The impact of administrative tape on private firm performance

Green or red tape in the Northern Netherlands?

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Abstract

Many countries experience slow productivity growth. One of the possible reasons for this is over-bureaucratization and over-regulation that obstruct dynamic adaptation, innovative power and entrepreneurial activity. Alternatively, such bureaucracy and regulation could be interpreted as phenomena which society just has to learn to live with, and which otherwise do no real economic harm. This paper explores both opposite hypotheses. We do so by studying whether or not administrative tape determines the performance of private companies. Administrative tape is a multidimensional concept. We distinguish three dimensions: regulatory burden, regulatory quality, and regulatory change. The impact of these dimensions of administrative tape on private firm performance is estimated with unique survey data from 625 Dutch companies. We controlled for a variety of organizational, contextual and entrepreneurial characteristics. The results show that regulatory quality and regulatory change limit the performance of private companies.

Key words: administrative burden, regulatory burden, regulatory quality, regulatory change, red tape, green tape, firm performance.
INTRODUCTION

Modern democratic societies are associated with a well-functioning legal rule system (North 1990, 2005). Rules are needed in order to achieve economic, environmental and social targets, and to protect property rights of employees, employers, consumers and investors. Legal rule systems evolve dynamically over time because legal rules are introduced, changed and repealed all the time (Maltzman & Shipan, 2008; Martin & Vanberg, 2005; van Witteloostuijn & de Jong, 2008). On the one hand, this very rule dynamic is essential for viable democracies. If the legal rule system is set in stone, the democratic lifelines are blocked. On the other hand, the legal rule system can be too dynamic as well, offering insufficient stability. Then, trust in the democratic system is undermined, producing a counterproductive gap between legal rules and actual conduct. It is therefore the subtle balance between legal change and stability that offers the platform for economic growth and societal development.

From this perspective, it is important to understand the impact of legal rule systems on the performance of key societal actors, such as public and private organizations. Written rules have positive and negative effects (Adcroft & Willis, 2005; March & Olsen 1989, 2004; OECD, 1997). The potential positive effects of written rules, referred to as administrative “green” tape, include that they may increase action capability and organizational efficiency. Furthermore, private incumbent firms may benefit from rules that restrict competition. Similarly, due to rules, private firms may gain access to markets that previously were only open to government organizations. Many organizations and citizens, however, predominantly complain about the negative effects of rules, implying administrative “red” tape. Managers from Dutch healthcare organizations, for example, regularly report long lists of often conflicting and incomprehensible ministerial guidelines and regulations. In a similar vein, the business
world blames reduced competitiveness on increasing regulation. The theme of the lament is not only the fatigue that individuals face in their dealings with bureaucracy. Another tune highlights the negative impact on the economy and society as a whole. Administrative red tape may have substantial performance-damaging effects. Red tape harms economic growth by generating inefficiencies and wastages of resources (Djankov et al., 2002, 2006; Olson, 1997).

The fights against administrative red tape is attracting more and more attention in Western democracies. A case in point is the growth of the so-called “better-regulation programs” (Dunleavy, 1986; Radaelli, 2005). Today, the reduction of red tape is on the policy agenda in almost all European countries and international organizations (European Commission, 2006; OECD, 2001; Wegrich, 2009; World Bank Group, 2006). The commonly held view that red tape constrains entrepreneurship and limits welfare induced policy-makers to review their laws, to downsize the rule stock or to modify legal requirements. The case of the Netherlands is illustrative, which is often portrayed as a leading nation in these better-regulation policies (OECD 2004, 2006). The Dutch example is highlighted because of explicit policy targets (a 25 per cent reduction of administrative burden for firms in 2012), methods to measure administrative burden (Standard Cost Model, or SCM) and an institutional infrastructure that includes interdepartmental taskforces and the independent advisory board Actal (OECD, 2006). Ministries, for example, need to as for advice from Actal as to the introduction of new rules. For this, they have to perform and report regulatory impact assessments. In recent years, many countries copied the Dutch approach, which received a further boost due to the legitimacy that the method gained in international organizations.
Despite these efforts, concerns remain that red tape still significantly impacts firm activities negatively. Particularly, many better-regulation programs – despite all their potential – have largely failed in their attempt to reduce red tape for companies and citizens (e.g., OECD, 2010; UK Regulatory Reform Select Committee 2007-08). However, databases on the evolution of national rule stocks are few and far between. Such databases are required to offer evidence-based evaluations of governments’ better-regulation policies. An exception is van Witteloostuijn and de Jong (2007, 2008), who constructed a count database of Dutch national rules in higher education. They show that the stock of national rules in this domain increased by more than 800 per cent in the post-war period, with an acceleration in the 1990s and 2000s, the latter offering evidence that the rule-producing machinery is apparently not stopped by the Dutch better-regulation programs.

Both the measurement and analysis of administrative tape are challenging. To the best of our knowledge, micro firm-level studies on the consequences of administrative tape for private firm performance are scarce. Prior empirical work often offers insights into regulations and firm behavior at the macro level of countries (e.g., Djankov et al., 2008). Cross-country research focuses on the difficulties that citizens, businesses, and other stakeholders experience when interacting with government agencies (La Porta et al., 1998; Mauro, 1995). An overall conclusion from these studies is that the negative effects of administrative tape dominate. The available firm-level studies, however, offer mixed evidence. Athayde et al. (2006), for instance, suggest that the actual effect of administrative tape is minimal (see also Capelleras et al., 2005), whereas Carter et al. (2009) report evidence for negative effects (see also Alfaro & Charlton, 2006). Helm (2006) therefore argues that the causal link between the (economic) performance of private firms and administrative tape is complex, and not
necessarily negative, as is generally hypothesized. The key aim of our study is to contribute to this administrative tape – firm performance debate.

We will first offer a literature review, addressing fundamental drivers of administrative tape. In so doing, we will discuss definitions and measures of relevant concepts. Subsequently, we will explain the theoretical logic, and formulate our hypotheses. Administrative tape is a multi-dimensional concept. We make a difference between regulatory burden, regulatory quality and regulatory change. Next, we will introduce this paper’s research methodology, addressing issues related to data collection and our measures. Following that, we will present our empirical evidence. Finally, we will conclude with an appraisal, offering a reflection on opportunities for future research.

**LITERATURE REVIEW AND HYPOTHESES**

**Determinants of administrative tape**

In Western societies, many governments feel that they face a tension (Olson, 1997; Torres, 2004). On the one hand, they aim to design smaller, cheaper and more effective systems of public administration. On the other hand, they want to deliver better public services. In an attempt to relieve this tension, governments experiment with many different ways of improving performance. They try to reduce costs by means of, for instance, entrepreneurship, decentralization of services and private sector styles of management. As a result, profound changes in the organization of the public system have taken place (Diefenbach, 2009; Meyer & O’Tool, 2008). In this context, the debate about the added value of rules as well as the determinants of rule production takes center stage. Of course, rules are needed in democratic societies. How many rules are required, however, is an open question. The production of rules in many societies does not seem to have an upper limit.
Combined with the fact that rules are almost never repealed, the stock of national rules continues to grow indefinitely in many domains in many countries.

The focus on the production of rules is the essence of the stream of bureaucracy studies that, inspired by the work of Weber, started to flow in the end of the 1970s and has since evolved into an eclectic field of research. Weber’s theory focuses on the relationship between organizational structures, on the one hand, and administrative behavior, performance and change, on the other hand (Weber, 1978, but see also Brunsson & Olson, 1993, or Olson, 1997). Weber perceived bureaucratization as an outcome of calculation and interest, guided by experience. As Hilbert (1987) argues, when applied to societies, the distinctive feature of the Weberian framework is not bureaucracy per se, but rationalization in terms of a creative human activity that will perpetuate itself indefinitely. This explains why bureaucratization is difficult to reverse. There is no “ultimate project evaluation”, implying that civil servants and other policy-makers can never decide about the desirability of the creation of new rules. According to Hilbert (1987), this bureaucratic rationality is inherent to the rule creation process, and therefore cannot be removed.1

In a similar vein, recent studies about rule production point to the dynamics of the contemporaneous deregulation programs (Adcroft & Willis, 2005; Boyne et al., 2004). These deregulation programs are part of the new public management (NPM) ideology. The first NPM approaches were introduced in the late 1970s (Kirckpatrick et al., 2005; Page, 2005; Pollit & Boukaert, 2004). As with many schools of thought, NPM intends to offer blueprints as to how public sector organizations should be designed, organized and managed (Deem, 2004; Dunleavy et al., 2005). Put bluntly, NPM considers old-style public sector organizations to be inefficient and rigid organizations

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1 Parkinson (1957) and Downs (1967) offer similar explanations for the existence and growth of bureaucracies (see, for instance, Jochimson, 2009).
that are staffed with incompetent and uncontrollable employees who misuse their position (Olson, 2005). The reforms that are proposed are based on a private management ideology, rooted in neoclassical economics, that prescribes privatization, market competition and, above all, deregulation (Evetts, 2009; Torres, 2004).

From the perspective of NPM, the ideal government is envisioned as an interorganizational network that facilitates cooperation and consensus-seeking via flat and flexible organizations (Barzelay, 2000; Marinetto, 2003). NPM initiatives initially received support, but today an increasing number of NPM proponents acknowledge that NPM generates adverse outcomes (Hood & Peters, 2004).² A meta-study of Hodge (2000), for example, shows that greater contracting out by US public sector organizations subsequently increased bureaucracy, which in turn generated more rather than less contracting out. That is, Hodge (2000) reveals that decentralization of public services is accompanied by increased centralized control over the strategy and policy of the decentralized units. This paradox is an example for the often-observed counter-expected results of policy initiatives: decentralization leads to centralization, and to formalized and rigidly structured hierarchies rather than flexible and network type of organizations (Diefenbach, 2007; Hogget, 1996). When NPM initiatives are introduced, public servants often need more rather than less time for paperwork because they want to attempt to coordinate and control their new challenges (Protherough & Pick, 2002). Hence, as Diefenbach (2009) concludes, the envisioned improvements that should, in theory, follow from NPM programs are often overruled by an increase in formal requirements and relational complexity, which eventually leads to a misallocation of government time and resources.

² Examples of NPM failures are increasingly available. Schick (1996), for instance, reviews the pioneering NPM activities in New Zealand (see also Dunleavy et al., 2005; Moynihan & Roberts, 2002). New Zealand has approximately 3.5 million inhabitants. Due to NPM activities, more than 300 separate agencies and 49 different ministries were created.
A key explanation for what seems to be the unbridled growth of rules concerns the limited cognitive capabilities of rule-makers. March and Olson (1989, 2004) offer an elegant perspective on the question whether rule overproduction exist and, if so, to what extent. By and large, rule overproduction implies that an optimal level of national rules can be identified, but one may wonder whether such an optimum of national rules can be determined to begin with. In the setting of our research, March and Olson stereotype “green” and “red” administrative tape. On the one hand, by themselves, rules do not necessarily imply rigidity or inflexibility, because they may even prescribe change. Furthermore, rules may have positive side-effects, such as a contribution to democratic equality (Evans & Rauch, 1999; Henderson et al., 2007). On the other hand, all this notwithstanding, March and Olson argue that rules have negative effects as well. Rules embody obligations, rights, and interests, and therefore constrain the allocation of attention, priorities and perceptions. Rules, like any form of written legal documents, are, in varying degrees imprecise, inconsistent and / or obligatory. This is inherent to any written text, and fundamentally due to the limited cognitive capabilities of civil servants and other policy-makers who cannot foresee all future contingencies ex ante when writing a rule to solve a particular problem.³

The implication of the above is that it is difficult to know exactly whether administrative tape is “green” or “red” in nature. Due to the inherent limits of written rules, attributing causal effects from rules to specific organizational outcomes is hard to do. March and Olson therefore conclude that the claim that administrative tape is “green” is as plausible as the counterargument of “red” administrative tape. Civil servants or other rule-makers do rarely, if ever, know how “green” or “red” a particular

³ Of course, the issue of cognitive limited abilities dates back to the work of Herbert Simon. It is key in transaction cost economics, too, which suggests that contracts are needed to limit the opportunities of and incentives for opportunistic behavior.
new rule is or will turn out to be. Given that civil servants or other policy-makers are
not aware of the marginal effect of an additional new rule, they will continue to create
new rules under the presumption that each new rule by itself is green, and will have a
particular (unknown) goal to serve.

A final explanation for the unlimited production of rules derives from ecology-
based research. Van Witteloostuijn (2003) and van Witteloostuijn and de Jong (2007,
2008, 2010) show how organizational ecology (Carroll & Hannan, 2000) and the
ecology of organizational rules (March et al., 2000) can be applied and adapted in order
to understand the evolution of national rule stocks, as well as the underlying vital rates
of rule birth, death and change. For instance, van Witteloostuijn and de Jong’s (2007,
2008, 2010) findings for the evolution of law in Dutch higher education reveal that
ecological processes (next to and on top of demographic and institutional forces) can
explain the birth rate of national rules. They conclude that the stock of rules primarily
expands due to a powerful internal dynamic: that is, rules breed rules. In a similar vein,
Wegrich (2009) uses ecology-related arguments so to explain the diffusion process of
better-regulation programs – with a particular focus on the rapid diffusion of the SCM
method designed in the Netherlands. A key mechanism is the ‘keeping up with the
Joneses’ force. Once a critical mass of countries has adopted a policy, this policy will
gain legitimacy and credibility, which subsequently will lead to a diffusion of that
policy through a wider circle of nation-states. Additionally, Wegrich highlights the
importance of transnational networks in this diffusion process.

Consequences of Administrative Tape

The identification of fundamental drivers of administrative tape is a first step. A next
step is to determine the consequences of administrative tape, which is the focus of the
current study. Today, a variety of instruments, such as regulatory impact assessments and cost/benefit or cost-effectiveness analyses, are used to assess the effects of rules (Hahn & Hird, 1991; Harrington et al., 2000; Keyworth, 2006). For this paper, we review insights from studies in public administration and public policy. Public administration research has a focus on the causes and consequences of administrative tape for government organizations, and public policy studies for private companies.

Red Tape Research

Research on administrative tape in public administration started in the 1970s and 1980s with the publications of Kaufman (1977) and Wilson (1989). Their work, however, has been criticized for its ambiguity about concepts – particularly, the lack of an appropriate definition of administrative tape (Bozeman, 2000). Research in the 1990s and 2000s has produced substantial progress in advancing the knowledge of administrative tape, the more so because the number of empirical administrative tape studies in public administration mushroomed. In so doing, public administration informs administrative tape research like the current study on a range of issues, such as concepts, measures and public-private differences (Coursey & Pandey, 2007; Pandey & Scott 2002; Rainey et al., 1995; Scott & Pandey, 2000).

The key concept used in public administration studies of public services is red tape, which was primarily developed by Bozeman (1993, 2000). Administrative tape is

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4 The OECD and World Bank indicators are often applied, but these are subject to an ongoing debate concerning the usefulness of these indicators for policy design (Arrunada, 2008; Blanchet, 2006). Papers that apply these indicators typically study country-level phenomena. Djankov et al. (2006), for example, show that the growth of per capita GDP is negatively correlated with an aggregate index of business regulations in areas such as starting a business and getting bank credits. Alesina et al. (2005) apply the OECD indicators, and find that regulatory reforms are associated with increased investments. In a similar vein, Arnold et al. (2008) – in a 15-year historical productivity study of OECD countries – report that strict regulation of services reduces growth in ICT-using sectors.
frequently considered to be a pathology, implying excessive or meaningless paperwork and unnecessary rules or procedures (Bozeman et al., 1992). Although some scholars point to the beneficial advantages of administrative tape (Landau, 1991), many others have tried to identify and understand the causes of so-called pathological rules – or red tape. Bozeman rejects the possibility of beneficial administrative tape, and therefore defines red tape as “rules, regulations, and procedures that remain in force and entail a compliance burden but do not serve the legitimate purposes the rules were intended to serve” (2000: 12). Bozeman (2003) classifies red tape into ‘rules born badly’ and ‘good rules gone bad’. The causes for the former category include an inadequate comprehension of the means and ends of rules by rule-makers, over-control (that is, formalization as a response to uncertainty and ambiguity), and compromise and democracy, with too many stakeholders participating in the rule-making process. Compromise and democracy may be associated with rule drift and rule entropy, changes in rule implementation and the functional object of a rule, and rule misapplication. As Bozeman (2003) argues, these factors may lead to the evolution of otherwise good rules into red tape.

Bozeman’s definition has been refined in other studies in order to make the concept applicable in empirical research. Pandey and colleagues (Pandey, 1995; Pandey & Kingsley, 2000; Pandey & Scott, 2002) subsequently defined red tape as “impressions on the part of managers that formalization (in the form of burdensome rules and regulations) is detrimental to the organization” (Pandey & Kingsley, 2000:

5 Hence, red tape is by definition negative. The negative causality is directly reflected in the definition of red tape. Bozeman used the term ‘white tape’ to refer to organizationally beneficially rules. In a similar vein, DeHart-Davis (2008) conceptualizes a theory of green tape or effective rules. The theory identifies five attributes of a rule that are expected to increase both its technical capacity and acceptability to stakeholders: (a) written requirements with (b) valid means-ends relationships, which (c) employ optimal control, are (d) consistently applied and that (e) have purposes understood by stakeholders.
Hence, administrative tape is said to be red when managers view formalization as burdensome and detrimental to achieving organizational purposes.\(^6\)

Empirical studies in the tradition of Bozeman have a focus on red tape in public organizations. An important result thereof is that these studies show how Likert-type of scales can be used to measure the (refined) red tape concept. Red tape can mean different things to different managers, which may hamper construct validity. For that reason, empirical studies focus on organizational red tape in the organization at large or domain-specific red tape such as that regarding the personnel system in the organization. This empirical research tradition is very informative as to how to apply red tape questions in surveys. The survey presents a set of questions immediately after the definition of red tape. In so doing, potential heterogeneity of concepts is minimized. The use of principal components analysis generally confirms the uni-dimensionality of the particular red tape items.

**Business Impact Studies**

A second group of studies that relates to our work aim to quantify administrative tape in terms of costs for firms/organizations and nation-states (Allers, 1994; Hudson et al., 2009; OECD, 2001).\(^7\) These studies estimate the costs of administrative tape for European countries to be 3 to 4 per cent of GDP, on average. Additionally, these studies

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\(^6\) Many of these studies are part of the National Administrative Studies Project (NASP). NASP is a multi-method study, a key part of which is a survey administered to a nationwide sample in the USA (see, for example, Pandey & Welch, 2005, or Moynihan & Pandey, 2010).

\(^7\) In economics, Stigler (1971) was among the first to call for systematic studies of costs and benefits of regulation. For a recent discussion on methodological issues in economic studies of regulation, see, for example, Muhlerin (2007).
reveal significant differences between sectors and countries.\textsuperscript{8} By and large, this line of research offers three insights.

A first insight is associated with the classification and definition of costs due to administrative tape. Business impact studies identify different types of costs. The costs for developing, administering and enforcing regulations are absorbed by the public sector, and are labeled administrative costs. The private sector bears these costs of complying with rules and regulations. The costs of regulation to businesses include direct financial costs (e.g., administrative charges and taxes), compliance costs, and long-term structural costs. This line of research shows that businesses not only have administrative compliance costs, but also capital costs (when investments in, e.g., ICT systems are needed to comply with regulations), opportunity costs (in terms of time and money spend on meeting regulations, which hence are not available for performance-enhancing activities such as innovation), and psychological costs (of frustration due to regulatory requirements).

Business impact studies focus on administrative compliance costs, measuring these costs \textit{ex post} and “net” of potential benefits that regulations may bring to the company. The latter implies that business impact studies acknowledge that potential benefits may exist, but that these are difficult to measure. For that reason, the potential benefits are ignored. Of course, private companies – irrespective of their size, sector or legal identity – will always collect information for day-to-day management purposes. For that reason, company-own administrative costs are a natural element of business

\textsuperscript{8} Some of the international variety is due to differences in definitions of regulation costs, sample sizes and estimation techniques. Country-level estimates of administrative tape are typically obtained by multiplying a weighted sample average with the total number of companies in a sector and country. This approach is sensitive to characteristics of the sample and the structure of the economy. Helm (2006) therefore questions the value of such numbers, although he does not deny that theoretical considerations and empirical evidence for administrative tape can be valid.
life. Therefore, business impact studies highlight the importance of costs that derive from legal requirements on top of and above the company-own administrative costs.⁹

A second insight concerns the measure of administrative tape in terms of costs. Although different methods are applied, two of these dominate in business impact studies. A first approach applies the Dutch Standard Cost Model (SCM) or a variation thereof (Bennet et al., 2009; SCM Manual 2005; Wegrich, 2006).¹⁰ The main idea of the SCM is to start from single information costs included in legislation, calculate the time (hence: costs) of work needed in a company to comply with this obligation, and then sum up the number of ‘cases’ (frequency of occurrence and number of companies affected by the information obligation). The total of the costs calculated for each single information obligation of a regulation is regarded as the quantification of the administrative costs of this regulation. The sum of the costs of all regulations is considered to be the overall burden placed by administrative tape on businesses within a particular domain. The calculation of the costs of complying with regulation is based on interviews or, in some cases, actual time measurement (stopwatch approach). SCM scholars stress that the tool is not intended to offer an exact measurement or a representative sample of the actual costs of administrative tape for companies (Hudson et al., 2009). That is, despite its systematic quantification procedure, SCM scholars conclude that SCM-based measures remain a proxy of compliance costs. Others also

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⁹ Ministries and cabinets tend to outsource these studies to third parties such as consultancy companies or semi-public organizations. The quality of the consultancy reports is subject to debate. In case of the Netherlands, for example, the 2003 and 2007 benchmark estimates of the better-regulation programs nicely reported an almost perfect achievement of the 25 per cent, which is precisely at target, per ministry. Furthermore, a Dutch model simulation study indicated that the 25 per cent reduction in administrative burden would result in a 1.5 per cent growth of GDP (Tang & Verweij, 2004). This model-estimated figure is often cited as a factual outcome of better-regulation programs.

¹⁰ The SCM network (https://www.administrative-burdens.com/) is an informal network of approximately 24 countries that apply the SCM to measure and simplify their administrative burden.
have argued that the information requirements of the SCM method contribute to measurement errors beyond statistical acceptable threshold values (Keyworth, 2006; Malyshev, 2006).

A second approach starts from the presumption that companies do not and cannot administer in detail the costs of administrative tape, as is required in SCM methods (Allers, 1994; Bennet et al., 2009; Chittenden et al., 2005; Godwin & Lawson, 2009). It is difficult for firms to disentangle regular administrative activities from those that are carried out for compliance purposes. Therefore, these studies advocate the use of predefined scales linked to questions that are intended to measure administrative tape. This line of research offers evidence that perceptions of administrative tape correlate strongly with actual compliance costs of companies. Furthermore, respondents may show strategic behavior and, hence, may have an inclination to exaggerate the costs for “political” purposes in an attempt to influence policy-makers to reduce compliance costs (e.g., OECD, 2001). A counterargument suggests that respondents may already have a general feeling that they are unreasonably burdened by compliance costs. This makes exaggerations unnecessary (Allers, 1994). A carefully designed sample of firms will include companies that may over or underestimate the costs of administrative tape, and these may well outweigh each other.

**Hypotheses**

Administrative tape is a multi-dimensional construct. We will analyze the impact of three dimensions of administrative tape: regulatory burden, regulatory quality and regulatory change. Regulatory burden concerns all time and costs for companies to comply with formal rules and regulations in order to deliver all legally required

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11 These studies are applied to different rule domains, but research on tax compliance cost dominates (for a review see, for example, Evans, 2003).
information to international, national or local government agencies. This includes all actions taken by companies to ensure compliance with formal local, national and international legal requirements for licenses, monitoring, subsidies, safety, et cetera. Although positive effects of regulatory burden may exist – e.g., because legal requirements trigger companies to learn about their administrative organization and improve their efficiency – there are convincing reasons why regulatory burden is likely to be an impediment to the performance of companies. First, regulatory burden may be associated with crowding out effects and opportunity costs. They create disincentives for investment in innovation, which limits the potential scale and scope economies as financial and human resources are misallocated and wasted.

Second, companies may not have control over the size of regulatory burden. That is, like organizational and national rules, regulatory burden may be subject to an ecological upward dynamic (van Witteloostuijn & de Jong, 2010): regulatory burden breeds regulatory burden. Companies that need to comply with formal regulations are more likely to be under bureaucratic control, and are therefore more exposed to legal requirements. Once a company is in the legal system, the demand for additional requirements is boosted as officials are triggered to impose more rules upon businesses, being aware of the potential to regulate. As a consequence, the growth in regulatory burden increases with the volume of burden, implying that burden expands almost of its own accord.

Our first main hypothesis, which follows from the above, also relates to findings in public administration studies that show that perceptions of red tape dampen risk-taking among city-level public managers (Feeney & DeHart-Davis, 2009) and negatively affect organizational commitment and job satisfaction in public organizations (DeHart-Davis & Pandey, 2005), and that burdensome rules lower individual and
organizational performance in government (Brewer & Walker, 2005; Pandey & Mohinan, 2006).

Hypothesis 1 (H1: regulatory burden): Regulatory burden is negatively associated with private firm performance.

Regulatory quality is our second dimension of administrative tape. Government officials write down formal rules and regulations on paper. The literature review already revealed that, by its very nature, written text is a source of ambiguity – a conclusion that is grounded in the contract literature (Lyons, 1996; Lyons & Metha, 1997) and transaction cost economics (Williamson, 1985, 1996). Complex formal contracts or contracts with many clauses that are strictly specified allow for mitigating the risk of opportunistic behavior. This line of work emphasizes the concept of contract incompleteness. A complete formal contract is a contract that is extensive – that is, all necessary aspects are covered – and specific – that is, clauses are formulated such that they are verifiable and enforceable. Additionally, the legal enforceability of contracts depends on the consistency in the terms of the contract and the specificity of the contractual clauses. Transaction cost economics acknowledges that due to the cognitive limitations of human beings, complete contracts cannot be written.

Nonetheless, business firms are expected to use extensive contracts to mitigate moral hazard, particularly in the context of great uncertainty and asset specificity. In a similar vein, the government applies written rules to enforce behavior, and to mitigate contemporaneous and future risks. The government considers legal rules to be a necessary instrument to control firm behavior, but their effectiveness depends on the quality of the rules. Some rules are transparent and easy to interpret by companies, whereas others are inconsistent, requiring much paperwork and including conflicting requirements.
Hypothesis 2 (H2: regulatory quality): Low regulatory quality is negatively associated with private firm performance.¹²

Finally, we address changes in administrative tape as our third tape dimension. Rule changes are a key feature of legal systems in many nation-states (van Witteloostuijn & de Jong, 2008). In the life cycle of rules – births, changes and repeals – changes are among the most important events. Rule changes transform rule systems incrementally, in a gradual and persistent way. Rule changes are more common than other rule events. One reason for this is that policy-makers often take incremental decisions. They do so not only because there are few opportunities to do otherwise, but also because legislation is often the result of a social interaction process involving negotiations and compromises between policy-makers and stakeholders. The more often legal requirements change, the more often companies need to adapt to new circumstances. These changes will generate searching costs and the need to change administrative activities. Firms have to learn about new legal requirements, and information systems must be developed or adjusted. The more frequent legal requirements are changed, (i) the higher the costs that result thereof, (ii) the more the flexibility with which a company can operate will be reduced, and (iii) the more managerial attention is diverted away from other strategic decisions that would foster firm performance.

Hypothesis 3 (H3: regulatory change): Regulatory change is negatively associated with private firm performance.

¹² For the sake of symmetry, we here focus on low regulatory quality, implying a negative association, as in H1 and H2.
RESEARCH METHODOLOGY

Survey and Sample

Among the advanced nation-states, the Netherlands is one of the most heavily regulated economies of all. Furthermore, the Netherlands is perceived as a leading example in attempting to design and implement better-regulation programs. In this context, administrative tape is a key issue. So, for both reasons, the Netherlands offers a very suitable research context for what we try to do here. Our study offers an opportunity to test whether the reduction of administrative tape, as claimed by a sequence of Dutch cabinets, materializes in the performance of private firms – a key aim of better-regulation programs.

A questionnaire was designed and a survey implemented in a such way that we could hope to obtain satisfactory response rates (Dillman, 2000). The measurement items were generated through a review of the literature on business performance, red tape and regulatory impact assessments. For the design of the questionnaire, we also used experts at chambers of commerce, local government agencies, and two employer associations. This assessment yielded a set of tailor-made questionnaire items that were used in a pretest with 20 managers to verify the content and clarity of the items. The wording and response categories of a few items were slightly modified as a result of the pretest. The design process also revealed that a postal questionnaire with short questions and pre-defined categories would increase response rates. The final questionnaire contained 20 main items divided in three panels: one for firm characteristics, one for administrative tape and one for respondent demographics. The item scales and order of the items were designed in such a way that general boredom by the respondents was prevented.
The data were collected in the period from mid-September to mid-December 2010. The population of firms is located in the three Northern provinces of the Netherlands: Friesland, Groningen and Drenthe. The overwhelming majority of the firms in this part of the Netherlands are small or medium-sized enterprises, many of which are not web-enabled or are not willing to answer questionnaires via Internet. From the databases of the chambers of commerce, we selected a stratified random sample of 1,800 companies in the Northern Netherlands, stratified over main industry sectors and firm size classes. For each of these companies, we identified the director or senior manager directly responsible for the firm. The first wave of the questionnaire was accompanied with a personalized letter. The research was presented as a joint effort of the University of Groningen, the chambers of commerce and two employer associations. The respondents were ensured maximum confidentiality, in line with data collection procedures of the University of Groningen.

The questionnaire was anonymous, but the respondents were given the opportunity to receive a confidential and personalized report that would allow them to benchmark their company against other participating firms. Those firms that wanted to benefit from this opportunity were asked to provide contact information. The second wave, after four weeks, also included a personalized letter, as well as the questionnaire. Both waves included a postal-free reply envelope opportunity. During the data collection period, the research project was announced and introduced in newsletters and on websites of the chambers of commerce and both employer associations. We also web-enabled the survey to allow anyone interested outside the 1,800 targeted companies to answer the questionnaire. In total, 37 companies opened the website, of which 27 completed the questionnaire.
Of the 1,800 managers who received the survey, 625 responded, yielding a 35 per cent response rate. This is substantially higher than for other business surveys in the Netherlands, which report response rates in the 10-15 per cent range. The number of respondents, as well as the response rate, is also higher than for most of the country surveys in the international 2001 OECD project. We checked for potential non-response bias by comparing early and late respondents. Armstrong and Overtone (1977) argue that late respondents are representative of non-respondents. We found no significant differences between early and late respondents on characteristics such as firm age, number of employees and work experience of the respondent. Additionally, we compared the group of respondents who expressed their interest in a benchmark report \((n = 253)\) with those who did not have such an interest, and found no significant differences. An exploration of the open invitation via Internet and the mail survey also revealed no differences between the groups. We used Harman’s (1967) single factor test to assess whether or not our data feature significant common variance (Podsakoff & Organ, 1986). Unrotated factor analysis using the eigenvalue-greater-than-one criterion revealed seven factors, with the first factor explaining only 17 per cent of the variance in the data. So, it is unlikely that the findings can be attributed to common-method bias.

**Dependent Variable**

Secondary data on firm performance are often not available in the Netherlands. Due to their size and legal status, many companies in the Northern Netherlands are not required to publicly or otherwise report performance data. Tax authorities are not willing to share company files for the purpose of outside research. This lack of data makes a cross-validation of our primary performance measures with secondary sources not possible. However, earlier work revealed that the correlation between objective and subjective
measures of performance tend to be high (Allers, 1994; Brouthers, 2002; Dess and Robinson, 1984). Moreover, in the business literature, it has been argued that enterprises form their strategy and competitive maps on perceived information and events (Lang et al., 1997). Both arguments imply that subjective perceptions are valid performance measures, being reliable and with material consequences. We use two indicators of firm performance. In our survey, we asked the respondent’s opinion of (a) the average firm’s growth of total turnover in the past two years (ranging from strongly increased growth to strongly decreased growth), and (b) the performance of their company vis-à-vis their most important competitor (ranging from much better to much worse). Cronbach’s alpha for these items is 0.58. A factor analysis confirmed the uni-dimensionality of the items. We combined the two indicators into one overall measure of firm performance.

**Administrative Tape**

For our measures of administrative tape (i.e., regulatory burden, quality and change), we first offered the definition in the introductory paragraph of the questionnaire. This definition did explicitly not include tax payment-related regulatory burden. After this definition, we included two questions about regulatory burden. The first is a general measure. We asked the respondent to what extent s/he as an entrepreneur was hampered by regulatory burden (categories ranging from completely not to quite substantially). The second question asked the respondent to quantify the regulatory burden in monetary terms (categories ranging from less than € 5,000 to more than € 500,000). Cronbach’s alpha for this pair of items is 0.56. A factor analysis confirmed the uni-dimensionality of the items. We combined the two indicators into an overall index of regulatory burden. It is well known that these measures strongly correlate with firm size (e.g.,
OECD, 2001). That is, larger firms (in terms of turnover or total number of employees) report higher regulatory burden. This is confirmed in our data. For that reason, in line with business impact studies, we divided the index by the turnover of the company, and used this ratio in the regression analyses.

Second, we added three questions to measure the regulatory quality. We asked the respondents to evaluate three statements: the government continuously changes its rules, the legislation of the government contains many inconsistencies, and the legislation of the government implies much unnecessary paperwork (each was measured on a five-point Likert scale with categories ranging from strongly disagree to strongly agree). A factor analysis confirmed the uni-dimensionality of the items. Cronbach’s alpha of 0.84 is excellent. Note that, for the sake of symmetry, we reverse coded the regulatory quality variable, in line with the prediction of a negative association with private firm performance. We combined the three indicators into an overall index of regulatory quality. Third, the dynamic in administrative burden, referred to as regulatory change, was measured by the respondents’ assessment of the change in administrative burden (categories ranging from decreased burden to no changes and increased burden).

Control Variables
We entered three sets of control variables when we tested the hypothesized relationships. The first set concerns the context of the firms. Firms in new and expanding industries, for example, are expected to perform better than those operating in old and declining industries. Our respondents operate in four main industries. We added three dummy variables to account for industry differences: agriculture, manufacturing, and wholesale and retail trade (services is the base case, and this dummy
was thus not included in the regression analyses). Our respondents operate in different provinces that each may have different competitive environments. We included two dummy variables to account for regional differences, one for Friesland and one for Drenthe (Groningen is the base case). The companies are located in municipalities with different local tax regimes. Differences in local tax regimes may determine difference in firm performance. We measure the local tax regime by the property tax that companies are obliged to pay to local governments (COELO, 2010).

The second set involves firm characteristics – that is, the firm’s type of ownership, age of the firm, and firm strategy. Ownership structure may influence firm performance. For instance, with substantial ownership of cash-flow rights, the sole proprietorship form provides the incentive and power to undertake actions that will benefit the owner at the expense of the firm’s performance. In contrast, firms with shareholders are presumed to evaluate investments using market-based rules that maximize the value of the firm’s residual cash flows (Anderson & Reeb, 2003). Our respondents work in companies with four main different ownership types. We introduced three dummies to account for legal differences: sole proprietorship, limited liability company, and partnership (foundation is the base case). The age of a firm may impact a firm’s financial value as generated by managers (Finkelstein et al., 2009; Jayaraman et al., 2000). Older firms might be associated with lower performance than their younger counterparts because of outdated management styles and/or obsolete technologies, as well as their resistance to new business approaches. The age of the company was calculated by subtracting the year the firm was founded from the current year. The strategy of a firm is an important determinant of firm performance (Wijbenga & van Witteloostuijn, 2007). We included eight items that measure the strategy of a firm. A factor analysis (varimax rotation with the eigenvalues-greater-than-one
criterion) resulted in two distinct factors. The four items that loaded on the first factor were identified as an innovation strategy, and the four items that loaded on the second factor as a low-cost strategy. Cronbach’s alphas of 0.68 and 0.72 for innovation and low-cost strategy were satisfactory. We combined the relevant items into an index for innovation strategy and an index for low-cost strategy.

The third set relates to the human capital of the respondent. It is well known that the human capital of key decision-makers has an impact on the performance of a company (Wright et al., 2007; Parker et al., 2010). Entrepreneurs may increase their human capital through work experience and formal education. The longer an entrepreneur has held a management position in the focal firm or elsewhere, the more work experience has been gained. This is important because, for example, entrepreneurs with a great deal of experience tend to put more weight on the process of developing formal strategies than those who lack relevant managerial experience. Work experience was measured by an ordinal variable that indicated the total number of years the respondent had worked for both the focal firm and at other firms. The level of formal education was defined as having an official degree as a result of full-time or long-term training, so measuring an individual’s knowledge or competence base. Entrepreneurs with higher levels of formal education are expected to generate a wider range of creative solutions when faced with complex problems. Formal education was measured by an ordinal variable that accounts for the highest level of education a respondent obtained.

**EMPIRICAL RESULTS**

Means, standard deviations, and correlations are provided in Table 1. Results from the hierarchical ordinary least squares (OLS) regression analyses are summarized in Table
2. In preparation for the regression analyses, we deleted cases with missing observations, corrected for outliers and performed the regular tests to obtain reliable estimates. The latter tests gave satisfactory results: neither heteroskedasticity nor nonnormality is an issue. We tested for possible biases caused by collinearity among variables by calculating the variance inflation factor (VIF) for each of the regression coefficients. Calculations of VIF ranged from a low of 1.04 to a high of 7.30. The high values were for the dummies that measure the legal forms of the companies, and therefore are of no concern for our regression analyses. These and all other VIF values were well below the cut-off value of 10 recommended by Neter et al. (1985).

We estimated our models for two groups of firms, taking into account that previous research has shown that levels of administrative tape vary with firm size. The first group includes all companies in the sample with less than 500 employees \((n = 528)\). The second group includes all companies with less than 100 employees \((n = 510)\). For both groups, we ran a series of hierarchical regressions. The various fit parameters show that our models increasingly fit the data better. For the first group, the \(R^2\) improves from 7% in Model 1 to 10% in Model 2 \((F = 3.53; p < .01)\). For the second group, the \(R^2\) improves from 8% in Model 1 to 11% in Model 2 \((F = 2.23; p < .01)\). The estimates remain robust in terms of signs and significance levels. For both groups, the three dimensions of administrative tape were added in Model 2.

Taken together, the empirical results offer support for a red tape perspective on government regulations in the Northern Netherlands. In both groups, regulatory quality \((\beta = -0.13, \text{ with } p < .01; \beta = -0.15, \text{ with } p < .01)\) and regulatory change \((\beta = -0.10, \text{ with } p < .05; \beta = -0.09, \text{ with } p < .05)\) have a negative and significant effect on private firm performance. On top of this, for companies with less than 100 employees, regulatory
burden has a negative effect, albeit with modest significance ($\beta = -0.08$, with $p < .10$).

For larger companies, regulatory burden seems to be less relevant. The effect is negative but not significant ($\beta = -0.06$, but n.s.). Our interpretation of this finding is as follows. Complying with legal requirements involves a threshold value of administrative tape that all companies, irrespective of their size, need to meet. Our sample does not include larger companies that recently start a new business (potentially anticipating high levels of administrative tape). So, all larger firms in our sample have a history in their business sector. Apparently, to a greater or lesser extent, they all developed the routines needed to be able to meet the legal requirements of the government. This logic aligns with findings in other studies that report that administrative tape is regressive. For that reason, red tape has a larger negative impact on smaller firms.

To further explore the firm size effect, we ran complementary analyses (available upon request). These estimates have limitations in terms of number of observations. Hence, these extra analyses cannot be but exploratory. Recall that we measured firm size in categories ranging from 0-5, 6-10, 11-20, 21-50, 51-100, 100-500 to 500 or more employees. This determines the stratification of the groups. The estimates indicate that the impact of regulatory burden on firm performance is negative but not significant for companies with less than 20 employees, while regulatory quality and regulatory change have negative and significant effects on performance. For companies with less than 10 employees, only administrative tape in terms of regulatory quality remains negative and significant. This indicates that administrative tape particularly hampers the performance of medium-sized enterprises, limiting their opportunities to grow.

Finally, we observe that our results for administrative tape hold while controlling for a large number of alternative antecedents that may determine firm
performance. The results for the control variables indicate that with respect to firm performance no significant differences between companies in terms of industry sector, region and legal entity can be traced. Furthermore, the local tax regime, a low-cost strategy and work experience of the entrepreneur turn out to be irrelevant as well, as these antecedents have non-significant effects on private firm performance in the Northern Netherlands. The estimates in Table 2 reveal that older firms and older entrepreneurs report lower levels of performance, whereas innovative companies and better-educated entrepreneurs have higher levels of firm performance. These results are in line with general expectations, and therefore offer further confidence in the validity of the findings of our study.

CONCLUSIONS
Democratic societies cannot do without regulations. Government interventions via legal rules are key to, for example, protect the economic position of citizens or prevent tacit collusion between companies that may have negative effects on the economy. The need for legislation increases in times of rapid change in economic and social conditions. In this respect, administrative tape is “green” when the rules are beneficial to large parts of society. Regulations, however, are double-edged swords. Legislation can be poorly designed, and is often outdated. The introduction of a new rule is the outcome of lengthy institutional processes. Hence, rules often try to solve problems that no longer require intervention. Then, impact of rules may well be predominantly negative – and hence, administrative tape is “red” – when regulations create unnecessary costs to firms by creating barriers to trade, or frustrating investments or other economic activities.

Furthermore, in our modern world economy, the design and implementation of rules no longer are a unique privilege for national civil servants and other domestic
policy-makers. Firms increasingly need to comply with regulations from multiple institutions, such as the European Union or the World Trade Organization. It is likely that this globalization or internationalization of public administration will continue, at least in Europe, despite negative sentiments advocated by conservative political parties. The European Union produces generic legislation that is intended to apply to all firms in all Member States. As a result, particularly smaller companies are faced with legal requirements that have little to do with their local circumstances. Again, this internationally produced administrative tape may be “green”, when positive effects dominate (e.g., when rules foster an integration process between countries that in the long run is beneficial to companies and citizens). However, this administrative tape does turn “red” when (unexpected) negative effects outweigh the positive effects, so damaging the performance of private companies.

To a certain extent, administrative tape may discourage entrepreneurship, slow down business responsiveness, and reduce innovation. Variation in business performance may result from variation in administrative tape, next to and on top of the effect of many other firm antecedents (such as type of strategy and legal status), outside circumstances the company must face (e.g., industry characteristics and local tax regimes), and the characteristics of the key decision-maker (like tenure and education). The aim of our study was to test the relative importance of administrative tape in determining private firm performance. Our hypotheses predict red effects from three dimensions of administrative tape, building upon insights from research traditions on administrative tape in public administration, public policy and business impact studies: burden, quality and change. We collected questionnaire data for a sample of 625 private firms in the Northern Netherlands. In so doing, we are able to determine the color of (aspects of) administrative tape for private firms in the Northern Netherlands. The
Netherlands offers an appropriate research context because this country is well known for its rule-producing institutional framework, as well as for its recent attempts to limit negative consequences of red tape.

We believe that our study offers at least three broad contributions to the extant literature. Our first contribution relates to our measures of three dimensions of administrative tape. By definition, administrative tape is a perception of an entrepreneur or manager. For that reason, empirical studies are advised to apply perception-based measures in order to understand causes and consequences of administrative tape. It has been argued that administrative tape is a complex phenomenon that is difficult to measure. That is, the application of the concept is challenging because it is used with different meanings in different empirical settings. Our measures of administrative tape show their value added. We developed a short series of simple questionnaire items that emerge as valid and consequential measures of three dimensions of administrative tape: regulatory burden, quality and change.

Our second contribution can be found in the data collected. Existing research suggests that a case study is an appropriate method to analyze administrative tape. Case studies help to identify and explore processes. For that reason, regulation studies have explored this method to investigate particular regulation cost events. Notwithstanding the importance of case studies, their limitation is that they focus on single events, and therefore lack the scope needed to generalize findings, determine correlations and explore causalities. As a complementary approach, the current study is based on collecting firm-level information for a larger sample of private companies. Firm-level data are needed not only to understand the incidence, nature and impact of administrative tape in the world of entrepreneurs, but also to move beyond the available country-level studies. A database like ours is exceptional, showing that firm-level
information on administrative tape can be collected by means of a carefully designed questionnaire and data collection strategy. In so doing, as a side-effect, we contribute to red tape research in public administration that focuses on public organizations by exploring the performance effect in a sample of private companies. Although our survey method has its well-known limitations, the data have enabled us to develop a good insight into both factual information and subjective interpretations concerning the role of administrative tape in driving entrepreneurial performance.

Our third contribution derives from the significant empirical findings of our work. We measure administrative tape with perceptual quantitative indicators, and show their relative importance in driving private firm performance. Together, the combination of the significant findings suggests that particularly a low quality of regulations and changes in administrative tape are perceived to be detrimental to the performance by our sample of private firms. For small and medium-sized companies, regulatory burden is an additional dimension of administrative tape that is seen as hampering private firm performance. We found a negative impact of administrative tape on performance while controlling for a substantial number of entrepreneurial, firm and context characteristics. By doing so, we eliminated potentially spurious relationships, as well as alternative explanations for private firm performance. Hence, for our sample of private firms, we found clear evidence that the color of administrative tape is red.

Our study is not without limitations, which offer opportunities for future research. First, the use of cross-sectional data from private firms in the Northern Netherlands limits the generalizability of our results. With cross-sectional data, we cannot perform causal analysis of processes that determine the outcomes observed. A firm-level panel dataset would offer the chance to do so. Second, our assessment relies on the questionnaire-based personal judgments of one respondent per company.
Although management research often obtains reliable information from single respondents, biases may arise due to a person’s vested interests. Respondents may have reported too high or too low levels of administrative tape and/or firm performance. Our focus, however, is not on the levels of tape and performance per se, but rather on the correlates. We believe that our data collection strategy has minimized the bias in the correlation between our key variables. The survey was carefully tested, the questions were simple, and we used different scales for firm performance and administrative tape.

Nonetheless, taking the above into account, biases cannot be fully excluded. A replication of our study with, for example, more and other questions concerning administrative tape and firm performance would allow for cross-validation of the findings reported in this paper. A next logical step would be to test our model in other parts of the Netherlands and, in so doing, determine whether the role of administrative tape in driving private firm performance in other Dutch regions is similar. Moreover, also related to the causality issue raised above, a replication of our study among the same sample of firms would produce repeated measures of the key variables. And of course, new data from entrepreneurs in other countries, including developing and transition economies, would allow for testing of the general validity of our findings in an international context. Additionally, an international database offers ample opportunities to investigate the combined effects of macro and micro-level variables on firm performance and, as such, to determine how the role of administrative tape for entrepreneurs varies across institutional frameworks. Finally, new data collection would provide the chance to add other financial and non-financial performance indicators, as well as alternative measures of administrative tape.

Future research may add complexity at the firm level by estimating moderator effects. An interesting question is, for example, why some companies have sufficient
absorptive capacities that allow them to comply with (new) regulations from multiple institutions without suffering (too much) from the redness of the tape, whilst others have not. Administrative tape is nothing new, at least not for companies that are old enough to have overcome liabilities of newness. Still, the variation in perceived red tape is substantial, as is the effect of this red tape on private firm performance. Understanding why this is so would help to design firm-level strategies that dampen the negative effect of administrative tape. Particular characteristics of entrepreneurs or firms may “moderate away” the negative effect of administrative tape on firm performance. In so doing, new research may also explain whether, and if so: why, firms perceive differences in administrative tape.
REFERENCES


APPENDIX: Questionnaire items and scales (translated from Dutch)

1. What is the main economic sector your business operates in?
   Scale: four categories – i.e., (1) agriculture, (2) manufacturing and construction, (3) wholesale or retail trade, hotels and catering, and services, and (4) transport, storage or communication.

2. What was your business’ average annual turnover in the past two years?
   Scale: six categories, ranging from 100,000 Euros to more than 2.5 million Euros.

3. In which year did your business start?
   Scale: the year given by the respondent

4. Did your business’ turnover in the past two years...*
   Scale: five categories, ranging from strongly increase to strongly decrease.

5. How many persons in total are employed in your business (in full-time equivalents)?
   Scale: eight categories, ranging from 0-5 full-time equivalents to more than 500 full-time equivalents.

6. What is the legal status of your business?
   Scale: four categories – i.e., sole proprietorship, partnership, limited liability company, and foundation.

7. How did the performance of your business in the past two years compare to your most important competitors?*
   Scale: five categories, ranging from much better to much worse.

8. Indicate the name of the province and municipality in which your business is located.
   Scale: the province and municipality given by the respondent.

9. How important are the next strategies for your business?*
Frequent innovation of products or services; marketing activities such as advertisements; using high prices in order to highlight products or services in the market; break up of the market in different segments; control of costs via detailed allocation of expenditures to departments or products; control of costs via the use of fixed prices for equipment or hours; maintaining low prices versus competitors; and maintaining low prices for advertising activities.

Scale: each category included a five-point Likert scale, ranging from very important to completely unimportant.

10. The government (national, province and municipality) defines administrative tape as all time and costs for companies to comply with laws and regulations, and to provide all by the government required information. This may include licenses, control, governance, subsidies, safety at the shop floor and accountability information, but also requirements from Europe for the management of your business. Tax-related tape is excluded from this definition.

To what extent are you, as an entrepreneur, limited by administrative tape?

Scale: a seven-point Likert scale, ranging from to completely not to substantially well.

11. What is according to your estimates the total cost of administrative tape for your business?

Scale: eight categories, ranging from less than 5.000 Euros to more than 500.000 Euros.

12. Compared to a year ago, did the administrative tape for your business (a) increase, (b) stayed about the same, or (c) decrease?*

13. To what extent do you agree with the next statements?*
The government continuously changes its rules; the legislation of the government includes many inconsistencies; the legislation of the government includes much unnecessary paperwork.

Scale: each category included a seven-point Likert scale, ranging from strongly agree to strongly disagree.

14. How much work experience do you have in total (in paid and professional jobs)?
   Scale: seven categories, ranging from less than 1 year to more than 15 years.

15. What is your age?
   Scale: seven categories, ranging from younger than 25 years to older than 55 years.

16. What is your highest degree of education?
   Scale: six categories, ranging from elementary school to university.

Notes: scale items indicated with * have been reversed coded before entering them into the regression.
## Table 1. Correlations, means, and SDs

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Table 2. The Impact of Administrative Tape on Firm Performance

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Notes: Standardized coefficients with standard errors in brackets; * p <.10, ** p <.05, and *** p < .01.