Table 4.2: Shares of Registered Crime at the Different Courts of the Grand Duchy of Baden (in %)

	Hofgericht	District Courts	Communal Courts	Jury Courts
Average 1829 – 1847	35.6	64.4	-	-
Average 1852 - 1878	19.5	47.2	31.8	1.7

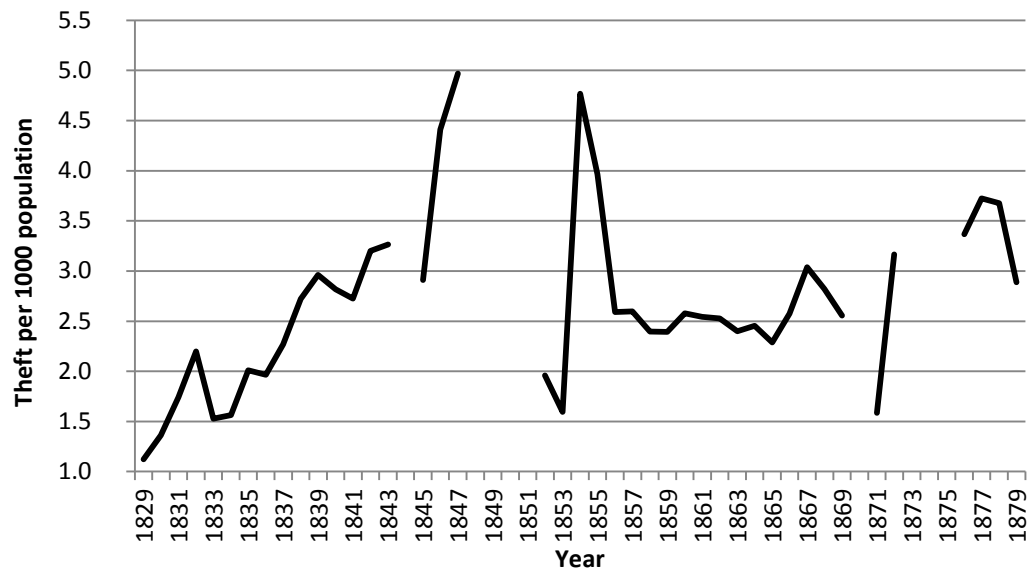
Source: Data is from: Moses, *Kriminalität in Baden* 2006, pp. 381–382.

Data about registered crime comes from the *Übersichten der Strafrechtspflege* which provides a detailed survey about the different kinds of crime that were trialed at the three stages of the judicial system.²⁹² The statistic contains all thefts that were trialed at the local district courts. Thus the statistic includes the number of convicts, the number of acquittals as well as those cases in which no offender could be identified. Because the founders of the statistics were also interested in the social causes of crime, the volumes furthermore include several social statistics like the number of population in a district as well as some personal information about the convicts.

²⁹¹ *Finanzministerium*, *Verordnungsblatt für die Beamten und Angestellten der Steuerverwaltung*, Karlsruhe. Here I used the issues of September 6th, 1833 (No. 12), December 8th, 1835 (No. 44), December 12th, 1835 (No. 45), January 12th, 1850 (No. 1) and September 15th, 1856 (No. 22). The *Verordnungsblatt* was followed by a new series, called *Finanzministerium*, *Verordnungsblatt der Steuerverwaltung*, Karlsruhe. Here I used the issues: November 24th, 1863, July 29th, 1865 and October 27th, 1871.

²⁹² Cf. footnote 288.

Figure 4.1: Thefts Tried at District Level in the Grand Duchy of Baden (per 1000 Population), 1829 – 1877



Source: Own computation based on *Großherzogtum Baden, Übersichten der Strafrechtspflege 1829-1879*.

The development of registered thefts at district courts between 1829 and 1877 can be divided into four phases (see figure 4.1): a first phase spans from 1829 to 1845. During this period theft rates showed a constant upward trend. This trend was exaggerated during the years before and after the German Revolution of 1848/49 in which the Grand-Duchy of Baden played a major role. Unfortunately, the series has a gap between 1848 and 1852 when no information about crimes was collected. Theft rates remained high until 1855. They then fell to pre-Revolution levels. During the second half of the 1850's and the first half of the 1860's theft rates stagnated on this relatively low level constituting the third phase. Since the mid-1860's, theft rates started to rise again. Yet, the trend seemed to be less stable than between 1829 and 1845. Given the sharp rise of the theft rate in the years before and after the Revolution of 1848/9 one may wonder if theft rates were motivated politically; that is that the government advised policemen and judges to prosecute thefts more strictly in order to repress the revolutionary movement. Yet, there are two arguments that argue against this hypothesis. First, the government had better means of restrictive instruments at its disposal like the possibility to convict a revolutionist for treason or incitement of revolutionary acts. Second, as Berger and Spoerer point out, the Revolution of 1848/9 was caused by a

harsh recession.²⁹³ Mounting crime rates during the period of revolution therefore reflect a sharp increase of property crimes that were committed due to rising poverty.

4.2.4 Socio-Economic Variables

Sociologists and historians have developed several theories about the determinants of crime since the 19th century. Adolphe Quetelet²⁹⁴ and Emile Durkheim²⁹⁵ were the first who attributed crime on social factors combining social and criminal statistics.²⁹⁶ Their theories and methods were expanded and refined by 20th century scholars. The most important theories that were developed during the 20th century were the theory of anomie, social disorganization and the theory of absolute and relative deprivation.²⁹⁷ The theory of anomie explains crime with the lag between social values (like economic success, social prestige, etc.) and the available means to reach these aims. If society denies some individuals or groups the possibility to reach these social values this would provoke deviant behavior. According to this theory agrarian societies are stable in a sense that social values did not change much over time. Yet, in capitalist societies with increasing industrialization social values, e.g. economic success, changed rapidly while increasing inequality made it harder for the average person to achieve these aims. This gap between the socially suggested wealth and actual wealth may have served as an incentive to engage in property crimes like theft and robbery.

The theory of social disorganization argues that the breakdown of traditional values was a main driver for criminal behavior. It is argued that a consistent attitude of the members of society towards social values and laws reduces crime while a set of competing values stimulates deviant behavior. In this view increasing urbanization rates foster the breakup of traditional values and thus criminal behavior, because rapid urbanization may lead to the abolishment of traditional (rural) values that were substituted by competing world-views of the modern world. Competing social values could lead to a disorganization of the individual within society which may increase an

²⁹³ H. Berger/M. Spoerer, Economic Crisis and the European Revolutions of 1848, in: The Journal of Economic History 2, 2001, pp. 293–326.

²⁹⁴ * 22. February 1796 in Gent, † 17. February 1874 in Brussels.

²⁹⁵ * 15. April 1858 in Epinal, † 15. November 1917 in Paris.

²⁹⁶ For an overview about Quetelet's and Durkheim's work see: L. I. Shelley, Crime and modernization. The impact of industrialization and urbanization on crime, Carbondale, Ill. 1982², pp. 4–6.

²⁹⁷ For a survey see: Shelley, Crime and modernization, pp. 6–10. Shelley lists also further theories, as the theory of cultural conflict, differential association and delinquent subculture. Yet, these theories are more detailed extensions of the theories mentioned above (differential association, delinquent subculture) or are not relevant in the case of the Grand-Duchy of Baden (cultural conflict). Cf also Zehr, Crime, pp. 19–28.

individual's willingness to engage in acts of violence which include rioting but also robbery.

The theory of relative deprivation explains criminal behavior with the visibility and access to goods for relatively poorer individuals of the society; that is with the feasibility of engaging in property crimes. In this context industrialization and urbanization levels play an important role. Industrialization, on the one hand, increased the number of goods and therefore their visibility, urbanization, on the other hand, made those goods more accessible. The theory of absolute deprivation, at last, describes property crime that is committed, because of sheer poverty. This would typically be the case during a subsistence crisis which was not uncommon during the first half of the 19th century.

There is also an economic theory of crime developed by Gary S. Becker who introduced the analysis of human behavior into economic theory.²⁹⁸ According to Becker engaging in criminal activities is a question of economic incentives. Individuals compare expected (monetary) rewards from illegal activities with the secure outcome of a legal activity. In this model, rewards from illegal activities are interpreted as a random variable that is dependent on the probability of detection and the level of fines. If expected rewards from illegal activities are higher than those from legal activities, an individual would engage in criminal behavior. Individuals thus engage in crime, because their costs and benefits related to criminal activities are different from those individuals who pursue legal activities. Because of missing data about possible gains from crime, the probability of detection and the level of fines, I cannot test this theory directly. However, in some sense the economic theory of crime is comparable to the theories of anomie and the theories of absolute and relative deprivation. The decision whether or not to commit a crime is in all four theories dependent on the possible gains of a crime. When the means of an individual to engage in legal activities are restricted, as in the theory of anomie, the possible gains from committing a crime are high. The same is true in the case of sheer poverty. At last, if the accessibility and visibility of goods is higher, the costs of committing a crime are smaller. For example, a higher visibility reduces search costs while a higher accessibility reduces the costs of *acquisition*.²⁹⁹

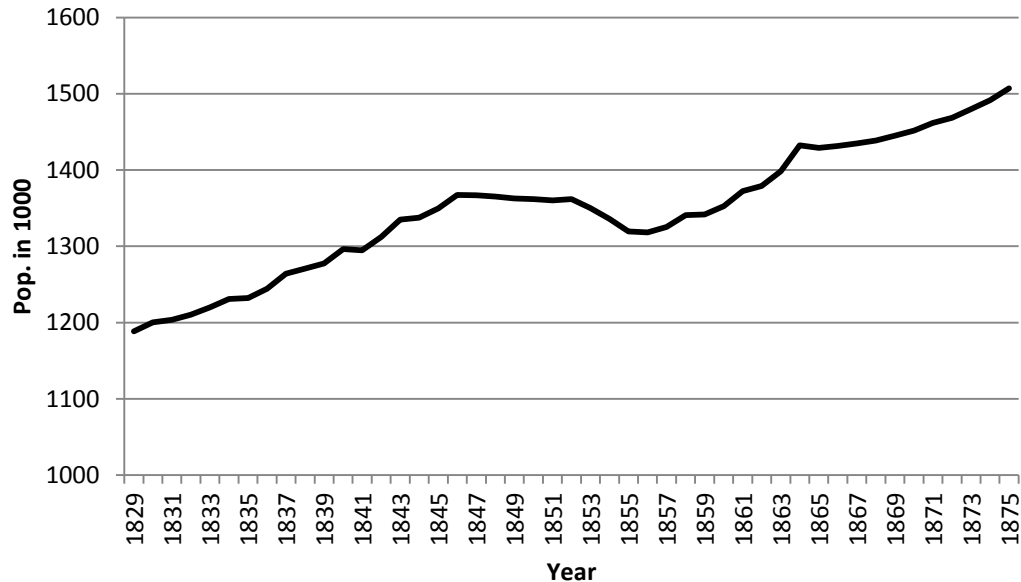
²⁹⁸ E.g. see: G. S. Becker, Crime and Punishment: An Economic Approach, in: Journal of Political Economy 2, 1968, pp. 169–217 and G. S. Becker, The Economic Way of Looking at Behavior. The Nobel Lecture, Stanford 1996. For a broader view see: G. S. Becker/ W. M. Landes (ed), Essays in the economics of crime and punishment, New York, NY 1974.

²⁹⁹ The probability of detection could furthermore be measured by the efficiency and number of police forces while the level of fines is dependent from the code of law and the working of the

We can test the theories described above by incorporating the growth rate of urbanization (social disorganization), urbanization levels (relative deprivation) and a measure for industrialization (anomie, relative deprivation) as well as a real wage index (absolute deprivation) into the empirical model.

Data about population on district level is derived from the *Übersichten der Strafrechtspflege* and the *Beiträge zur Statistik der inneren Verwaltung des Großherzogtums Baden*. Urbanization levels were defined as a district's share of population in towns or villages with over 2000 inhabitants. Because of missing data about town and village size I could only compute urbanization levels for the years 1838, 1852 and 1871. Missing data about urbanization levels for the remaining years makes the construction of the growth rate of urbanization impossible. Instead, I make use of the growth rate of the population on district level as a second best solution.³⁰⁰ Baden's population grew about 27 percent between 1829 and 1875³⁰¹ (see figure 4.2) pauperizing a large part of society, especially in the traditional crafts. This rapid decay of wealth may have led to an environment where different world views could emerge.

Figure 4.2: Population in the Grand-Duchy of Baden, 1829 – 1875



Source: *Kraus, Quellen zur Bevölkerungsstatistik*, pp. 40–41.

courts. The economic theory of crime is thus indirectly incorporated in the model presented in this section.

³⁰⁰ In this case I assume a constant distribution of population between towns and villages within a district. Yet, the distribution between districts may change.

³⁰¹ Population was 1.19m in 1829 and 1.51m in 1875. Data is from A. *Kraus*, *Quellen zur Bevölkerungsstatistik Deutschlands 1815-1875*, Boppard am Rhein 1980, pp. 40–41.

The level of industrialization was measured by using tax data. In Baden, the tax system was based on the capital employed in agriculture, industry as well as in housing. To this end the financial administration collected data about the capital that was employed in these three asset categories. In the case of industry, the financial administration also distinguished between the capital that was employed in machinery and inventories and the labor income of the owner of the enterprise and its employees. We therefore have a relatively good approximation of the working capital within the different financial districts.³⁰² For the purpose of this paper I used the share of a district's working capital over the total tax capital as a proxy for the level of industrialization. This is feasible, because the two other categories represent the value of agricultural estates or unproductive capital. Note that tax data is provided for assessment areas that were less numerous than districts. Therefore an assessment area included several districts. Districts were allocated to assessment areas wherever possible which reduced the number of districts in the baseline model to 79.

In order to compute real wage I used Rainer Gömmel's information about nominal wages of industry workers and craftsmen in southern Germany.³⁰³ One may argue that using nominal wages from southern Germany rather than from Baden could distort the overall picture. Yet, this would only be the case if there have been different trends in the countries of south Germany. But market integration and labor mobility grew during the 19th century thanks to the Zollverein and the German Bund. Nominal wages should therefore rather converge than diverge. Gömmel's nominal wage series was then deflated using Robert Allen's poverty line consumption basket.³⁰⁴ Because there is no detailed information about prices in the different districts of Baden, I used information about prices in the Alsace as a proxy for prices in Baden. This is feasible, because the two regions were highly integrated. As a result, the movement of prices was highly

³⁰² *Großherzogtum Baden*, Amtliche Beiträge zur Statistik der Staatsfinanzen des Großherzogtums Baden, Karlsruhe 1851, pp. 97–117. For a detailed description of the data as well as the methods of data collection, see: *F. A. Regenauer*, Der Staatshaushalt des Großherzogtums Baden in seinen Einrichtungen, seinen Ergebnissen und seiner seit der Wirksamkeit der landständischen Verfassung eingetretenen Umgestaltungen, Karlsruhe 1963 and *E. Schremmer*, Die badische Gewerbesteuer und die Kapitalbildung in gewerblichen Anlagen und Vorräten in Baden und in Deutschland, 1815 bis 1913, in: *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte* 1, 1987, pp. 18–61.

³⁰³ Cf. *Gömmel*, Realeinkommen in Deutschland. See also chapter two.

³⁰⁴ Cf. *Allen*, The Great Divergence. In his paper about the evolution of living standards from the Middle Ages to the First World War, Allen uses the period from 1745 to 1754 as base period. I use the 1780/89 period, because the latter is nearer to the 19th century which is of interest here. The period 1780/89 represents the last peacetime decade before the Revolutionary and Napoleonic Wars of the late 18th and early 19th century. It is therefore the best available base period for the 19th century.

correlated and prices did not much differ in their levels.³⁰⁵ Thus, using a broader measure of real wages should not distort the overall picture much.

Given the availability of the data, the socio-economic effects influencing registered thefts per 1000 inhabitants can be written as follows:

$$SE = I + U + \dot{g} + \frac{w}{p} \quad (4)$$

with: SE = Socio-economic factors that contribute to registered crime

I = The level of industrialization

U = The level of urbanization

\dot{g} = The growth rate of population

$\frac{w}{p}$ = The real wage

4.2.5 Efficiency of the Police

Let us now turn to the first institutional factor that influenced legal capacity: the number and efficiency of police forces. As in many other German states, there existed two different police forces in Baden since the 18th century: a security police, called *Gendarmerie*, and local police forces that were run by the communes.

4.2.5.1 The Gendarmerie

The *Gendarmerie* was established according to the French blueprint. Its focal mission was the maintenance of law and order in the countryside. This task mainly intended the control of beggars and vagrants and the prevention and prosecution of related crimes like theft and robbery. The *Gendarmerie* was founded in 1829 by reforming its less efficient preceding organizations.³⁰⁶ The *Gendarmerie* was organized like a military force with a strict discipline and clear command structures. Gendarmes were mainly former soldiers and thus well-trained experts of violence. However, the *Gendarmerie* paid attention to pick young and fit soldiers rather than old veterans. According to the annual statement of account of the *Commander of the Gendarmerie* there existed a good esprit de corps and patriotic spirit.³⁰⁷ Together with rewards of good performance through extra-pays, promotion and public acclamation, this implies a high motivation within the force. Gendarmes were garrisoned in groups of two and more officers in different stations in the administrative districts. Yet, the administrative districts differed in the

³⁰⁵ Cf. chapter two.

³⁰⁶ For a history of the *Gendarmerie* and its preceding organizations see: *M. Teufel*, Die Südwestdeutsche Polizei im Obrigkeits- und Volksstaat. Daten - Fakte - Strukturen, 1807-1932. Zur Geschichte der Polizei in Baden, Württemberg und Hohenzollern, Holzkirchen 1999, pp. 27–34 and *Wirsing*, *Gendarmerie*, pp. 65-70; 117-123.

³⁰⁷ Cf. Accounts of the Commander of the *Gendarmerie* (Dienstvisitationsberichte der *Gendarmerie*), Generallandesarchiv Karlsruhe, Section 236, Fascicles 8098-8100, thereafter cited as GLA 236/8098-8100.

number of employed gendarmes. Less populated and smaller districts had normally less gendarmes. Given the good training of the gendarmes, their presumably high motivation as well as the different endowment of administrative districts with gendarmes, one could expect a positive relationship between the number of gendarmes and registered thefts. The higher the proportion of gendarmes per inhabitants, the more thefts should be reported by the gendarmes and therefore registered in the criminal statistic. This is what one can call the detection effect. On the other side there could be a deterrence effect of good police work. That is, individuals would abstain from criminal behavior, because the probability of detection was very high reducing the gains from deviant behavior.³⁰⁸

Data about the number of gendarmes in each administrative district is provided by Steinhauser who has a detailed list for the years 1832 and 1899.³⁰⁹ Steinhauser furthermore reports changes of the size of the force on the level of the *Kreise*. Between 1829 and 1879 this happened in the years 1829, 1834, 1838 and 1849/50. I can thus interpolate the change of the number of gendarmes in each administrative district by multiplying the number of gendarmes per *Kreis* with a district's share of gendarmes in 1832.³¹⁰

4.2.5.2 Communal Police Forces

The second police force, the local police, was less homogenous than the *Gendarmerie*. During the 19th century two types of local police existed in the villages and towns of the country. In most communes local police forces were controlled by majors called *Ortsvorsteher*. Yet, in some towns the central state took away police powers from the commune and assigned responsibilities to the district magistrates (called *Amtmänner*).³¹¹ In contrast to the state-controlled police forces, communal police forces suffered from organizational and personnel drawbacks. Communal-controlled police forces often consisted of the local poor or day laborers and had thus no adequate training. Indeed, the *Gendarmerie* and district magistrates complaint that local policemen were lousy armed and not seldom old, lame and deaf; some even drank

³⁰⁸ Yet, it would also be possible that high theft rates influenced the number of gendarmes in the districts. This problem of endogeneity is inter alia discussed by S. D. Levitt, Using Electoral Cycles in Police Hiring to Estimate the Effect of Police on Crime, in: American Economic Review 3, 1997, pp. 270–290. I will address this issue in the next section.

³⁰⁹ A. Steinhauser, Geschichte des Großherzoglich Badischen Gendarmerie-Corps. Von der Errichtung im Jahre 1829 bis einschließlich 1899, Karlsruhe 1900.

³¹⁰ The allocation of districts to circles remained fairly constant over time. Wherever necessary I corrected for changes. The numbers for 1849/50 were interpolated with 1899 shares.

³¹¹ Cf. Eibach, Staat, p. 62 and Teufel, Südwestdeutsche Polizei, p. 66.

alcohol on duty and would have needed to be supervised by the police rather than being policemen themselves.³¹² Because the communes used the police as a possibility to reduce poor relief expenses, local police forces were badly paid and policemen were forced to do several jobs and hence could not fully concentrate on police work. As a consequence, policemen were hardly able to enforce laws, norms and regulations as well as to preserve the peace and prevent citizens from property offences. Especially, enforcement of laws vis-à-vis members of the upper classes was difficult because of economic dependencies and membership in social networks.³¹³

Yet, communal-controlled police forces did not only suffer from personnel drawbacks. Also, majors usually neglected the enforcement of police rules, prosecuted complaints by the *gendarmerie* reluctantly and did not support members of the *gendarmerie* against insults and physical abuse. These drawbacks were, according to the *Gendarmerie*, due to lacking expertise of the majors in police related issues. Given a relatively short term in office, majors had no time to learn how to govern the police effectively. Additionally, and maybe even more importantly, the *gendarmerie* complaint that majors had incentives to go easy on “their” citizens in order not to risk votes at the next election. Furthermore, it was reported that majors had to fear acts of revenge after they abdicated their office and therefore were reluctant enforcing police rules.

One may argue that the critic by the *Gendarmerie* was biased in order to stress its own importance for the fight against crime. Yet, the view of the *Gendarmerie* was confirmed by the district magistrates. Because the relationship between district magistrates and gendarmes was not free of conflict, this can be taken as a clear sign that the performance of local police forces was as bad as it was described by the *Gendarmerie*.³¹⁴

Because of the inefficiencies of the communal-controlled police, one would expect no effect of these police forces on registered crime. State-controlled police forces were, in contrast, better trained and paid. In many cases, the state recruited former gendarmes

³¹² In one case the *gendarmerie* reported that a former thief was employed as a local police officer.

³¹³ Staatsarchiv Freiburg, section A 89/1, fascicle 12, thereafter cited as: StAF A 89/1, Nr. 12 (Oberamtmann Böhmer, Bezirksamt Lörrach to Regierung des Oberrheinkreises, April 17, 1837), GLA 236/8162 (Oberamt Heidelberg to Regierung des Oberrheinkreises, January 1, 1836), StAF A 88/1, Nr. 247 (Bezirksamt Schönau to Regierung des Oberrheinkreises, April 25, 1838) and several Visitationsberichte der *Gendarmerie* in the years between 1834 and 1859 (GLA 236/8098 and GLA 236/8099).

³¹⁴ StAF A 89/1, Nr. 12 (Oberamtmann Böhmer, Bezirksamt Lörrach to Regierung des Oberrheinkreises, April 17, 1837) and several Visitationsberichte der *Gendarmerie* in the years between 1834 to 1859 (GLA 236/8098 and GLA 236/8099).

who were well-trained in police work. State-controlled police forces had also higher wages than communal forces allowing policemen to concentrate fully on police work. Moreover, there was a special fund from which outstanding work and effort was rewarded.³¹⁵ As in the case of gendarmes, this should have increased motivation. Furthermore, local policemen were controlled by district magistrates who were – in contrast to the majors – not dependent on public popularity. Indeed, as chapter three argues district magistrates faced incentives to implement rules and norms. Control and enforcement of police work was therefore higher in towns where district magistrates were in charge of the police.³¹⁶

Because of these big differences in the quality of communal and state-controlled police forces it is reasonable to measure the additional effect on registered crime of the latter. Here, the same considerations as in the case of the *Gendarmerie* prevail: registered theft rates in towns with state controlled communal police forces may be higher, because of the detection effect or lower, because of the deterrence effect. In order to measure these effects, I introduced a police dummy that becomes one if the majority of local police forces within a district were controlled by the district magistrates. This was the case in ten towns. In the capital Karlsruhe and Mannheim local police forces were controlled by the state since 1787 and 1815, respectively. Furthermore, majors lost control over local police forces in Baden (1835), Freiburg, Heidelberg, Konstanz (all 1836), Rastatt (1843), Bruchsal (between 1850 and 1873), Lahr (between 1852 and 1873) and Pforzheim (since 1857).³¹⁷

The middle part in equation three can thus be written as follows:

$$P = G + D_SC \quad (5)$$

with: P = Size and efficiency of the police force
 G = Number of gendarmes per 1000 inhabitants
 D_SC = Dummy for state-controlled police forces

³¹⁵ See GLA 236/8162 (Sitzungsprotokoll des Innenministeriums August 22, 1853).

³¹⁶ The increase in the quality of state-controlled local police forces is confirmed by the reports of the „Landeskommissäre“ during the 1860’s. Cf. e.g. *Großherzogtum Baden, Jahresberichte der Landeskommissäre*, pp. 158–159. Joachim Eibach describes the same development. Cf. *Eibach, Staat*, p. 150.

³¹⁷ For the dating see: *Teufel, Südwestdeutsche Polizei*, pp. 65–66 and *Wirsing, Gendarmerie*, pp. 176–179.

4.2.5.3 The Efficiency of the Police over Time

So far, we have only discussed level effects. But the theft rate will not only be affected by the number of gendarmes or the introduction of state-controlled police forces in the communes. The efficiency of these two kinds of police may also rose over time. Such a change may be a result of a technological or organizational change which increases the productivity of the police. The diffusion of the railway, for example, reduced the costs of traveling in some areas of the country making the prosecution of thieves easier. This may have increased the productivity of the *Gendarmerie*. Yet, the first railway of the country was built in the Rhine valley between the mid 1840's and 1850's. The small towns and villages of the Odenwald and the Black Forest were not connected before the late 1860's. A dense railway network that connected almost every village was not established until the late 1890's.³¹⁸ It is therefore arguable that technological improvements played a major role in enhancing the productivity of the *Gendarmerie*. Indeed as table 4.3 shows, the ratio of the number of people arrested by the *Gendarmerie* and the number of registered thefts did not change much between 1830 and 1870.

Table 4.3: Productivity of Police: Ratio of Thefts per Number of Arrested (per 1000 inh.), 1830-1875

Year	Thefts Tried/Arrested
1830	0.07
1835	0.08
1840	0.05
1845	0.06
1855	0.06
1860	0.06
1865	0.08
1870	0.10
1875	0.12

Sources: The number of people arrested is from Steinhauser, *Gendarmerie*, p. 261. The number of thefts tried is from Moses, *Kriminalität*, pp. 385-388.

A main organizational change was the introduction of criminal investigation departments in cities with state controlled police forces since 1864. At the beginning, members of the criminal investigation bureaus were ordinary policemen who were delegated to the department of public prosecution. Those policemen were therefore not trained for specialized police work.³¹⁹ A special organization with well-trained

³¹⁸ See W. Walz, *Die Eisenbahn in Baden-Württemberg. Geschichte d. Bahnen in Baden u. Württemberg 1840 bis heute*, Stuttgart 1980.

³¹⁹ During the 19th century policemen in the communes were also responsible for public health, public security, market rules a.s.o. With these duties the communal police forces operated at full

professionals who were only responsible for the investigation of crimes was not founded before 1879. In the case of state-controlled police forces it is therefore hard to make a well-grounded assumption about the evolution of the forces' productivity over time. It may be that there were first improvements in police work during the second half of the 1860's. Yet, those improvements may also have realized not before the 1880's.

4.2.6 The Formal Administrative Framework

Besides socio-economic factors and the influence of police forces, the formal administrative framework may as well influence registered theft rates. In the period under examination three important changes of the formal institutional framework occurred.³²⁰ First, the criminal law and the organization of the criminal process were changed in 1852. Until then the criminal law in the tradition of the Carolina remained in force. This gave judges much power which led to a high variation of sentences between different courts. In 1852 a new criminal law was enacted that restricted the power of judges and strengthened the position of the prosecutor and the defender. In this context the reform was an important step towards the establishment of the rule of law. The reform brought also other changes that were important for the development of the criminal statistic. The new law rendered the definitions of prosecuted offences more precisely. While definitions were relatively vague under the regime of the Carolina, they were now clear-cut. The new law furthermore restructured responsibilities: The Hofgerichte transferred some responsibilities to the district courts by increasing the penal power of the latter from four to eight weeks of prison (or its equivalent).³²¹ The next major organizational reform was the detachment of the local courts from the local administration in 1857. Until then, district magistrates, were responsible for administrative as well as for judicial issues.³²² In this context, some smaller jurisdictions were closed and incorporated into their bigger neighbors. This process should have automatically increased registered crime in the remaining districts. Although there was a specialization of some district magistrates on legal issues before 1857, the creation of individual local courts may have further increased specialization resulting in a higher efficiency of the courts and therefore also leading to higher rates of thefts registered by

capacity. See e.g. Ministry of Interior to Ministry of Justice, Karlsruhe, March 25, 1867 (GLA 236/23317).

³²⁰ For the following see *Moses, Kriminalität in Baden*, pp. 39; 43-46; 50-62.

³²¹ Furthermore the newly founded jury courts were now responsible for murder offences, a former task of the *Hofgerichte*. Yet, this should have no effect in our model, because the regression does not include murder.

³²² However, most districts were managed by two magistrates who divided the administrative and the judicial duties among each other.

the district courts. A new wave of mergers occurred in 1864 in the course of an organizational reform of the civil and legal branch of the administration. The reform of 1864 also increased the number of courts of second instance, now called *Kreisgerichte* from four to eleven. This reduced the number of district courts per *Kreisgericht*. Because the latter were responsible for the control of the former, this may have improved detection of local judges' reluctance to trial a case within the appropriate time. These stricter controls may also have increased thefts registered by the district courts. Besides these three major reforms of the formal administrative organization, two smaller reforms have to be mentioned. In 1865 and then especially in 1872 the number of local courts was reduced again. In 1872 the government also decided to close four of the recently introduced *Kreisgerichte*.

In order to model the three major as well as the two smaller changes of the formal administrative framework one could construct year dummies for the periods 1852-79, 1857-79, 1864-79, 1865-79 and 1872-79. The major drawback of these dummy variables is that they contain information about various changes that took place at the same time. It is therefore impossible to isolate the individual effect of a rising number of supervisory institutions, a declining number of courts or new offences and gains from specialization. However, some of the effects described above can be modeled without making use of dummy variables. The potential effect of a declining number of local courts can also be measured by including the number of local courts into the model. The same is possible with a potential effect of the number of supervisory institutions.³²³ In doing so, we can set the 1864-79, the 1865-79 and the 1872-79 dummy aside. The remaining dummies then measure only the effect of the separation of the civil and the legal branch of administration (the 1857-1879 dummy) and the effect of a new definition of offences and a new code of procedure (the 1852-1879 dummy).

As mentioned in the previous chapters, incentive mechanisms that motivate judges to implement legal rules and processes and adhere to the rules of professional conduct could have an influence on judges' effort to trial a crime and have therefore also an effect on registered thefts. As the analysis of the career paths of 73 district magistrates and local judges shows, promotion to higher ranks and thus an increase of remuneration was inter alia bound to the adherence of the formal administrative and legal rules and processes and the respect of the code of professional conduct. Although there were

³²³ In the regression the number of supervisory institutions was excluded, because it is highly correlated with the number of district courts.

some problems in the early years of the new incentive mechanism due to inadequate controls, the mechanism ameliorated significantly since the late 1830's or early 1840's. This was mainly due to the establishment of internal controls that were undertaken on a permanent basis following a periodic rhythm. Unfortunately, I cannot control for the effect of this incentive mechanism directly. Yet, an indirect test may be applicable. If the incentive mechanism described above worked comprehensively there should be no differences between court districts due to their geographical proximity to their supervisory institutions. That is, drawbacks in the implementation of justice should not be more common in courts at the periphery, because supervision of these institutions was less strict. In order to control for this factor, I include the distance to the responsible court of second instance.

The last part in equation three can therefore be written as:

$$A = D_{1852-79} + D_{1857-79} + C + SI + D_{SI} \quad (6)$$

with: A = Formal and informal administrative framework
 $D_{1852-79}$ = Dummy for the period 1852 – 1879
 $D_{1857-79}$ = Dummy for the period 1857 – 1879
C = Number of district courts
SI = Number of supervisory institutions
 D_{SI} = Distance to supervisory institution

The overall model can therefore be written as:

$$RT = I + U + \dot{g} + \frac{w}{p} + G + D_{SC} + D_{1852-79} + D_{1857-79} + C + SI + D_{SI} \quad (7)$$

Table 4.4 summarizes the variables used in equation seven:

Table 4.4: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Industrial Urbanization	770	.042	.026	.01	.19
Growth Rate of Population	830	.19	.22	0	1
Real Wage	717	0.03	0.20	-.93	.9
Gendarmes per 1000 pop	891	.73	.11	.58	.94
	745	.30	.15	.045	1.17
Number of Courts	891	73.0	11.5	51	81
Distance to <i>Kreisgericht</i>	823	36.4	26.0	0	99.5
Longest Distance to Court	858	3.66	1.27	0	7
Population Density	700	7,068	10,214	1,929	135,370

4.3. Measuring Legal Capacity

Given the panel-structure of the data, equation seven can be re-written as:

$$RT_{it} = I_{it} + U_{it} + \dot{g}_{it} + \left(\frac{w}{p}\right)_t + G_{it} + D_{SC} + D_{1852-79} + D_{1857-79} + C_t + D_SI_{it} + X_i \quad (8)$$

Registered thefts per 1000 inhabitants in district i at time t , can be explained with:

(1) Socio-economic indicators including the level of Industrialization (I_{it}) as well as the level of Urbanization (U_{it}) in district i at time t , the growth rate of population (\dot{g}_{it}) in district i at time t and the real wage $\left(\frac{w}{p}\right)_t$ at time t .

(2) The number of well trained and highly motivated gendarmes per 1000 inhabitants (G_{it}) in district i at time t as well as a Dummy (D_{SC}) that indicates the existence of a state controlled communal police force.

(3) The administrative institutions of the country consisting of two dummy variables for the sub-periods 1852-79 and 1857-79, a variable that measures the number of courts (C_t) at time t as well as variable that controls for the distance of a district court i to its supervisory institution at time t (D_SI_{it}). Note that the number of supervisory institutions was excluded from the model, because of its high negative correlation with the number of courts.³²⁴

(4) A set of fixed effects X_i for each district.

The model was computed for the year 1829 and then for every fifth year starting in 1832 and ending in 1877. Data on thefts, business taxes and real wages were available for every year.³²⁵ In the case of the other variables some adjustments had to be made. In the case of population, data points are very near or equal to the benchmark years. In the former case, I interpolated population data in order to be more accurate.³²⁶ Urbanization levels are only available for the years 1838, 1852 and 1871. I therefore worked with the 1838 data for the time until 1847. The 1852 data was applied for the years 1852 to 1867, and the 1871 data for the remaining years. The number of

³²⁴ The correlation coefficient is -0.74.

³²⁵ The only smaller adjustment here was that I used data on business taxes of the year 1827 as a proxy for 1829.

³²⁶ Because data points are very close – in most cases the difference is only one or two years – interpolation has only little influence on population data.

gendarmes was raised in the years 1829, 1832, 1834, 1838 and 1849/50. Between these years the manpower of the force remained constant (see table 4.5).³²⁷

Table 4.5: Available Data Points for the Variables: Theft, Population, Urbanization and Gendarmes

Data Points for Variable: Thefts	Data Points for Variable: Population	Data Points for Variable: Urbanization	Data Points for Variable: Number of Gendarmes ^a
1829	1829	-	1829
1832	1833	-	1832
1837	1838	1838	1834
1842	1845	-	1838
1847	-	-	1849/50
1852	1852	1852	-
1857	1855	-	-
1862	1858	-	-
1867	1864	-	-
1872	1871	1871	-
1877	1880	-	1899

^a For the years **1832** and **1899** data is on district level. For all other years, data is on circle level. In the latter case district level data was interpolated from the 1832 and 1899 figures (see text).

Table 4.6 shows the result of the panel regression. While specifications one to three are reduced form estimates of equation eight concentrating on one of the three different components, specification four contains the full model. Specification five introduces a time trend as robustness check. The dependent variable in all specifications is thefts per 1000 inhabitants. All standard errors are robust.

In the case of the socio-economic determinants of registered thefts the level of industrialization, the real wage and the growth rate of population are significant in specifications one and four. All three variables have the expected sign: a rise in the level of urbanization and the growth rate of population increases registered thefts, while a rise in the real wage leads to a decrease of registered thefts per 1000 inhabitants. However, if one adds a time trend the growth rate of population loses significance. The coefficient of the urbanization level on the other side is insignificant throughout all specifications; although it has the expected sign.

The coefficients of the two police forces – the *Gendarmerie* and the local police forces – show a positive sign. While the police dummy is significant at the one percent level in specification two, four and five the number of gendarmes is only significant in specification four. In this specification an increase in the number of gendarmes per 1000

³²⁷ All other variables were transformations of variables described above or dummy variables.

inhabitants leads to a rise in thefts per 1000 inhabitants registered by the district courts. The same is true for the state-controlled communal police forces. Compared to their less well trained and motivated communal counterparts, districts with state controlled police have more thefts registered by the courts. It thus seems that the detection effect prevailed. A well trained and highly motivated police force prosecuted and reported thefts more strictly. However, it may also be possible that state-controlled police forces were established, because theft rates were so high in the treated districts. The same problem of endogeneity may be at work in the case of the *Gendarmerie*. Government could have staffed districts with high theft rates with more gendarmes per 1000 inhabitants. The prevalence of the detection effect may therefore be a result of the endogeneity of the two variables. This problem will be discussed in the next sub-section.

Table 4.6: Determinants of the Theft Rate, Fixed-Effects Panel Regression (Dependent Variable: Thefts Tried per 1000 Inhabitants, Robust Standard Errors)

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS
Industrial	12.8***			10.0***	9.98***
Urbanization	0.96			0.66	0.45
Growth Rate of Population	1.10***			1.22***	0.36
Real Wage	-2.56***			-10.4***	-5.39***
Gendarmes per 1000 pop.		1.13		2.47***	0.53
Police		1.22***		1.09***	0.84***
D_1852			-1.02***	-1.75***	-3.15***
D_1857			0.49***	1.23***	-0.25
Number of Courts			-0.03***	-0.11***	0.01
Distance to <i>Kreisgericht</i>			0.009*	0.02***	0.01**
Time Trend	NO	NO	NO	NO	YES
Observations	667	745	747	666	666
F-test	10.9***	5.89***	14.8***	17.6***	27.0***
R ²	0.06	0.08	0.02	0.23	0.32

***, **, and * denote significance at the one, five and ten percent level, respectively. All standard errors are robust.

The last component that determines the number of registered thefts per 1000 inhabitants was the formal administrative framework. All coefficients in this category are significant at the ten or one percent level in specification three and four. Interestingly, there is a positive relationship between the distance to a supervisory institution and theft rates. This finding disagrees with the assumption that those districts

which were farther away from their supervisory institutions were less strictly controlled and therefore less productive. It is therefore not implausible that the internal incentive mechanism which motivated district magistrates and (after 1857) local judges to adhere to the formal administrative and legal processes and respect the code of professional conduct was actually at work. The coefficient of the variable that measures the number of courts also has the expected sign. A decrease in the number of courts led to an increase in the number of registered thefts per district. However, if one controls for a time trend the variable loses its significance.³²⁸ The same is true for the 1857 dummy.

4.3.1 Endogeneity of the Police

In the case of state-controlled local police forces there are two reasons why it seems that the decision whether to introduce state control was exogenous.³²⁹ First, government was concerned about oppressing revolutionary movements and their propaganda. Because revolutionary circles and propaganda was centered in the bigger cities it was reasonable to increase control over these strategically important towns. The introduction of state-controlled local police forces had thus political reasons.³³⁰ Local police in Constance, for example, was assigned to the district, because the town was a gateway for revolutionists that lived in Swiss exile. In Rastatt local police was taken away from the mayor, because the government was concerned about riots and fights among the mass of workers that concentrated in the town during the construction of the railway and the fortress. Second, during the 19th century fight against crime was not the principal task of the local police forces.³³¹ Police work included duties like enforcing market- and fire-regulations as well as regulations on public health and morality. A major task, for example, was the enforcement of closing times and the detention of revelers. Fighting crime and investigation of criminals was thus only a smaller part of overall police work. This view is sustained by the fact that a specialized criminal investigation department was not created before 1876. A last indicator, that the

³²⁸ This may be due to the high negative correlation between the time trend and the number of courts (corr = 0.84). Indeed, the number of courts was strictly decreasing over time while the time trend is by definition increasing over time.

³²⁹ For the following see *Eibach*, Staat, pp. 150–160 and *Wirsing*, Gendarmerie, pp. 177–179.

³³⁰ For a history of the origins of the political police in Germany see *W. Siemann*, "Deutschlands Ruhe, Sicherheit und Ordnung". Die Anfänge der politischen Polizei 1806 - 1866, Tübingen 1985.

³³¹ For the U.S. cf. *E. Monkkonen*, History of Urban Police, in: *M. Tonry/ N. Morris* (ed), Modern Policing, Chicago 1992, pp. 547–580.

introduction of state-controlled police was exogenous to thefts during the 19th century is the fact that government planned to realize a fix ratio of police to inhabitants.³³²

In the case of the gendarmerie, there are no arguments why the number of gendarmes per 1000 inhabitants should not be endogenous. But the functional relationship between the number of gendarmes and the number of thefts can be modeled explicitly. Therefore, endogeneity can be eliminated using a three stage simultaneous equation model.³³³ The number of gendarmes per 1000 inhabitants can be assumed to be dependent on the number of registered thefts per 1000 inhabitants as well as on the density of population,³³⁴ the size of the district³³⁵ as well as its level of industrialization and urbanization. Districts may have a higher demand for security, because of the high concentration of population and capital. However, there may be also districts with low urbanization rates but nevertheless a high density of population. At last, the size of the district may also determine the number of gendarmes that were deployed, because an effective control is only possible, if there are a sufficient number of gendarmes per square kilometer. Equation nine describes these considerations:

$$G_{it} = RT_{it} + I_{it} + U_{it} + Dens_Pop_{it} + AREA_i \quad (9)$$

with: G_{it} = Number of gendarmes per 1000 inhabitants in district i at time t
 RT_{it} = Number of thefts registered by district courts in district i at time t
 I_{it} = The level of Industrialization in district i at time t
 U_{it} = The level of Urbanization in district i at time t
 $Dens_Pop_{it}$ = The density of Population in district i at time t
 $AREA_i$ = The size of district i in square miles.

Together with equation eight this describes the system of simultaneous equations that will be estimated here. The model was computed using the three stage least square

³³² Cf. *Wirsing*, Gendarmerie, pp. 177; 182. The ratio was 1:1000. Yet there was a high variation between cities. Cf. *Eibach*, Staat, p. 150.

³³³ The standard approach in the literature to deal with the problem of endogeneity is the instrumental variable approach. However, as Levitt argues, in the case of the police it is difficult to find good instruments. In his classic 1997 paper, he uses electoral cycles as an instrument for the number of policemen (see: *Levitt*, Using Electoral Cycles). Yet, this approach is not feasible in the case of the *Gendarmerie*, because the decision about an increase of the force was made by the ministry of interior and not by the elected diet. Therefore, I use a different approach to eliminate the problem of endogeneity: the three stage least square approach (3SLS) proposed by Zellner and Theil (see: *A. Zellner/H. Theil*, Three-Stage Least Squares: Simultaneous Estimation of Simultaneous Equations, in: *Econometrica* 1, 1962, pp. 54–78). The approach combines a simultaneous equation model with the two stage least square approach.

³³⁴ Population density was computed as population divided by the size of a district in square miles.

³³⁵ Data about district size is from the *Übersichten der Strafrechtspflege*.

estimator proposed by Zellner and Theil.³³⁶ The panel structure was modeled by introducing dummy variables for each district. A time trend was also included. The results of the regression are presented in table 4.7.

Table 4.7: 3SLS Simultaneous Equation Model (Endogenous Variables: Theft per 1000 Inhabitants, Gendarmes per 1000 Inhabitants)

	Dep. Var. Theft per 1000 Inhabitants	Dep. Var. Gendarmes per 1000 Inhabitants	
Industrial	20.4***	Industrial	1.67***
Urbanization	2.68***	Urbanization	0.19***
Growth Rate of Pop.	0.34	Population Density	-2.92e ⁻⁶ ***
Real Wage	-4.88***	Area	-0.003
Gendarmes per 1000 Inhabitants.	-6.91**	Theft per 1000 Inhabitants	-0.006
Police	0.78***		
D_1852	-3.03***		
D_1857	-0.32		
Number of Courts	-0.02		
Distance to <i>Kreisgericht</i>	0.009**		
Observations	631	631	
Chi ²	759.2***	1174.5***	
R ²	0.45	0.65	

Apparently, the sign of the coefficient of the numbers of gendarmes per 1000 inhabitants turns now negative indicating a decline in the registered theft rate when the number of gendarmes rises. It thus seems that the deterrence effect prevails.

4.3.2 Efficiency of the Police

In the previous subsection I discussed the question whether the productivity of the police rose over time; e.g. due to technological or organizational improvements. In the case of the *Gendarmerie* there was only little support for such an assumption. In the case of the state-controlled communal police forces, on the other hand, it is not implausible to assume that productivity rose since the mid 1860's or at least since the 1880's. These hypotheses can be tested by adding to equation eight a time trend and an interaction term for the *Gendarmerie* variable and the police dummy, respectively. If the productivity of the two kinds of police rose over time the interaction terms have to

³³⁶ Zellner/Theil, Three-Stage Least Squares.

be positive. This is only true for the police dummy but not for the variable that measures the effect of a change of the number of gendarmes. In the former case, the interaction term is positive and significant at the one-percent level while the police dummy becomes insignificant. This indicates a rise of the productivity of state-controlled police forces over time.³³⁷

4.3.3 The Evolution of State Capacity in Baden during the 19th Century

The previous sub-section also allows us to make some predictions about how the police forces and the formal administrative framework affect the theft rate. Given this information, it is possible to construct a Legal Capacity Measure. In the case of the formal administrative framework the combined effect of all four variables is negative. This is mainly driven by the strong negative influence of the 1852 dummy. Unfortunately, the dummy stands for three different developments: more precise definitions of offences, a stricter code of procedure and a rise in district courts responsibilities in terms of punishment-levels. In the case of the first two developments it is plausible that they may have reduced the number of thefts trialed at the district courts. An increase in the responsibilities of district courts in terms of punishment levels, on the other hand, would rather have increased the number of thefts trialed. This makes a reasonable interpretation of the 1852 dummy almost impossible. The 1857 dummy and the variable that measures the number of courts support the negative trend; although their coefficients are insignificant. Only the distance to the supervisory institution has a slight positive effect on the theft rate. The number of gendarmes per 1000 inhabitants has a strong negative influence on the theft rate. The negative influence of the *Gendarmerie* is so strong that it offsets the positive effect of the dummy that measures the efficiency of state-controlled police forces.

Given the empirical results the number of thefts per 1000 inhabitants can be used to construct a proxy for legal capacity. Apparently, the number of registered thefts is not only dependent on socio-economic factors, but also on administrative factors as well as on the number and the efficiency of the police forces. These latter two components directly influence legal capacity, e.g. the state's ability to protect its citizens from property offences. It is therefore possible to derive a measure for the development of legal capacity. This measure was constructed in two steps. In a first step, I derived an adjusted theft rate by subtracting the influences of the socio-economic variables and the time trend from the predicted values of the registered theft rate in the three stage

³³⁷ In terms of magnitude and significant of the coefficients, the regression does not deviate much from specification five in table 4.6.

simultaneous equation model. The adjusted theft rate for district i at time t can be written as:

$$ADT_{it} = T_{it} - SE_{it} - Trend = P_{it} + A_{it} \quad (10)$$

with: ADT_{it} = Adjusted theft rate for district i at time t .
 $Trend$ = A positive linear time trend that is 0 in 1829.

The adjusted theft rate is decreasing over time and contains negative values. Given the strong negative effects of P and A, a declining adjusted theft rate can be interpreted as an increase of legal capacity. The adjusted theft rate was therefore, in a second step, multiplied by -1 and normalized by adding one plus the absolute value of the absolute minima of the adjusted theft rate to every observation. The legal capacity measure for district i at time t can therefore be written as:

$$Legal\ Capacity_{it} = -(ADT_{it}) + 1 + |\min(ADT)| \quad (11)$$

Figure 4.3: Development of State Capacity in Baden, 1829-1877



Note: Each marker represents the value of the legal capacity measure for an individual district.

The development of the legal capacity measure is depicted in figure 4.3. Each marker in the figure represents the value of the legal capacity measure for an individual district. That is, figure 4.3 does not only traces the development of the level of legal capacity in Baden, but also the variation of legal capacity between the 78 districts that were examined here. Over time, the legal capacity measure increased. The major break

occurred around 1850 when the legal capacity measure jumped considerably. But there was not only a change in the level of the legal capacity measure. Except for some outliers, variation between districts also declined during the second half of the 19th century. This convergence is confirmed by the declining coefficients of variation presented in table 4.8. As figure 4.3 suggests, convergence was very strong during the 1850's when the coefficient of variation dropped from 0.22 in 1847 to 0.15 in 1852 and 0.12 in 1857.

Table 4.8: Descriptive Statistics of the Legal Capacity Measure

Year	Mean	Std. Deviation	Coefficient of Variation
1829	4.74	1.40	.30
1832	4.90	1.32	.27
1837	5.21	1.23	.24
1842	5.56	1.25	.22
1847	5.48	1.22	.22
1852	9.15	1.34	.15
1857	9.49	1.13	.12
1862	9.35	1.14	.12
1867	9.77	1.09	.11
1872	9.82	1.14	.12
1877	9.80	1.17	.12
Total	7.45	2.50	.34

Source: Own Calculation

That is, the legal capacity of the Grand-Duchy of Baden did not only ameliorate during the second half of the 19th century; it also was more equally distributed among the administrative and judicial districts indicating a convergence of administrative and legal quality. These results are in line with other findings of this thesis. As chapter one and three show, the implementation of newly introduced formal administrative processes and rules of professional conduct through state officials ameliorated since the 1840's. Those formal administrative processes and rules of professional conduct, however, were designed to increase the transparency of the administration and reducing arbitrary decisions and judgments of local district magistrates and judges; that is: they were designed to increase the state's legal capacity.

4.4. Conclusion

This chapter analyzed the development of legal capacity in the Grand-Duchy of Baden between 1829 and 1877. In doing so, I decomposed data of thefts per 1000 inhabitants registered at district courts in their institutional and non-institutional components. This approach allows us to make sure that institutional components actually played a role for the development of theft rates and therefore can be used for constructing a legal capacity measure. Using panel data from 19th century Baden one can conclude that institutional as well as non-institutional components played a role in determining registered thefts per 1000 inhabitant. It is therefore possible to construct a legal capacity measure which – in the absence of other indicators for legal capacity like the Index of Government Antidiversion Policies of the International Country Risk Guide or the World Bank Doing Business Indicator – can serve as second best indicators for a state's legal capacity and hence for the efficiency of its bureaucracy.

Constructing a legal capacity measure makes knowledge about the direction of influence of the individual components on theft rates necessary. In the case of socio-economic factors some of the traditional sociological and economic theories of crime are confirmed. A greater variety of goods, larger income gaps, pauperism, as well as the breakup of traditional values seemed to increase theft rates.

The analysis presented above gives much credit to the effect of the formal institutional framework that governed the organization of the civil and judicial administration. Those factors mainly had a negative influence on theft rates. Especially, the strong influence of the 1852 dummy has to be mentioned here. However, this dummy is hard to interpret, because it measures a mixture of different effects like the introduction of more precise definitions of offences, the introduction of a more strict code of procedure as well as an expansion of the local courts responsibilities in terms of punishment-levels.

At last, the existence of a well-trained and motivated police also influenced the activity of the courts. Compared to communal police forces, state-controlled police had a positive influence on theft rates. That is, the detection effect prevailed. This is not surprising given the relatively good organization, education and endowment of policemen in state-controlled police forces. In the case of the *Gendarmerie*, on the other hand, the deterrence effect prevails. The difference in the two police measures can be explained by the design of the two variables. While the gendarmerie-variable measures the influence of the number of gendarmes on the theft rate, the local police-variable is a dummy that compares a relatively efficient state-controlled organization with its

inefficient communal counterparts. The latter variable thus measures whether state-controlled police is *better* than communal-controlled police forces; while the former variable measures the overall effect of a change in the number of a police force on legal capacity.

Given these considerations, one can conclude that legal capacity and thus bureaucratic efficiency in Baden increased considerably in the second half of the 19th century. During this period, legal capacity became also more equally distributed between districts and therefore also among citizens.

Conclusion

This thesis analyzes the enforcement of growth-enhancing formal administrative and legal processes as well as rules of professional conduct among local bureaucrats, called district magistrates, in Baden during the 19th century. As a result of these reforms the efficiency of the bureaucracy rose since the second half of the 19th century. Interestingly, efficiency did not only rise in levels but also converged between administrative districts adjusting economic perspectives of individuals within the country.

While administrative and legal processes were only vaguely defined during the 18th century, they were reformed at the beginning of the 19th century becoming more predictable and more transparent. The professionalization of the bureaucracy also rose due to stricter rules of professional conduct and meritocratic recruitment. As chapter one argues, these reforms created an institutional framework that was more conducive to growth than in the 18th century. Yet, chapter one does not discuss how the beneficial formal administrative framework was actually enforced among district magistrates. Indeed, one observes a lack between the reform of the formal institutional framework and its actual implementation. On the one side this was due to missing implementation rules that were not enacted before the 1830's. On the other hand it also seems as if district magistrates were very reluctant to implement the new administrative and legal processes. This was especially true for those magistrates who were employed before the reforms. Chapters two and three therefore take a closer look at the internal dynamics of the administration in order to answer the question how district magistrates were motivated to implement formal administrative and legal processes as well as to adhere to rules of professional conduct.

Three incentive mechanisms played an important role: First, during the second decade of the 19th century the terms and methods of payment were reformed. The old system of remuneration that rewarded district magistrates with a participation in office fees, court charges, taxes and other dues as well as payments by the communes and remuneration in kind was abolished. In return local bureaucrats were paid fix remuneration by the central state that consisted solely of hard money. This made district magistrates less dependent on the communes and abrogated the need to extract resources from the district's subjects reducing incentives to engage in corrupt behavior vis-à-vis subjects (e.g. via blackmailing speed money) and the state (e.g. by helping

communal elites to embezzle taxes). On the other side, the new scheme of remuneration made district magistrates more dependent on the prince and his central government. Hence, the reform of the terms and methods of payment brought the interest of district magistrates in line with the aims of the central government. This basic reform was considerably supported by the introduction of an internal labor market for Civil Servants during the same period. Promotion within this internal labor market was, *inter alia*, made dependent on supervisor's assessment about the performance in regard to the implementation of administrative processes as well as adherence to the rules of professional conduct. That is, district magistrates that behaved in line with the government's rules of professional conduct and showed a high performance in implementing the formal institutional framework had a significantly higher probability of being promoted.

Yet, there was also another mechanism that made district magistrates more dependent on the central state. Besides paying fix remuneration, the government also granted social and material privileges, the latter consisting of a wage premium, old age pensions and widows insurance. Here, a shirking wage mechanism seemed to be at work. Because magistrates feared to lose their material and social privileges, they stuck to administrative processes and rules of professional conduct. Yet, because of a reduction in the wage premium during the second half of the 19th century, this incentive mechanism may have lost its influence.

However, the three incentive mechanisms described above did not work immediately. This is especially true for the more sophisticated internal labor market mechanism. The mechanism was highly dependent on the quality of controls; that is the supervisor's assessments of district magistrates' performance. But the quality of control was weak until the 1830's and did not improve until personal visitations were introduced. This was mainly due to two drawbacks. First, during the early decades of the 19th century supervisors were reluctant to control their subordinates more strictly, because both sides interpreted stricter control as defamation. This did not change until the 1830's when those supervisors were replaced. Second, the introduction of personal visitations was accompanied by the introduction of clearly defined categories of control that did not exist before and made an objective assessment of district magistrates' performance difficult. Yet, the introduction of clearly defined categories of control was not possible before the 1830's. Those categories build on implementation rules that defined how the administrative and legal rules which were introduced at the beginning of the century

should be implemented into processes. But these rules of implementation were not enacted until the late 1820's. Thus, there were two stages of reform that spanned from the first decade of the 19th century to the late 1830's. Thereby, the 1820's were a decade of relative stagnation. Yet, it was not only the reform of the formal administrative and legal processes that took a long time. It also seems that there were considerable learning effects among district magistrates. It took some time until district magistrates realized that the adoption of the new administrative and legal processes was rewarded financially and opened wider career prospects. Learning occurred most visibly along generational lines. The generation of district magistrates that was employed before the reforms had the greatest problems to accept the new formal institutional framework. This group also suffered from missing implementation rules and therefore only ill-defined administrative and legal processes. The generation of district magistrates that was employed around 1830 did much better in regard to the implementation of the formal administrative and legal rules and newly introduced processes. However, even in this generation there were some district magistrates who found it hard to subordinate themselves to the strict rules of professional conduct and the rigid formal administrative and legal processes. But the number of district magistrates who were unqualified for the needs of the administration reduced considerably until the 1850's.

Hence, the introduction of clearly defined implementation rules and stricter controls through personal visitations as well as learning effects among district magistrates led, after a considerable delay, to the implementation of the formal administrative framework. This should have a positive impact on the efficiency of the bureaucracy. Bureaucratic efficiency can be measured quantitatively. For the purpose of this thesis efficiency was defined as legal capacity; that is the ability of the state to enforce private contracts and to protect its citizens' property rights. Legal capacity was measured by the number of registered thefts in a district court that can be explained by the efficiency of the police forces as well as with the formal administrative and legal framework. According to this measure legal capacity and therefore bureaucratic efficiency raised during the second half of the 19th century. But there was not only a level effect. The variation of legal capacity between the administrative districts was also reduced during the second half of the 19th century leading to "administrative and legal convergence" within the country and creating an important prerequisite for Baden's successful late development.

Baden is thus a positive example for successful state building. However, it is striking that the reforms of the formal institutional framework that started during the first decade of the 19th century bore fruits not until mid-century. Baden's rulers have proofed stamina and patience in regard to their aim to reform the state. Yet, the question remains why they were willing to invest so many resources including a costly pension system and relatively high real wages. Therefore, one may ask why the 19th century state of Baden was successful in increasing its state capacity, while other states in other times did not succeed in doing so. In other words, one can pose the question why the reforms of the early 19th century were not rolled back. Given the widespread opposition to the reforms among district magistrates, the problems to implement a sound working supervisory system as well as the pronounced learning effects this would not have been surprising. The successful state building process in the Grand-Duchy of Baden was thus not inevitable; it may have gone *wrong*. This may serve as a warning for the reform process in Greece and the ongoing state building processes in the states of the Arabellion in Northern Africa. A simple reform of the formal institutional framework by introducing new laws or constitutions is a necessary but not a sufficient condition for successful reform and state building. It is the implementation of these formal rules that matters. This, however, is a long lasting process that is not achieved within a year or two; in Baden it took decades.

Appendix

A1. Names and Shelf Marks of District Magistrates Used in the Panel and Logit Model

All records can be found in the section 76 of the *Generallandesarchiv* in Karlsruhe.

Bach, Johann Joseph	203-204
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Bibliography

- W. Abel*, *Agricultural Fluctuations in Europe from the Thirteenth to the Twentieth Centuries*, London 1980.
- D. Acemoglu/D. Cantoni/S. Johnson/J. Robinson*, The Consequences of Radical Reform: The French Revolution, in: *American Economic Review* 101 2011, pp. 3286–3307.
- D. Acemoglu/S. Johnson/J. Robinson*, The Rise of Europe: Atlantic Trade, Institutional Change and Economic Growth, in: *The American Economic Review* 2005, pp. 546–579.
- D. Acemoglu/J. A. Robinson*, *Why nations fail. The origins of power, prosperity, and poverty*, London 2012.
- C.-A. Agena*, *Der Amtmann im 17. und 18. Jahrhundert. Ein Beitrag zur Geschichte des Richter- und Beamtentums*, Göttingen 1972.
- R. C. Allen*, The Great Divergence in European Wages and Prices from the Middle Ages to the First World War, in: *Explorations in Economic History* 38 2001, pp. 411–447.
- R. C. Allen*, *The British industrial revolution in global perspective*, Cambridge 2010⁴.
- W. Andreas*, *Der Aufbau des Staates im Zusammenhang der allgemeinen Politik. (=Geschichte der badischen Verwaltungsorganisation und Verfassung in den Jahren 1802-1818)*, Leipzig 1913.
- H. v. Barmeyer-Hartlieb Wallthor/K. G. A. Jeserich/H. Neuhaus*, *Persönlichkeiten der Verwaltung. Biographien zur deutschen Verwaltungsgeschichte 1648-1945*, Stuttgart 1991.
- J. Baten*, *Ernährung und wirtschaftliche Entwicklung in Bayern. (1730 - 1880)*, Stuttgart 1999.
- Jörg Baten, Anthropometrics, consumption, and leisure: the standard of living, in: *S. Ogilvie/R. Overy* (eds.), *Germany: a new social and economic history*, London 2003, pp. 383–422.
- J. Baten/A. Spadavecchia/J. Streb/S. Yin*, What Made Southwest German Firms Innovative around 1900? Assessing the Importance of Intra- and Inter-Industry Externalities, in: *Oxford Economic Papers* 59 2007, pp. i105-i126.
- G. S. Becker*, Crime and Punishment: An Economic Approach, in: *Journal of Political Economy* 76 1968, pp. 169–217.
- G. S. Becker*, *The Economic Way of Looking at Behavior. The Nobel Lecture*, Stanford 1996.

- G. S. Becker/W. M. Landes, *Essays in the economics of crime and punishment*, New York, NY 1974.
- H. Berger/M. Spoerer, *Economic Crisis and the European Revolutions of 1848*, in: *The Journal of Economic History* 61 2001, pp. 293–326.
- Markus Bernath, *Griechenland: Vize-Finanzminister in Athen räumt schwere Versäumnisse ein*, in: *F.T.D. - Financial Times Deutschland*, June 26, 2012.
- T. Besley/T. Persson, *Wars and State Capacity*, in: *Journal of the European Economic Association* 6 2008, pp. 522–530.
- T. Besley/T. Persson, *The Origins of State Capacity: Property Rights, Taxation, and Politics*, in: *American Economic Review* 99 2009, pp. 1218–1244.
- T. Besley/T. Persson, *Pillars of prosperity. The political economics of development clusters*, Princeton, NJ 2011.
- S. Brakensiek, *Fürstendiener - Staatsbeamte - Bürger. Amtsführung und Lebenswelt der Ortsbeamten in niederhessischen Kleinstädten (1750 - 1830)*, Göttingen 1999.
- Stefan Brakensiek, *Herrschaftsvermittlung im alten Europa. Praktiken lokaler Justiz, Politik und Verwaltung im internationalen Vergleich*, in: S. Brakensiek/H. Wunder (eds.), *Ergebene Diener ihrer Herrn? Herrschaftsvermittlung im alten Europa*, Köln 2005, pp. 1–22.
- J. Brewer/E. Hellmuth, *Rethinking Leviathan. The eighteenth-century state in Britain and Germany*, Oxford 2004.
- C. Buchheim, *What causes successful late development? Insights from history*, in: *The South African Journal of Economic History* 21 2006, pp. 52–83.
- B. G. Carruthers, *Politics, Popery, and Property: A Comment on North and Weingast*, in: *The Journal of Economic History* 50 1990, pp. 693–698.
- G. Clark/M. Huberman/P. H. Lindert, *A British Food Puzzle, 1770-1850*, in: *The Economic History Review* 48 1995, pp. 215–237.
- N. F. R. Crafts, *English Economic Growth in the Eighteenth Century: A Re-Examination of Deane and Cole's Estimates*, in: *The Economic History Review* 29 1976, pp. 226–235.
- Christof Dipper, *Government and Administration. Everyday Politics in the Holy Roman Empire*, in: J. Brewer/E. Hellmuth (eds.), *Rethinking Leviathan. The eighteenth-century state in Britain and Germany (= Studies of the German Historical Institute London)*, Oxford 2004.
- P. B. Doeringer/M. J. Piore, *Internal labor markets and manpower analysis*, Armonk 1985.

- J. Eibach*, Loyalität und "standesgemäße" Lebensweise. Zur Entstehung der staatlichen Beamtenhinterbliebenenpensionen am Beispiel Badens, in: *Zeitschrift für die Geschichte des Oberrheins* 139 1991, pp. 503–513.
- J. Eibach*, Der Staat vor Ort. Amtmänner und Bürger im 19. Jahrhundert am Beispiel Badens, Frankfurt a. M. 1994.
- J. Eibach*, Die Bekanntmachungen der Gesetze und Verordnungen in den badischen Gemeinden ab 1803, in: *Zeitschrift für die Geschichte des Oberrheins* 142 1994, pp. 431–440.
- Joachim Eibach, Konflikt und Arrangement: Lokalverwaltung in Bayern, Württemberg und Baden zwischen Reformära und 48er Revolution, in: *E. Laux/K. Teppe* (eds.), *Der neuzeitliche Staat und seine Verwaltung. Beiträge zur Entwicklungsgeschichte seit 1700* (= Nassauer Gespräche der Freiherr-Vom-Stein-Gesellschaft, vol. 5), Stuttgart 1998.
- J. M. Elsas*, Umriss einer Geschichte der Preise und Löhne in Deutschland. Vom ausgehenden Mittelalter bis zum Beginn des 19. Jahrhunderts, Leiden 1936.
- F. Engehausen*, Kleine Geschichte des Großherzogtums Baden. 1806 - 1918, Karlsruhe 2005¹.
- E. Engel*, Die vorherrschenden Gewerbszweige in den Gerichtsämtern mit Beziehung auf die Productions- und Consumtionsverhältnisse des Königreichs Sachsen, in: *Zeitschrift des Statistischen Bureaus des Königlich Sächsischen Ministeriums des Inneren* 1857, pp. 153–182.
- S. Epstein*, *Freedom and Growth. The Rise of States and Markets in Europe, 1300-1750*, New York 2000.
- Peter Evans, The State as Problem and Solution: Predation, Embedded Autonomy, and Structural Change, in: *S. Haggard/R. R. Kaufman* (eds.), *The politics of economic adjustment. International constraints, distributive conflicts, and the state*, Princeton, NJ 1992, pp. 139–181.
- P. Evans/J. E. Rauch*, Bureaucracy and Growth: A Cross-National Analysis of the Effects of "Weberian" State Structures on Economic Growth, in: *American Sociological Review* 64 1999, pp. 748–765.
- P. B. Evans*, *Embedded autonomy. States and industrial transformation*, Princeton, N.J. 1995.
- P. B. Evans/J. E. Rauch*, Bureaucratic structure and bureaucratic performance in less developed countries, in: *Journal of Public Economics* 75 2000, pp. 49–71.
- J. Federer*, *Beiträge zur Geschichte des badischen Landrechts*, Freiburg 1947.

- E. Fehrenbach*, Vom Ancien Régime zum Wiener Kongreß, München 1981.
- Hans Fenske, Allgemeine Geschichte Südwestdeutschlands im 19. Jahrhundert, in: *H. Schwarmaier* (ed.), Handbuch der baden-württembergischen Geschichte. Vom Ende des Alten Reiches bis zum Ende der Monarchien (= vol. 3), Stuttgart 1992, pp. 1–24.
- Finanzministerium*, Verordnungsblatt der Steuerrichtung, Karlsruhe.
- Finanzministerium*, Verordnungsblatt für die Beamten und Angestellten der Steuerverwaltung, Karlsruhe.
- H. K. Fischer*, Konsum im Kaiserreich. Eine statistisch-analytische Untersuchung privater Haushalte im wilhelminischen Deutschland, Berlin 2011.
- W. Fischer*, Der Staat und die Anfänge der Industrialisierung in Baden 1800–1850. Erster Band. Die staatliche Gewerbepolitik, Berlin 1962.
- M. Fleischhauer*, Das geistliche Fürstentum Konstanz beim Übergang an Baden, Heidelberg 1934.
- Robert Fogel, The Conquest of High Mortality and Hunger in Europe and America. Timing and Mechanisms, in: *P. Higgonet/D. Landes/H. Rosovsky* (eds.), Favorites of Fortune. Technology, Growth, and Economic Development since the Industrial Revolution, Cambridge 1991, pp. 33–71.
- L. Gall*, Der Liberalismus als regierende Partei. Das Großherzogtum Baden zwischen Restauration und Reichsgründung, Wiesbaden 1968.
- V. A. C. Gatrell and T. B. Hadden, Criminal statistics and their interpretation, Nineteenth century society. Essays in the use of quantitative methods for the study of social data, Cambridge 1972, pp. 336–396.
- H.-J. Gerhard*, Dienstneinkommen der Göttinger Offizianten 1750 - 1850, Göttingen 1978.
- H.-J. Gerhard/K. H. Kaufhold*, Preise im vor- und frühindustriellen Deutschland. Grundnahrungsmittel, Göttingen 1990.
- H.-J. Gerhard/K. H. Kaufhold*, Preise im vor- und frühindustriellen Deutschland. Nahrungsmittel - Getränke - Gewürze - Rohstoffe und Gewerbeprodukte, Stuttgart 2001.
- R. Gömmel*, Realeinkommen in Deutschland. Ein internationaler Vergleich, Nürnberg 1979.
- E. Gothein*, Johann Georg Schlosser als badischer Beamter, Heidelberg 1899.
- E. Gothein*, Wirtschaftsgeschichte des Schwarzwaldes und der angrenzenden Landschaften, New York 1970^{Rp}.
- Karin Gottschalk, Alkoholische Gärung. Herrschaftskompetenz und Eigennutz in der frühneuzeitlichen Lokalverwaltung Hessen-Kassels, in: *S. Brakensiek/H. Wunder*

- (eds.), *Ergebene Diener ihrer Herrn? Herrschaftsvermittlung im alten Europa*, Köln 2005, pp. 233–259.
- N. J. Gross, *Der Code Civil in Baden. Eine deutsch-französische Rechtsbegegnung und ihr Erbe*, Baden-Baden 1993¹.
- Die Verfassung des Großherzogtums Baden vom 22. August 1818, mit allen Abänderungen bis zum Gesetz vom 24. August 1904, *Deutsche Staatsgrundgesetze in diplomatisch genauem Abdruck*, Leipzig 1904, §§ 1–39.
- Großherzogtum Baden*, Jahresberichte der Landeskommissäre.
- Großherzogtum Baden*, Hofratsinstruktion 1794.
- Großherzogtum Baden*, Staats- und Regierungsblatt, Karlsruhe 1809.
- Staatsdienerpragmatik, Staats- und Regierungsblatt, Karlsruhe 1809, pp. 11–18.
- Großherzogtum Baden*, Übersichten der Strafrechtspflege im Großherzogtum Baden, Karlsruhe 1829-1879.
- Großherzogtum Baden*, Hof- und Staatshandbuch des Großherzogtum Baden, Karlsruhe 1834-1924.
- Großherzogtum Baden*, Amtliche Beiträge zur Statistik der Staatsfinanzen des Großherzogtums Baden, Karlsruhe 1851.
- W. Grube, *Vogteien, Ämter, Landkreise in Baden und Württemberg*, Stuttgart 1975.
- A. Hanauer, *Études Économiques sur l'Alsace Ancienne et Moderne*, Paris 1878.
- F. Hartung, *Das Großherzogtum Sachsen unter der Regierung Carl Augusts 1775-1826*, Weimar 1923.
- J. R. Hay/A. Shleifer, *Private Enforcement of Public Laws. A Theory of Legal Reform*, in: *American Economic Review* 88 1998, pp. 398–403.
- H. Henning, *Die deutsche Beamtenschaft im 19. Jahrhundert. Zwischen Stand und Beruf*, Wiesbaden 1984.
- Rainer Hermann, *Fessel Klientelismus*, in: *F.A.Z.*, August 28, 2012.
- E. S. Herzog, *Briefe über die Verfassung der Markgrafschaft Baden*, 1786.
- W. von Hippel, *Armut, Unterschichten, Randgruppen in der frühen Neuzeit*, München 1995.
- Wolfgang von Hippel, *Wirtschafts- und Sozialgeschichte 1800-1918*, in: H. Schwarzmaier (ed.), *Handbuch der baden-württembergischen Geschichte. Vom Ende des Alten Reiches bis zum Ende der Monarchien*, vol. 3, Stuttgart 1992, pp. 477–784.
- P. Hoffman/D. Jacks/P. Levin/P. Lindert, *Real Inequality in Europe since 1500*, in: *The Journal of Economic History* 62 2002, pp. 322–355.

- M. Hohkamp*, Herrschaft in der Herrschaft. Die vorderösterreichische Obervogtei Triberg von 1737 bis 1780, Göttingen 1998.
- A. Holenstein*, "Gute Policey" und lokale Gesellschaft im Staat des Ancien Régime. Das Fallbeispiel der Markgrafschaft Baden(-Durlach), Epfendorf 2003.
- H. S. Houthakker*, An International Comparison of Household Expenditure Patterns, Commemorating the Centenary of Engel's Law, in: *Econometrica* 25 1957, pp. 532–551.
- P. Howlett*, The internal labour dynamics of the Great Eastern Railway Company, 1870–1913, in: *The Economic History Review* 57 2004, pp. 396–422.
- A. E. Imhof/H.-U. Kamke*, Lebenserwartungen in Deutschland, Norwegen und Schweden im 19. und 20. Jahrhundert, Berlin 1994.
- R. V. Jackson*, Growth and Deceleration in English Agriculture, 1660–1790, in: *The Economic History Review* 38 1985, pp. 333–351.
- A. Keller*, Die badische Zivilprozessordnung von 1831, Berlin 1913.
- J. Kerkhoff/M. Miller/W. Beck*, Historischer Atlas von Baden-Württemberg, Stuttgart 1972–1988.
- Diethelm Klippel, Reasonable Aims of Civil Society: Concerns of the State in German Political Theory in the Eighteenth and Early Nineteenth Centuries, in: *J. Brewer/E. Hellmuth* (eds.), *Rethinking Leviathan. The eighteenth-century state in Britain and Germany* (= Studies of the German Historical Institute London), Oxford 2004, pp. 71–98.
- S. Knack/P. Keefer*, Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures, in: *Economics and Politics* 7 1995, pp. 207–227.
- F.-L. Knemeyer*, Regierungs- und Verwaltungsreformen in Deutschland zu Beginn des 19. Jahrhunderts, Köln 1970.
- B. Krapp*, Die badische Ämterorganisation vom Reichsdeputationshauptschluß bis zum Ende der Rheinbundzeit, Karlsruhe 1931.
- A. Kraus*, Quellen zur Bevölkerungsstatistik Deutschlands 1815–1875, Boppard am Rhein 1980.
- R. v. Krosigk*, Bürger in die Verwaltung! Bürokratiekritik und Bürgerbeteiligung in Baden ; zur Geschichte moderner Staatlichkeit im Deutschland des 19. Jahrhunderts, Bielefeld 2010.
- H. Kübler*, Besoldung und Lebenshaltung der unmittelbaren preußischen Staatsbeamten im 19. Jahrhundert, Nürnberg 1976.

- M. Kutz*, Studien zum deutschen Außenhandel, insbesondere zum Handel mit England und Frankreich von der französischen Revolution bis zur Gründung des Zollvereins. Eine statistische Strukturuntersuchung zur vorindustriellen Zeit, Bonn 1968.
- R. La Porta/F. Lopez-de-Silanes/A. Shleifer/R. W. Vishny*, The Quality of Government, in: The Journal of Law, Economics, & Organization 15 1999, pp. 222–279.
- Achim Landwehr, Finanzen, Rechte und Faktionen - eine herzogliche Untersuchungskommission in Leonberg 1755/56, in: *Stadtarchiv Leonberg* (ed.), Streifzüge durch 750 Jahre Leonberger Stadtgeschichte, Leonberg 2000, pp. 87–111.
- E. P. Lazear/Rosen Sherwin*, Rank-Order Tournaments as Optimum Labor Contracts, in: The Journal of Political Economy 89 1981, pp. 841–864.
- L. E. Lee*, Liberal Constitutionalism as Administrative Reform: The Baden Constitution of 1818, in: Central European History 8 1975, pp. 91–112.
- L. E. Lee*, The politics of harmony. Civil service, liberalism, and social reform in Baden, 1800-1850, Newark 1980.
- P. Lenel*, Beiträge zur Kenntnis von Rechtsverfassung und Rechtsverwaltung der Markgrafschaft Baden im 18. Jahrhundert, Karlsruhe 1912.
- S. D. Levitt*, Using Electoral Cycles in Police Hiring to Estimate the Effect of Police on Crime, in: American Economic Review 87 1997, pp. 270–290.
- J. B. de Long/A. Shleifer*, Princes and Merchants: European City Growth before the Industrial Revolution, in: Journal of Law and Economics 36 1993, pp. 671–702.
- G. Mahlerwein*, Die Herren im Dorf. Bäuerliche Oberschicht und ländliche Elitenbildung in Rheinhessen 1700-1850, Mainz 2001.
- J. M. Malcomson*, Work Incentives, Hierarchy, and Internal Labor Markets, in: The Journal of Political Economy 92 1984, pp. 486–507.
- Michael Martens, Was Griechenland braucht, in: F.A.Z., October 29, 2012.
- P. Mauro*, Corruption and Growth, in: Quarterly Journal of Economics 110 1995, p. 681–712.
- J. R. von Meldegg*, Aus den Erinnerungen eines badischen Beamten, Freiburg 1872.
- J. R. von Meldegg*, Aus den Erinnerungen eines badischen Beamten, Mannheim 1874.
- E. H. Meyer*, Badisches Volksleben im neunzehnten Jahrhundert, Stuttgart 1984.
- M. A. Meyer*, Biased Contests and Moral Hazard: Implications for Career Profiles, in: Annales d'Economie et de Statistique 1992, pp. 165–187.
- Eric Monkkonen, History of Urban Police, Modern Policing, Chicago 1992, pp. 547–580.
- A. Moses*, Kriminalität in Baden im 19. Jahrhundert. Die "Übersicht der Strafrechtspflege" als Quelle der historischen Kriminologie, Stuttgart 2006.

- J. von Müller*, Der öffentliche Dienst in Baden im 19. Jahrhundert, Heidelberg 1974.
- T. Nipperdey*, Deutsche Geschichte. 1800 - 1866. Bürgerwelt und starker Staat, München 1983.
- T. Nipperdey*, Deutsche Geschichte 1866-1918. Arbeitswelt und Bürgergeist, München 1994.
- T. Nipperdey*, Deutsche Geschichte 1866-1918. Machtstaat vor der Demokratie, München 1995³.
- D. North*, Structure and Change in Economic History, New York 1981.
- D. North*, Institutions, Institutional Change and Economic Performance, Cambridge 1990.
- D. North/P. Thomas*, The Rise of the Western World. A new Economic History, Cambridge 1973.
- D. North/J. Wallis/B. Weingast*, Violence and Social Orders. A Conceptual Framework for Interpreting Recorded Human History, Cambridge 2009.
- D. North/B. Weingast*, Constitution and Commitment: The Evolution of Institutional Governing Public Choice in Seventeenth-Century England, in: The Journal of Economic History 49 1989, pp. 803–832.
- S. Ogilvie*, State corporatism and proto-industry. The Württemberg Black Forest, 1580 - 1797, Cambridge 1997.
- Sheilagh Ogilvie, The State in Germany: A Non-Prussian View, in: *J. Brewer/E. Hellmuth* (eds.), Rethinking Leviathan. The eighteenth-century state in Britain and Germany (= Studies of the German Historical Institute London), Oxford 2004, pp. 167–202.
- S. Ogilvie*, 'Whatever is, is right'? Economic institutions in pre-industrial Europe, in: The Economic History Review 60 2007, pp. 649–684.
- Mancur Olson, Autocracy, Democracy, and Prosperity, in: *R. J. Zeckhauser* (ed.), Strategy and choice, London 1993², pp. 131–157.
- B. Ottnad*, Badische Biographien, Stuttgart 1982.
- Toni Pierenkemper, Haushalt und Verbrauch in historischer Perspektive - ein Forschungsüberblick, in: *T. Pierenkemper* (ed.), Haushalt und Verbrauch in historischer Perspektive. Zum Wandel des privaten Verbrauchs in Deutschland im 19. und 20. Jahrhundert, Sankt Katharinen 1987.
- Toni Pierenkemper, Der bürgerliche Haushalt an der Wende zum 20. Jahrhundert, Zur Geschichte der Ökonomik der Privathaushalte (= Schriften des Vereins für Socialpolitik, Gesellschaft für Wirtschafts- und Sozialwissenschaften, N.F., 207), Berlin 1991, pp. 149–185.

- Toni Pierenkemper, Haushaltsrechnungen in der historischen Wirtschafts- und Sozialforschung - Ein Überblick, in: *T. Pierenkemper* (ed.), *Zur Ökonomik des privaten Haushalts. Haushaltsrechnungen als Quelle historischer Wirtschafts- und Sozialforschung* (= Reihe "Stiftung Der Private Haushalt", vol. 12), Frankfurt a. M. 1991, pp. 13–33.
- Toni Pierenkemper, Informationsgewinne und Informationsverluste einer Analyse von Haushaltsrechnungen auf massenstatistischer Basis - am Beispiel ausgewählter bürgerlicher Haushalte im 19. Jahrhundert, in: *T. Pierenkemper* (ed.), *Zur Ökonomik des privaten Haushalts. Haushaltsrechnungen als Quelle historischer Wirtschafts- und Sozialforschung* (= Reihe "Stiftung Der Private Haushalt", vol. 12), Frankfurt a. M. 1991, pp. 61–75.
- J. E. Rauch*, Bureaucracy, Infrastructure, and Economic Growth: Evidence from U.S. Cities During the Progressive Era, in: *American Economic Review* 85 1995, pp. 968–979.
- F. A. Regener*, Der Staatshaushalt des Großherzogtums Baden. in seinen Einrichtungen, seinen Ergebnissen und seiner seit der Wirksamkeit der landständischen Verfassung eingetretenen Umgestaltungen, Karlsruhe 1963.
- A. Roth*, Die Rechtsverhältnisse der landesherrlichen Beamten in der Markgrafschaft Baden-Durlach im 18. Jahrhundert, Karlsruhe 1906.
- D. W. Sabeen*, Kinship in Neckarhausen, 1700 - 1870, Cambridge 1998.
- M. Salaba*, Die Bestände des Generallandesarchivs Karlsruhe, Stuttgart.
- R. Sandgruber*, Die Anfänge der Konsumgesellschaft. Konsumgüterverbrauch, Lebensstandard und Alltagskultur in Österreich im 18. und 19. Jahrhundert, München 1982.
- G. von Schmoller*, Der deutsche Beamtenstaat vom 16.-18. Jahrhundert, in: *Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft im Deutschen Reich* 18 1894, pp. 695–714.
- E. Schremmer*, Die badische Gewerbesteuer und die Kapitalbildung in gewerblichen Anlagen und Vorräten in Baden und in Deutschland, 1815 bis 1913, in: *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte* 74 1987, pp. 18–61.
- W. Schubert*, Französisches Recht in Deutschland zu Beginn des 19. Jahrhunderts. Zivilrecht, Gerichtsverfassungsrecht und Zivilprozeßrecht, Köln 1977.
- T. W. Schultz*, *The Economic Organization of Agriculture*, New York 1953.
- Andreas Schulz, Wirtschaftlicher Status und Einkommensverteilung - die ökonomische Oberschicht, in: *L. Gall* (ed.), *Stadt und Bürgertum im Übergang von der traditionellen*

- zur modernen Gesellschaft (= Historische Zeitschrift Beihefte, Beiheft N.F., 16), München 1993, pp. 249–271.
- H. Schwarzmaier*, Handbuch der baden-württembergischen Geschichte. Vom Ende des Alten Reiches bis zum Ende der Monarchien (=vol. 3), Stuttgart 1992.
- H. Schwarzmaier*, Baden: Dynastie - Land - Staat, Sigmaringen 2005.
- G. Seybold*, Württembergs Industrie und Außenhandel vom Ende der Napoleonischen Kriege bis zum Zollverein, Stuttgart 1974.
- L. I. Shelley*, Crime and modernization. The impact of industrialization and urbanization on crime, Carbondale, Ill. 1982².
- A. Shleifer/R. W. Vishny*, The grabbing hand. Government pathologies and their cures, Cambridge, Mass. 1999².
- H. Shpayer-Makov*, Career Prospects in the London Metropolitan Police in the Early Twentieth Century, in: Journal of Historical Sociology 4 1991, pp. 380–408.
- W. Siemann*, "Deutschlands Ruhe, Sicherheit und Ordnung". Die Anfänge der politischen Polizei 1806 - 1866, Tübingen 1985.
- A. Somerville*, A Letter to the Farmers of England on the Relationship of Manufactures and Agriculture, by One Who Has Whistled at the Plough, London 1843.
- R. Spree*, Klassen- und Schichtenbildung im Medium des privaten Konsums: Vom späten Kaiserreich in die Weimarer Republik, in: Historical Social Research - Historische Sozialforschung 22 1997, pp. 29–80.
- A. Steinhäuser*, Geschichte des Großherzoglich Badischen Gendarmerie-Corps. Von der Errichtung im Jahre 1829 bis einschließlich 1899, Karlsruhe 1900.
- K. Stiefel*, Baden: 1648-1952, Karlsruhe 1979².
- R. Straubel*, Kaufleute und Manufakturunternehmer. Eine empirische Untersuchung über die sozialen Träger von Handel und Großgewerbe in den mittleren preußischen Provinzen, Stuttgart 1995.
- M. Teufel*, Die Südwestdeutsche Polizei im Obrigkeits- und Volksstaat. Daten - Fakten - Strukturen, 1807-1932. Zur Geschichte der Polizei in Baden, Württemberg und Hohenzollern, Holzkirchen 1999.
- J. J. Tobias*, Urban Crime in Victorian England, New York, NY 1972².
- Hans-Peter Ullmann, Baden 1800 bis 1830, in *H. Schwarzmaier* (ed.), Handbuch der baden-württembergischen Geschichte. Vom Ende des Alten Reiches bis zum Ende der Monarchien (= vol. 3), Stuttgart 1992, pp. 25–78.
- J. Vögele*, Sozialgeschichte städtischer Gesundheitsverhältnisse während der Urbanisierung, Berlin 2001.

- A. *Wagner*, Ein Human Development Index für Deutschland: Die Entwicklung des Lebensstandards von 1920 bis 1960, in: Jahrbuch für Wirtschaftsgeschichte 2003, pp. 171–199.
- W. *Walz*, Die Eisenbahn in Baden-Württemberg. Geschichte d. Bahnen in Baden u. Württemberg 1840 bis heute, Stuttgart 1980.
- M. *Weber*, Economy and Society. An Outline of Interpretive Sociology, New York 1968.
- Wechmar*, Handbuch für Baden und seine Diener oder Verzeichnis aller badischen Diener vom Jahr 1790 bis 1840, nebst Nachtrag von 1845, Heidelberg 1846.
- E. *Weis*, Der Einfluß der Französischen Revolution und des Empire auf die Reformen in den süddeutschen Staaten, in: Francia 1 1973, pp. 569–583.
- W. *Windelband*, Die Verwaltung der Markgrafschaft Baden zur Zeit Karl Friedrichs, Leipzig 1916.
- B. *Wirsing*, Die Geschichte der Gendarmeriekorps und deren Vorläuferorganisationen in Baden, Württemberg und Bayern. 1750-1850, Konstanz 1990.
- B. *Wunder*, Privilegierung und Disziplinierung. Die Entstehung des Berufsbeamtentums in Bayern und Württemberg (1780 - 1825), München 1978¹.
- B. *Wunder*, Die Beamtenschaft als Stütze des Großherzogtums in Baden während des 19. Jahrhunderts, in: Zeitschrift für die Geschichte des Oberrheins 144 1996, pp. 381–396.
- B. *Wunder*, Die Badische Beamtenschaft zwischen Rheinbund und Reichsgründung (1806-1871). Dienstrecht, Pension, Ausbildung, Karriere, soziales Profil und politische Haltung, Stuttgart 1998.
- H. *Zehr*, Crime and the development of modern society. Patterns of criminality in nineteenth century Germany and France, London 1976.
- A. *Zellner*/H. *Theil*, Three-Stage Least Squares: Simultaneous Estimation of Simultaneous Equations, in: Econometrica 30 1962, pp. 54–78.

Ehrenwörtliche Erklärung

Ich versichere, daß ich die vorliegende Arbeit ohne Hilfe Dritter und ohne Benutzung anderer als der angegebenen Quellen und Hilfsmittel einschließlich des Internets angefertigt und die den oben benutzten Quellen wörtlich oder inhaltlich entnommenen Stellen als solche kenntlich gemacht habe.

Mannheim, im Dezember 2012

A handwritten signature in cursive script, reading 'Felix Selgert'. The signature is written in dark ink on a white background.

Felix Selgert

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