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# What You Want Depends on What You Know: Firm Preferences in an Information Age

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Abraham L. Newman<sup>1</sup>

## Abstract

Information has become a core input for many companies. This article examines how this affects firm policy preferences. In contrast to national typologies of capitalism or microeconomic expectations, it uses information economics and historical institutionalism to construct a deductive model positing two basic logics. Firms with significant information assets view data as a private good, supporting policies that constrain information access and distribution. Companies with few information assets face a network effects economy and thus call for policies that promote a liberal data environment. The information asset argument is examined in the context of initial data privacy legislation passed in the United States, Germany, France, and the United Kingdom in the 1970s and early 1980s. The finding of the article contributes to literature interested in the political economy of services-based economies, underscores the significance of sociohistorical processes for preference formation, and calls attention to the boundary conditions of historically derived causal propositions.

## Keywords

preferences, services, information policy, privacy, historical institutionalism

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<sup>1</sup>Georgetown University, Washington, DC, USA

## Corresponding Author:

Abraham L. Newman, Georgetown University, School of Foreign Service, ICC 501, Washington, DC 20057, USA  
Email: [aln24@georgetown.edu](mailto:aln24@georgetown.edu)

Service companies account for more than 50% of the businesses on the S&P 500 and 70% of added value in the advanced industrial economies (Wolfl, 2005). For many of these firms, information—transmission, segmentation, or access—plays a critical role in their business model. Even the most physical of services (e.g., transportation companies) rely on information to generate decisive productivity gains (Loebbecke & Powell, 1998).

It is thus not surprising that information policy—regulations that affect the availability and distribution of data—has become a major political battleground in capitals across the advanced economies. Broadband access, data privacy, Internet domain names, intellectual property, and wireless spectrum are just a few recent hot button issues.

Interestingly, these debates have set a panoply of firms against each other in a number of odd-couple alliances across countries and in international fora. The battle over intellectual property rules in Europe, for example, flips sector positions established in previous U.S. debates, pitting European entertainment companies demanding weaker intellectual property protections against technology firms such as Apple.<sup>1</sup> At the international level, wireless telecommunications firms have been involved in a pitched fight among themselves for roughly a decade over finding a next generation standard (Cowhey, Aronson, & Richards, 2006). Similarly, firms from democratic countries in Europe joined those from autocratic regimes in Saudi Arabia and China in making demands over the governance of Internet domain names globally (Drezner, 2007).

As these alliances often stretch traditional sectoral definitions and differ across jurisdictions, this article offers a preliminary exploration of firm policy preferences over information policy. Drawing on work from information economics and historical institutionalism, I construct a causal argument that explains firm preferences given particular historically rooted institutional arrangements that shape the relative variation in information assets (Clarke, 1983; Pagano & Jappelli, 1993; Shapiro & Varian, 1999). Information assets are data over which a single firm has exclusive control. In short, what you know in relation to others determines what you want. Specifically, two dominant logics emerge. Firms that enjoy a considerable stock of information assets will view their data as a private good and will support efforts to limit information access. Firms with relatively few assets, by contrast, will enjoy network effects by sharing information and therefore will resist efforts to limit information access and will support policies that broaden network participation. The information asset explanation, then, produces distinct expectations from arguments stressing national models of capitalism and runs counter to conventional neoclassical economic explanations that stress competition in fragmented markets.

The argument is fundamentally an extension of materialist claims about how the nature of a firm's inputs shapes its policy preferences. In contrast to typical capital or labor inputs, however, information has several notable qualities—it is nonrival and there is no (or in a modern economy very low) marginal cost to its replication and distribution (DeLong & Froomkin, 2000). Because of these properties, patterns of information ownership are often socially and historically embedded (Woll, 2008). Unlike an industrial plant, which is an excludable and rival asset, information may be a private asset in one context and a collective good in another. Digital music, for example, can be either depending on the intellectual property rules governing it. The excludability of information in an economy is largely determined by the feedbacks of previous public policy decisions, which shape information asset characteristics (Lessig, 1999; Pierson, 1993).

As the distribution of information assets among firms is not bound by sectoral or jurisdictional boundaries, a central empirical payoff of such an approach will come in understanding an increasing number of odd-couple alliances and opponents that will no doubt influence a range of critical information policy issues. Theoretically, the article's argument challenges the pervasive assumption in research on comparative capitalism that identifies core variables grounded in mechanical production. As services increasingly dominate national and international markets, research must scrutinize the appropriateness of explanatory metaphors (e.g., mobile assets or factor endowments) drawn from industrial processes.<sup>2</sup> In addition, it underscores the importance of sociohistorical processes for the development of materialist policy preferences. The article, then, reassesses how function and location matter for services firms that rely on information. More generally, it recognizes the role that history plays in theory generation and points to the importance of the adaptation of existing causal claims to new contextual environments (Blyth, 2002).

As a plausibility probe of the argument, the article uses the historical narrative of early national debates concerning data privacy laws. National governments first proposed data privacy laws in the early 1970s to respond to concerns regarding the spread of computer technologies. These laws establish rules for the collection, use, and exchange of personal information. The case of data privacy is particularly useful as it is among the first issues concerning information to affect firms, and the simultaneous nature of the policy development across the globe offers an ideal area to employ a structured case comparison. The article examines four national narratives—those of the United States, Germany, France, and the United Kingdom. All of these cases examine firm preferences of financial services companies, an industry that is

deeply tied to information flows, and offer important variation in patterns of information assets and national institutional models. The analytic narrative provides a setting to identify the mechanisms that underpin policy preferences and examine the viability of the information asset argument (A. Bennett & Elman, 2007; Büthe, 2002; Hall, 2003).

The article is organized around three sections. It begins by presenting the information structure argument rooted in information economics, which adapts insights from the previous theories to an empirical environment where information plays a greater role. The second section examines the argument in the historical narratives of early data privacy efforts across country. The third and final section concludes, addressing the study limitations and underscoring its more general implications.

## **Preference Formation in the Information Age—Private Goods Versus Network Effects**

Understanding policy preference remains one of the core underexplored issues in political economy debates (Frieden, 1999).<sup>3</sup> In general, this literature assumes a set of underlying interests such as the desire to survive or maximize profits and then examines how these interests translate into preferences concerning specific policy questions such as trade liberalization or social policy reform that have distributional consequences (Woll, 2008). Two research strains have greatly contributed to the debate, one focusing on the material pressures faced by firms and the other emphasizing national institutional environments.

The materialist argument, at its core, contends that a firm's inputs define its interests. This research has received particular attention in the field of political economy as researchers have attempted to parse out the political effects of trade. Studies have identified various factors including the relative mobility of inputs and the specificity of assets to explain industry interests vis-à-vis trade liberalization, monetary policy, and macroeconomic reform (Frieden, 1991; Milner, 1988; Rogowski, 1989). Investment banks, for example, support international economic integration because they enjoy the benefits of capital mobility, whereas firms with expensive industrial factories have limited exit options. Depending on the economic factor emphasized by the scholar, political conflicts emerge between classes or industries (Hiscox, 2003).

In sharp contrast, a second line of work has found that national institutional settings predict firm preferences. These institutions constrain and enable firm behavior, changing the cost-benefit analysis of firms to certain policy decisions. Early work identifying typologies of national models of capitalisms

focused on political institutions that differentiated the distribution of capital—statist, corporatist, and market—in society. These financing mechanisms were critical during the industrial era, when many industries such as chemicals, steel, or automobiles had tremendous start-up costs. Variation in these institutions shaped the incentives that firms faced to promote specific policy reforms and the ability of the state to direct such change (Hall, 1986; Zysman, 1983). More recent iterations on this theme have concentrated on the role of business in coordinating economic adjustment (Hall & Soskice, 2001). Differences between coordinated economies and liberal market economies shape firm preferences on a host of issues such as labor mobility and human capital programs. The configuration of political economy institutions in liberal market economies, for example, drives firm preferences for high labor mobility and general skills education. Institutionalized relations among business, labor, and capital in the form of works councils, long-term bank lending, and neocorporatist structures, by contrast, in coordinated economies offer a number of mechanisms to promote firm commitments to job security and specific skill building. This in turn facilitates firm production of high-quality diversified goods and incremental innovation. Research has employed similar explanations stressing institutional complementarities across a wide range of preference domains from national welfare policy to positions in multilateral institutions (Fioretos, 2001; Swenson, 1991). Theories based on national models of capitalism have two primary implications: the ongoing process of state development shapes firm preferences, and firms will have different preferences across countries based on their respective institutional environments.

These two perspectives have made important contributions to understandings of firm preferences. They tend, however, to root their explanations in factors that in part are contingent on a historical moment that emphasized industrial production. As such, class and capital played a central role in the analytic explanations of firm preferences, and these were often located within the confines of the nation-state. External or endogenous factors that changed the dynamics of labor formation or the substitutability of capital drove shifts in interests. Such arguments face increasing difficulty to explain preferences as these categories have become attenuated. Although the modern economy has not eliminated either class or capital as pillars of the political economy, a third factor—information—increasingly affects the ability of companies to compete and make profits (Boyle, 2003; Castells, 1996; Rosenau, 2002).

Across a range of industries including marketing, software, entertainment, pharmaceuticals, transportation, and financial services, information has become a critical factor of production (Brynjolfsson & Hitt, 2003; Jorgenson &

Stiroh, 2000; Zysman, 2006). Information, in the economic realm, describes the collection of data from which conclusions may be drawn. These conclusions are then used to reduce uncertainty (Shannon, 1948; Wiener, 1948). In some instances value is located in knowledge about consumers and suppliers. Firms use personal information to assess risk, minimize fraud, and customize marketing. Similarly, logistics—the ability to know what products are needed where and when and the ability to get them there—is fundamentally a revolution in information management. In other cases, information in the form of intellectual property drives firm profits. Rather than knowledge about consumers and suppliers, intellectual property transforms information into a good. Over the past century, advances in information technology and data networking have transformed the amount of information produced and the capacity of firms to manipulate and share that information. Firms, in their quest to survive and maintain their profits, must examine how they deploy not only labor and capital but also information.

To understand how the rise of information as a prime factor of production changes policy preference, it is important to consider the nature of inputs and institutions for firm preferences in information industries. In short, what is the value of information, and how might it change across country, time, sector, or firm? Adapting the insights from both materialist and institutional traditions to the context of information-intensive industries, I argue that the nature of a firm's inputs or assets matters and that the institutional setting is important. Unlike labor or capital, however, which often have a rooted physicality that determines their relative specificity or mobility, the value of information assets is the product of a particular social and historical trajectory. Information raises several difficulties for traditional capitalist markets. It is not inherently rival—the use of information by one individual does not prevent the use of that information by another individual. This complicates issues of pricing as there is no clear per-unit cost for a good. The ability to determine price is further complicated by the fact that there is a very low marginal cost to the reproduction and distribution of information. Especially with the advent of computers and computer networks, perfect digital copies can be forged and transmitted at almost no marginal cost. Because of its nonrivalry and reproducibility, firms confront the challenge of excluding consumers and competitors from using information without purchasing it (DeLong & Froomkin, 2000; Shapiro & Varian, 1999).

The distribution of information in the economy, however, is not random or free. This is because of feedbacks in the public policy regime (Pierson, 2006)—the accumulation over time of technological and political decisions that shape the distribution of information assets. Rules on sector structures

such as competition policy or consolidation regulations affect the number of firms that produce and have access to information, reasserting rivalry. The communications infrastructure affects the cost to individuals and firms of distributing data, and this infrastructure architecture is in part a function of government policy. Some countries such as Saudi Arabia strictly centralize the communications infrastructure, whereas other such as South Korea have actively subsidized access diffusion (Boas, 2006; Goldsmith & Wu, 2006; Milner, 2006). The deregulation and liberalization of the telecommunications infrastructure divided the infrastructure among a number of providers. Although many popular depictions of the Internet age paint a world of information freely zipping back and forth across the globe, information asset distribution (and the material incentives derived from them) is tied to laws that regulate its use, the architecture of information networks, and long-term sectoral developments that may reach back several centuries (Lessig, 1999; Spar, 2001). The legacies and unanticipated consequences of these decisions shape the information environment in which a firm must construct its business strategy and simultaneously its lobbying positions. In contrast to typologies of capitalism that focus on national institutions of business coordination, this analysis emphasizes overlapping and cross-cutting public policy choices at the industry level that shape the relative distribution of information.<sup>4</sup> Importantly, the argument is centered on the place of the firm within a given information environment. As such, it allows for relative assets to differ within countries as well as across countries, shedding light on cross-national and intrasectoral variation.

Drawing on work from information economics, I identify two ideal typical logics—private information and network effects (Clarke, 1983; Pagano & Jappelli, 1993). These two logics provide clear hypotheses concerning how firms would react to changes in information policies. This is not a universal theory of firm preferences but builds on information economics to provide a specific causal claim explaining political preferences of firms over information policies.

It is important to underscore that the argument presented here is focused on policy preferences and not political influence. Standard accounts of political influence inspired by neoclassical economics have highlighted industry structure as central to the ability of firms to organize and overcome collective action problems (Grier, Munger, & Roberts, 1994; Salamon & Siegfried, 1977). According to this line of reasoning, concentrated industries are better positioned to assert their preferences. Although this literature speaks to the potential power of firms to get their interests included in the political process, it says little about the underlying policy preferences that they seek.

The following discussion, by contrast, emphasizes how market dynamics in information-intensive businesses shape the latter.

In information markets where information assets are consolidated in the hands of a few companies, incumbent firms have a large pool of private information resources. The centralization of information in the hands of a few firms means that each firm has a wealth of information that can be used exclusively by that firm against its competitors. Firms use their information advantage to target products more effectively to their clients, minimize risk, and extract rents. Incumbent firms have an incentive to resist public policies that increase information access. Such policies would reduce information asymmetries in the market and thus devalue their stockpile of information. Conversely, incumbent firms should support policies that bolster protections against information loss. These policies strengthen the incumbent's position and make it harder for new entrants to obtain access to valuable information resources.

Where no single firm or small group of companies dominates information ownership, a different logic emerges. Here, companies are information poor. In contrast to neoclassical economics where market fragmentation promotes competition, information economies suggests that firms have an incentive to share information with one another (Clarke, 1983; Pagano & Jappelli, 1993). Although they forfeit the value of holding private information, that value is low given the small amount of information they hold. This argument builds on the network effects literature, which argues that in information markets the value of any one node in a network is determined by the number of nodes in the overall network (Katz & Shapiro, 1994; Shapiro & Varian, 1999). Take the example of a social networking site such as Facebook. Such a Web site is not very useful or interesting if there is only one user who posts to the site. Each additional individual that is added to the network, however, multiplies the value of the network to each user who is connected. Similarly, a credit reporting agency that has access to information from only one bank is not very useful. As more banks provide information to the credit reporting agencies, those reports become more valuable to all of the participating banks.<sup>5</sup> Shared information can be used to minimize risks or offer specialized services that ride on the network. In information markets that are highly fragmented companies often gain value by sharing information with one another, producing self-reinforcing incentives to maintain and expand information access.

To summarize, I expect that firms with few information assets will support information policies that promote access and distribution. Firms with significant assets, by contrast, oppose such policies. In contrast to the expectations of the national models of capitalism literature, firms share preferences

with firms in other countries based on the character of relative information asset distribution and not on the nature of the national model of capitalism. And contrary to standard microeconomic analysis, firms in fragmented markets cooperate.

I scrutinize the hypotheses by examining the preferences of financial services firms in the United States, Germany, France, and the United Kingdom to proposed data privacy legislation in the 1970s and early 1980s. Data privacy offers a clear test of the argument as such rules constrain the transfer of information in an economy and thus sit squarely in debates about information policy. These countries offer an ideal set of cases for the structured focused comparison as they provide a wide range of variation in firm preferences, national models of capitalism, and information asset distribution. The preferences of financial services firms are scrutinized as their business is directly tied to information management and thus offer a useful first test of the information asset argument.

For the case study, sector concentration is used as a proxy for relative information asset distribution. Given the coherence of sectoral boundaries during the period under investigation this should not be a controversial assumption. The use of this proxy, however, does not mean that the two are always highly correlated. As sectoral demarcations breakdown, firms might appear to be in a concentrated sector (e.g., telecommunications infrastructure) but have a fragmented information asset portfolio (Zysman & Kushida, 2009). The relative distribution of information among firms is then the key analytic distinction.

Within the area of data privacy, the theoretical perspectives offer clear expectations for the cases. The national models argument would predict that firms from the United States and the United Kingdom should share preferences whereas firms in Germany and France should prefer similar outcomes. Firms in liberal market economies, which are known for their emphasis on transparency and markets, should oppose data privacy regulations as they enhance bank secrecy. Firms in coordinated economies, by contrast, should support data privacy laws as they comport with the general opacity of the economy and embolden bank secrecy laws, which are a useful tool in coordinated, bank-based lending. The information asset argument expects that financial services firms in the United States and Germany, two countries that owing to particular historical-institutional reasons are populated with many local and medium-sized banks with limited information assets, should oppose data privacy rules. Firms in France and the United Kingdom, which have a small number of universal banks with large customer bases, should accept similar reforms.

The empirical section proceeds in three sections. The first provides background on data privacy laws, what they entail, and how they affect firms. This is followed by comparisons of preferences of financial services firms in the United States and Germany and then the United Kingdom and France.

## **The Push for Comprehensive Data Privacy Legislation**

Restrictions on the collection and processing of personal information first emerged in the 1970s with the diffusion of computer technology. Governments and firms developed proposals to use computers to construct large-scale data banks, which would help these organizations reduce fraud, rationalize their operations, and enhance customer management. At the same time, scandals involving the misuse of personal information such as Watergate enflamed concerns that these data banks might threaten personal privacy (C. Bennett, 1992; Hondius, 1975; Regan, 1995).

Legislative proposals quickly emerged that attempted to regulate the use and processing of this new wealth of personal information. The proposals centered on a set of basic principles that required firms to provide notice to consumers concerning their privacy practices, allow consumers to limit the transfer of personal information to other organizations, offer individuals access to company data records so as to guarantee accuracy, and maintain security over data warehouses. The principles have become known as the Fair Information Practice Principles (FIPP) and underpin most national and international efforts to regulate data privacy concerns (see Table 1).<sup>6</sup> Legislative drafts across the advanced industrial democracies applied the FIPP principles to the public and private sectors. These comprehensive data privacy rules were to be enforced by new independent regulatory agencies—data privacy authorities.

Political alliances across the advanced industrial democracies emerged that pushed to limit the ability of government and business to aggregate and share sensitive data. In all of the countries examined, socially activist lawyers and computer professionals along with civil rights advocates formed the core of the policy networks supporting data privacy legislation (Newman, 2008). In some countries, industry, especially the financial services sector, vocally opposed this legislation. In others countries, however, the same sector either raised little objection or actually supported the creation of such rules. The empirical puzzle, then, is to explain why firms in some countries allied with advocates of privacy regulation and in other countries they did not.

**Table 1.** The Fair Information Practice Principles

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Collection limitation: Personal information collection should be limited and lawful
Purpose: The purpose of data collection should be disclosed, and data should not be used for other purposes without consent
Openness: Individuals should be informed about privacy policies
Accuracy: Data should be accurate, complete, and current
Participation: Individuals may request information about data held by organizations and challenge incorrect data
Security: Stored data must be secure from theft or corruption
Accountability: Organization must be held accountable to measures that implement the above principles

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For firms, a critical provision of these proposed laws concerned consent requirements. Legislation allowed companies to use personal data to complete the business task for which that information was collected. But for firms to share data with other companies, a firm would have to obtain consent from its customer. Although consent rules do not eliminate or ban the transfer of personal data across companies, they do create new responsibilities for privacy protection and were to be enforced by government agencies. These responsibilities naturally affect the ease with which companies can share data with other companies. Why might financial service companies differ in their reaction to data privacy legislation that covers the private sector?

### *Financial Services Sector Opposition in the United States and Germany*

*United States.* Data privacy legislation reached the top of the U.S. legislative agenda in the early 1970s. The release of a report on the issue conducted by the Department of Health Education and Welfare in 1972 recommended using the FIPP principles as the basis for such legislation, and the Watergate scandal underscored the urgency of the problem (Regan, 1984). During the summer of 1974, the Senate considered adopting comprehensive legislation. Such legislation would have subjected U.S. companies to FIPP norms. Representatives of the private sector, especially U.S. financial services firms, virulently opposed these private-sector rules. The heavy opposition stemmed in large part from the distribution of information assets within the U.S. financial services sector.

Owing to multiple historical reasons, information-intensive industries including financial services were highly fragmented in the postwar period. In response to populist pressure and the Great Depression, Congress passed a

**Table 2.** Cross-National Bank Sector Concentration in 1990

	Top five banks (% of total industry holdings)
France	52
United Kingdom	44
Germany	17
United States	11

series of laws including the McFadden Act of 1927, the Banking Act of 1933, and the Bank Holding Company Act of 1956, which limited the ability of financial services firms to establish a retail presence in multiple states. As a result, the U.S. financial services industry is populated by an enormous number of small, local banks and insurance companies. The largest five banks, for example, hold less than 15% of the industry's total (see Table 2; Coleman, 1996; Moran, 1994).<sup>7</sup> In addition, the legislation limited the ability of companies to form universal financial service firms, forcing companies to specialize in retail banking, investment services, or insurance.

To overcome the inherent information asymmetries of working in a limited geographic area, financial services firms relied on a complex network of information sharing. Independent credit bureaus founded in the 19th century proved central. Some 2,000 credit bureaus distributed across the United States collected credit data on individuals and then provided that information to financial services companies (Olegario, 2001). It should come as no surprise that firms such as credit bureaus, banks, and insurance companies saw privacy legislation as a very real threat to their livelihood.

Financial services lobbied forcefully against the adoption of private-sector rules. The American Bankers Association argued that there was no empirical evidence of private-sector abuse and that such rules would undermine vital information exchanges.<sup>8</sup> National Bank Card (the company which would later introduce the Visa card) explained in the Senate Hearings on the bill,

As presently drafted the legislation would seriously affect the reporting of account data to a credit reporting agency, thus destroying the relationship between credit grantors and credit reporting agencies. Modern technology permits credit grantors to respond to consumers efficiently and rapidly partially by virtue of accessing credit information through on-line terminal facilities or alternatively by telephone inquiries. If the free flow of information is impeded by law, the resulting inefficiencies will necessarily be translated into higher costs to industry and consumers. (U.S. Senate, 1974, p. 606)

Similarly, TRW, which was one of the largest credit bureaus at the time and would later become Experian, stressed the incompatibility of consent rules with the network effects economy that had developed in the United States.

TRW specifically objects to requirements which would preclude transferring individually identifiable data to another system without obtaining the prior informed consent of an individual. These provisions would impede, if not eliminate, the free flow and exchange of credit information which is vital to our credit economy. . . . We submit that the all-encompassing regulation advocated in the proposed legislation disregards the ethical responsibility of the industry and, if enacted, would result in crippling the credit system which has evolved over the years to the advantage of consumers, business and the national economy. (U.S. Senate, 1974, pp. 666-667)

A consensus emerged across the financial services community that regulation should be limited to the public sector and that the private sector should be left to self-regulation. The strong pressure exerted by the financial services sector proved critical as the final legislation, the Privacy Act, excluded regulation of the private sector.

Although the line of argumentation fits with the information asset argument, the case by itself does not disconfirm the expectations of national models of capitalism or sectoral arguments based in neoclassical economics. Turning to events in Europe, however, reveals the limits of existing models steeped in the industrial era and the merits of the adapted information asset argument.

*Germany.* Calls for data privacy legislation emerged nearly simultaneously in Germany to those in the United States. A government commissioned study was released in 1972, which also recommended the creation of comprehensive regulations based on the FIPP principles (Simitis, 2003). Between 1972 and 1976, the draft came under intense scrutiny by financial services firms. At a set of hearing held during this period, representatives of these firms argued that the new regulation would create economic ruin. Industry feared that rules governing the exchange of personal information would hinder the exchange of information, promoting economic fraud and squelching the industries economic development.<sup>9</sup>

Underpinning the intensity of industry opposition was the fragmented character of financial services, which relied heavily on personal information exchange. Industries ranging from insurance to retail credit do not hold a monopoly on personal information and therefore require information

exchanges to minimize fraud and promote sales. For example, the three-tiered German banking system, including the private banks, the savings banks, and the credit cooperatives, meant that few banks could rely on their own storehouse of personal information to identify risk in the retail banking segment (Deeg, 1999). Furthermore, the savings and cooperative banks are organized around a network structure, which relies on information exchange within the networks. Following the *regionalprinzip*, each member of the network operates in limited territory and does not branch in competition with other network members.<sup>10</sup> To prevent fraud and to market to new customers moving into their geographic area, members of the network rely on third-party information.<sup>11</sup> Similarly, branch restrictions in the insurance sector limit the ability of any one company from offering a comprehensive portfolio of products.

The Zentraler Kreditausschuss, which is the peak trade association for financial services, came out strongly against the legislation. Arguing that there was no evidence of private-sector abuse, the trade association echoed the liberal market economy American Bankers Association's argument that regulation should be limited to the public sector:

You must demonstrate to us—and here would have been the appropriate place—that according to the analysis of relationships in the private sector, as you see it, that a legal regulation is necessary. We find that missing. We have thoroughly read through all of the justifications and I would like to say something rather provocative: I appeal for a limitation of the regulation to the public sector. (Bundesministerium des Innern, 1972, p. 35)

The argumentation of the peak trade association for credit cooperatives underscores the importance of information asset distribution for firms working in a fragmented networked environment:

In order to fulfill their funding commitments, cooperatives have established regional and pan-regional offices. These offices coordinate collective efforts in areas where a single cooperative for business or financial reasons cannot accomplish the task. Similar changes have happened at the level of regional associations, which audit cooperatives and advise them. The cooperatives can only use their modern business cooperation to meet competitive challenges if they are permitted uninterrupted data flows within the cooperative economic network. After the Federal Data Protection Act, this will only be possible with extreme difficulty.<sup>12</sup>

The peak trade organization for insurance companies makes a similar claim, stressing the information needs caused by branching restrictions:

The Insurance industry is for many reasons tremendously dependent on the collection and processing of data. If the draft law were adopted as it currently stands, this collection and processing of data would become partially impossible and other efforts would become considerably more difficult.

Information about an individual is not only given to parties directly involved in the contract who also carry risk such as re-insurers or co-insurers. Data is also given to other insurance companies that work in partnership with a company that belong to a larger multi-enterprise corporation. The cooperation within corporations among many companies is particularly complex in the insurance industry given that a company is not permitted to be active in several branches simultaneously. (Bundesministerium des Innern, 1972, pp. 115-116)

A broad swath of representatives from financial services firms argued that regulation should not cover the private sector. This argument was based in the disruption that such policies would inflict on the network effects tendencies in the sector because of the relative distribution of information assets. This distribution was in turn the product of historical public policy decisions reached for various reasons but rarely intentionally directed to shape information assets. Interestingly, firms nearly succeeded in blocking the legislation but were foiled by last-minute parliamentary maneuvering by the liberal Free Democratic Party (FDP).<sup>13</sup>

Despite the fact that firms in the two countries are embedded within very different national institutional models of capitalism, financial services firms in the United States and Germany held remarkably similar position vis-à-vis private-sector data privacy regulation. Banks in both countries did not see a need for private-sector data protection legislation, feared the costs associated with burdensome, centralized regulation, and worried about the legislation's implications for networked information exchanges. As will become clear in the next two cases, these business models were not inherent to a sectoral logic. The high level of market fragmentation within both national economies produced significant demand for data exchange. The positions of credit reporting agencies, firms with limited product markets, and networked firms underscore the importance of low information asset accumulation. In such a network effects economy, data privacy rules threatened to limit the information available to participating firms. It is then not surprising that they opposed

central monitoring of data protection processes and instead, hoping to limit the power of state intervention, supported internal self-regulatory efforts.

### *From Silence to Support—A Different Tone in France and the United Kingdom*

*France.* In the early 1970s the French government initiated data privacy legislation to quell protests that arose to initial data bank projects. The most vocal opposition to government efforts surrounded a pilot project to centralize personal information given the unfortunate code name SAFARI (*système automatisé pour les fichiers administratifs et le répertoire des individus*). The project examined the usefulness of linking disparate national databases through an identification number to identify welfare fraud and criminality. In spring 1974 the newspaper *Le Monde* set off a national privacy debate with an article titled “SAFARI or the Hunt for the French.”<sup>14</sup> The perceived secrecy surrounding the project enraged the political elite, who saw the data bank as a potential power grab. To diffuse the political uproar, the administration of Giscard d’Estaing convened a national Commission on Data Processing and Freedom (known as the Tricot Commission) to examine the implications of computer technology for personal liberty. The final report of the commission advocated for the adoption of comprehensive rules for the public and private sectors and became the basis for initial French data privacy legislation (Tricot, 1975).

The organization of the French financial services industry around a few centralized financial institutions set up a very different political dynamic than in the United States or Germany (Moran, 1994). Financial services firms did not oppose the proposed legislation and played only a marginal role in political negotiations.<sup>15</sup> Those actively involved in the negotiations claimed that industry did not perceive the legislation as a threat to their business practices.<sup>16</sup> In contrast to in the United States and Germany, the five largest banks have a dominant position in the market, with roughly 50% of the industry’s holdings (see Table 2), and no independent, private credit reporting agencies existed.<sup>17</sup> Financial services firms did not need to exchange significant amounts of information because they had relatively large, national customer pools and access to a wide range of information over those customers.<sup>18</sup> Privacy rules did not fundamentally threaten the pattern of information flows within the industry. In fact, privacy rules that limited the transfer of personal information outside of company walls helped the main French firms protect their incumbent interests against possible new entrants. Given the government’s commitment to comprehensive rules and the lack of credible policy

alternatives (in contrast to the following case in the United Kingdom), French firms were never required to mobilize and fight for their policy preference. The final legislation, which encompassed the private sector, reinforced industry's position.

*The United Kingdom.* The United Kingdom was among the earliest countries to examine issues of data privacy. Starting in the early 1970s, the government set up a commission, known as the Younger Commission, to study the extent of the problem as well as possible solutions. This first study was then followed in 1978 by an additional report, which was produced by the Lindop Commission. Although concerned with the spread of data processing technology, these reports did not present a clear case for private-sector regulation. In fact, they offered the government a broad range of policy instruments to choose from, including limiting regulation to specific business sectors (Lindop, 1978; Younger, 1972).

Despite the fact that these expert studies did not call for immediate action in the private sector, a broad coalition for action emerged. In addition to the socially activist lawyers and civil rights advocates who pushed for legislation in other countries, a strong industry lobby supported privacy rules. The British Computer Society, for example, argued that the country needed strong rules regulating data privacy.

In addition to the information technology sector, financial services firms supported comprehensive rules at an early stage in the process. As the British Banking Association argued in comments to the Lindop committee,

The banks have always acknowledged their customers' rights to privacy and confidentiality; indeed, these are enshrined in normal banking practice. Therefore the banks fully support the basic concept of the need to protect personal information held in computer systems, as outlined in the White paper. . . .

Prima facie the banks would favour a properly constituted statutory body and are inclined to the view that the Authority should not be directly responsible to the head of a Government department and that the appeal procedure should be to the judiciary rather than to the executive arm of government.<sup>19</sup>

The comment strikes a very different tone from that of its German and U.S. counterparts, going so far as to acknowledge the usefulness of an independent regulatory agency for data privacy.<sup>20</sup>

The position is then reiterated by Charles Read, who served as the president of the Inter-Bank Research Organisation and as an advisor to Prime

Minister Thatcher on information technology issues during the period. In a letter to the prime minister, he argued,

We are unanimously of the opinion that credible data protection legislation is urgently required. It is a matter of great importance to this country for it is an essential element in the successful development and use of information technology. The lack of adequate data protection laws could well frustrate many of the measures which the Government is taking to stimulate and develop our national IT competence.<sup>21</sup>

This is not surprising given the centralized structure of financial services in the United Kingdom. The market is dominated by a few universal banks, which have extensive customer pools and dominant market positions (see Table 2). These banks found data privacy legislation as a natural complement to bank secrecy laws, which act as a barrier to new market entrants.<sup>22</sup> Furthermore, they saw data privacy laws as a means to enhance their international competitiveness vis-à-vis firms in other European countries.

The support of French and British financial services, then, offers a striking counterpart to the narrative offered in the United States and Germany. Contrary to a sector account, firms from the same industry held different preferences across countries. Similarly, the narratives challenge a varieties of capitalism account, which would predict similar preferences in the United States and the United Kingdom and different preferences between the United States and Germany. The French position, which was similar to that of the United Kingdom, demonstrates the continued weakness of current institutional arguments to explain outcomes in mixed cases such as France. The information asset argument, presented here, finds considerable support in the narrative. Firms in centralized information markets from France and the United Kingdom did not oppose data privacy rules, as such rules did not impinge on their fundamental business model. Incumbent firms in the United Kingdom actively called for such rules as they bolstered their market position.

## Conclusion

The international political economy has undergone a transformation, whereby information has joined labor and capital as a vital factor of production. Services, which are highly dependent on information, have already eclipsed manufactured goods as the primary drivers of the global economy with products such as software, pharmaceuticals, and financial services becoming critical growth areas (Wolfl, 2005).

This article examines the implications of this transformation for the political policy preferences of firms. If information is a core input for firms, this should have implications for how firms view economic policy. Drawing on findings from research on information economics, the article argues that firms that are information asset rich will oppose policies that increase information access and distribution as such policies undermine their information advantage. Firms in fragmented information markets, by contrast, will promote such policies as they help companies overcome shared information asymmetries. Because of the malleable nature of information, the market logic is derived from historical decisions concerning broader public policy feedbacks that institutionally embed the distribution of information assets over time.

To test the information asset argument, this article examines business preferences vis-à-vis data privacy laws adopted during the 1970s and 1980s in the United States, Germany, France, and the United Kingdom. Contrary to causal variables developed for the industrial era, which stress a single logic of economic sectors or the institutional determinants of business preferences, neither the sector nor the national variety of capitalism explains variation in privacy policies. In the United States and Germany, financial services firms formed the core opposition to private-sector regulation. In France and the United Kingdom, these same companies accepted such rules or in the British case were part of the coalition that pressed for reform. In all of the cases, public policy decisions shaping industry development—the ability to construct a universal financial services firm in a national market versus branching and business restrictions—influenced the need for information exchange. The findings, then, challenge a standard national model of capitalism approach, calling for a reexamination of the “core” institutions in a services-based economy. Similarly, the case of data privacy suggests how material preferences of information-intensive firms may in fact be intertwined with the public policy process and business–government relations (Woll, 2008).

Although the article offers a first test of the information asset argument, it is naturally limited by the fact that the cases deal with one issue area. Future work should examine how the argument travels to other core information economy debates such as intellectual property, retail credit markets, content rules, and infrastructure regulation. Both the United States and the European Union have enacted major intellectual property rights reforms over the past two decades, which could provide further evidence in support of the information asset argument. A cursory examination of the politics behind the reform in the United States, the Digital Millennium Copyright Act (DMCA), seems to support the claim presented in the article. The DMCA significantly

expanded copyright protection, both extending its application to digital networks and criminalizing efforts to breach encryption software. Companies with large information warehouses of copyrighted material, such as Disney and BMG Music, were the strongest advocates of the law, as the information asset argument would predict. Companies that profited from the growth of the network and data exchange, such as network infrastructure producer Cisco Systems, vocally opposed the legislation (Bach, 2004). More recently, the antitrust case against Microsoft and legal action against Apple in Europe demonstrate the usefulness of an information asset argument. In its case against Microsoft, the European Commission used antitrust law to force Microsoft to reveal source code for its servers, targeting the company's oligopolistic information advantage. In a parallel move, governments in Scandinavia, France, and Germany have moved against Apple's iTunes Store. Currently, music purchased on the iTunes Store may be played only on Apple hardware. In transforming digital music into a private good, Apple undermines the attractiveness of rival equipment makers such as Siemens or Nokia.<sup>23</sup> These examples suggest that the information asset argument may shed light on confusing cases of intra- and interindustry preference variation, which frequently confound models based on strict national or sectoral differences.

Future work will be needed to explore the key dimensions and boundary conditions of an information-based argument concerning firm preferences. For much of the 20th century, for example, a considerable amount of information remained in tacit form. This made specific firms and even more so individuals within those firms who held tacit knowledge central to information acquisition. As more and more knowledge can be codified (particularly in digital form), the locus of power might shift to those actors who control choke points over the distribution of such information. Similarly, it will be important to break apart the political fights as they occur on different levels of information production and usage. Firms focusing on infrastructure, content provision, or personal data management might often find their policy preferences running at cross-purposes (Zysman & Kushida, 2009). Research will thus need to move beyond abstract discussions of information to more refined and specific operationalizations of the broader concept.

The information asset argument contributes to a growing literature that seeks to understand the political economy of a services economy (Esping-Andersen, 1999; Iversen & Wren, 1998; Sell, 2003; Weber, 2004; Woll, 2008). Much of the pathbreaking political economy research in the postwar era drew on the empirical questions of industrialization. Initial studies examined the politics of catch-up, using chemicals, steel, and automobiles as their empirical base. Arguments, then, focused on the ability of societies to

mobilize large financial resources to develop industries with large physical plants and corresponding start-up costs. Although industrial production persists, the prominence of services in advanced industrial economies has reshuffled the demands firms face, the skills workers need, and the collective goods that governments provide. In developing a historically sensitive causal model for the policy preference of information-intensive firms, this article hopes to shed light on the drivers of political coalitions as the inputs of capitalism shift.

## Notes

1. See John Oates, "France and Germany Join Anti-itunes Crusade," *The Register*, January 23, 2007.
2. Several notable exceptions include Sell (2003), Weber (2004), Farrell (2006), Esping-Andersen (1999), and Iversen and Wren (1998).
3. A separate but related literature examines firm influence in the political arena. This similarly draws on material and institutional claims.
4. For the importance of historical processes in causal explanations, see Pierson (1996, 2004)
5. Pagano and Jappelli (1993) have argued, "Once some banks agree to share information, there are increasing returns to the scale of information sharing: the credit bureau is a natural monopoly" (p. 1694).
6. These norms were codified in a set of Organisation for Economic Co-operation and Development (OECD) guidelines (see OECD, 1980).
7. The earliest comparable cross-national data for the four countries are from 1990 (see OECD, 2001). As significant periods of financial deregulation occurred after this period, I do not expect that these figures overrepresent levels of concentration. They are also in line with national studies that report on earlier levels of bank sector concentration.
8. The American Bankers Association argued,

It seems to us likely, on the other hand, that an effort to solve the problems of both public and private data banks in one bill might well result in such controversy and confusion as to make it more difficult to bring about enactment of any legislation in this field during the present Congress. (U.S. Senate, 1974, p. 525)

9. For a synopsis of the hearing's results, see *Die Welt*, "Benutzung Von Datenbanken Darf Privatsphaere Nicht Gefahrden," November 8, 1972.
10. For a description of the *regionalprinzip*, see Coleman (1996).
11. Schutzgemeinschaft fuer Absatzfinanzierung und Kreditsicherung (SCHUFA), which was established in 1927, acts as a credit clearing house for German Banks.

The SCHUFA is a collective, which aggregates credit data from member banks. The need for the SCHUFA demonstrates banks' inability to independently cover their information needs. For a description of the organization and its function within the financial services sector, see SCHUFA (2002). SCHUFA lobbied heavily against binding private-sector rules: "The current draft before the committee of the interior so constrains necessary information possibilities that it might make preventative credit protection impossible and will considerably constrain the fight against economic criminality" (SCHUFA, letter to die Mitglieder des Innenausschusses des Ausschusses für Wirtschaft und des Rechtsausschusses des Deutschen Bundestages, March 8, 1976, Wiesbaden, on archive with the author).

12. See Deutscher Genossenschafts und Raiffeisenverband, letter to den Vorsitzenden des Innenausschusses des Deutschen Bundestags, March 19, 1974, Bonn, on archive with the author.
13. See Das Parlament, "Schutz Des Buergers Vor Dem Computer," November 27, 1976.
14. See Philippe Boucher, "SAFARI Ou La Chase Aux Francais," *Le Monde*, March 21, 1974.
15. Interview with a member of the French Data Protection Authority (CNIL).
16. Interview with a French data privacy expert working in the financial services sector.
17. The credit reporting system in France is explained by members of CNIL (Passemaid & Giro, 2002).
18. Interview with French data protection banking official.
19. See British Banking Association comment, Lindop Report, October 1976.
20. Many scholars have argued that industry support of data protection legislation in the United Kingdom stemmed from international coercion (see, e.g., C. Bennett, 1992). In 1981, the Council of Europe signed a Convention on Data Protection. It limited the transfer of data to countries that had not adopted the convention. Although the convention played an important role in the final passage of U.K. legislation, banks had a favorable stance toward such rules long before the convention came into force.
21. See Charles Reed, letter to Prime Minister Thatcher, January 22, 1982, on archive with the author, to which Thatcher responded: "I fully agree with you that legislation is needed, for the reasons given in your letter, and we intend to bring it forward as quickly as possible." Margaret Thatcher, letter to Charles Reed, February 11, 1982, on archive with the author.
22. Interview with British bank representative.
23. See Oates, "France and Germany."

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### Bio

**Abraham L. Newman** is an assistant professor at the Edmund Walsh School of Foreign Service at Georgetown University. He is the author of *Protectors of Privacy: Regulating Personal Data in the Global Economy* and coeditor of *How Revolutionary Was the Digital Revolution: National Responses, Market Transitions, and Global Technology*. His work has appeared in *Governance*, *International Organization*, and *Journal of European Public Policy*.