Introduction

While we were writing this book, one of the authors fell ill. The diagnosis required two CAT scans, two MRIs, consultation with an otoneurologist, an otolaryngologist, and an audiologist, while the treatment required a week in the hospital, a total of fifteen hours of surgery carried out by a team of highly skilled neurosurgeons and an anesthesiologist, with several nurses on hand. Another six weeks of recovery involved physical therapy and multiple checkups. A back-of-the-envelope calculation suggests that the whole episode cost in excess of US$250,000, all of which was paid by a private insurance company, Blue Cross Blue Shield, via a standard employer-sponsored insurance plan. Nothing presaged this ordeal: no family history, no risky behavior – it was a bolt from the blue.

An episode like this would have cost many uninsured American workers their lifesavings, their house, and perhaps their job. But, while the cost to an uninsured individual of an adverse event such as this is potentially catastrophic, the cost to others in the insurance pool is very small: less than one cent, assuming the cost is spread evenly across all policyholders. That's the point of insurance: the lucky subsidize the unlucky. While private health insurance in America is not cheap, the payout, when it is needed, can be huge and sometimes literally lifesaving. For the same reason, insurers have a strong incentive to shun bad risks, and so do people who believe they are at low risk.

The previously mentioned event would have been impossible to predict ex ante, but information often allows those in bad health to buy good plans, which drives up prices and pushes out good risks and that, in turn, increases prices even further in a spiraling logic. In the insurance literature, this is called adverse selection. Adverse selection is not the only
reason insurance markets break down, but it is an important one and it helps explain why, inter alia, medical insurance in most rich democracies is public. Even in the USA, the elderly are covered by a public plan, Medicare, which would be exceedingly expensive if offered as a private plan. Private health insurance mostly covers non-extreme risks among the nonpoor and non-elderly population. Provided that people and insurers are not well-informed about risks, further segmentation is less likely. Yet, for much of the past three decades, we have seen growing risk segmentation, constrained by regulations that limit discrimination. More information about risks tends to cause fragmentation and political polarization between those at low and those at high risk.

This book is about the political tug-of-war between segmentation and integration, with more and better information favoring risk differentiation and segmentation, and democratic politics historically driving risk pooling and integration. We seek to deepen our understanding of the forces that integrate versus those that segregate and how this balance has shifted over time.

All forms of insurance are affected by incomplete information, and changes in the quantity, quality, or shareability of information can transform insurance. We want to understand how the information revolution influences social insurance. With this in mind, our book asks what happens to the politics of social protection, and to inequality, when information about risks to health, employment, credit, life, and so on becomes more widely available, more accurate, and more shareable. We find that more information tends to result in the fragmentation of insurance pools, increases inequality of access to and coverage of social insurance and credit, and intensifies polarization of welfare state preferences.

To appreciate the powerful impact that more, better, and increasingly shareable information has on insurance, we only need to look at the automobile insurance industry. Since its introduction about a century ago, car insurance has suffered from a widely acknowledged (asymmetric) information problem. To be able to charge actuarially fair prices, insurance companies need to tie premiums to driving behavior, yet driving behavior cannot be directly observed.¹ Therefore, companies traditionally

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¹ When an insurance company cannot distinguish between good and bad risks, it must charge similar premiums for everyone. But these premiums are “too high” for good risks, and this leads to adverse selection: with these relatively high premiums, insurance is only attractive to bad drivers, leaving the company with only high-risk customers. For insurance markets to survive, however, good and bad risks have to be pooled. In car insurance
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rely on static, auxiliary information to assess a customer’s probability of causing an accident. Traditional risk classification in the car industry groups customers into broad risk classes, based on their age, gender, driving history, occupation, place of residency, car model, and the like.

However, a few years ago, car insurance companies started to offer so-called pay-how-you-drive (PHYD) policies that directly link a customer’s premium to their driving behavior. These insurance policies were rolled out once it became possible to cheaply observe and accurately report individual driving behavior through GPS-enabled devices (including apps on cell phones). These trackers can record and transmit—in real time—information that has actuarial relevance for the insurer. Examples include distance driven, time of day, absolute and relative speed (relative to speed limits), acceleration, braking events and their harshness, swerving, cornering forces, and so on.

The ability to objectively track behavior at the microlevel (“micro-tracking”) alleviates the widely recognized problem of asymmetric information that hampers insurance markets. PHYD policies that tie insurance rates to individual driving behavior are attractive for insurance companies because they allow them to use fine-grained classifications of their customers’ risks. PHYD products are actuarially more accurate, connecting a driver’s probability of causing an accident more closely to the insurance premium they have to pay. This is why PHYD insurance appeals to safe drivers (“good risks”)—the type of customer insurance companies are particularly keen to sign up.

Micro-tracking has sparked a major transformation of the automobile insurance industry. It does not take much imagination to predict that soon, most car insurance policies will be of the PHYD kind. Once in place, these policies attract safe drivers. This leaves traditional car insurance products with a worse risk pool, which, in turn, makes it necessary to increase premiums. This then incentivizes even more safe drivers to select PHYD insurance and so on. This spiral only ends once everybody is covered by a PHYD product. One result of micro-tracking, therefore, is that good risks pay less, while bad risks pay more. This seems only fair, and it may even lead to more careful driving!

But more, better, and more shareable information can fundamentally change personal insurance as well, and we, along with many other observers, are concerned about the potential consequences for equality and markets, this is typically achieved by governments making car insurance mandatory for everybody.
coverage. Personal insurance includes life insurance and credit markets, but it also includes social policy programs – accident insurance, unemployment insurance, health insurance, long-term care insurance, and old-age insurance – which are mostly run by the government. Collectively, these programs are known as “social insurance,” or “the welfare state.”

Like all insurance, these programs are affected by asymmetric information problems. Governments can avoid adverse selection by compelling (i.e., forcing) every citizen to be part of the insurance program. Moreover, premiums are tied to income (which governments can observe), not risk profiles (which governments traditionally cannot observe). This is then the basic structure of a typical social insurance program: all citizens are part of the risk pool, and contribution rates are based on income, either through general taxation or through social contributions. These programs are highly solidaristic because good risks subsidize bad risks and because high-income individuals pay more than those with low incomes for the same insurance. The lucky (often termed “socially strong”) support the unlucky (“socially weak”): the healthy support the sick; the employed support the unemployed; the rich support the poor; the young support the old; and so on.

This solidaristic government solution, which dominated during the Golden Age of the first three post-WWII decades, is increasingly coming under pressure because of the information revolution. This is clearly illustrated by the car insurance case, but perhaps an even more instructive case is the life insurance market, where, much like in the car insurance industry, information and communication technology (ICT) is radically transforming the status quo. For example, John Hancock Life Insurance, a major player in the American market, has introduced a policy that calculates annual premiums partially based on data collected by an “activity tracker,” which policyholders receive for free when they sign up. These types of devices can track and instantly share (via an app) things like steps and stairs taken, active minutes, calories burned, heart rate, sleep quality, and blood pressure. One of the company’s sales pitches for this life insurance policy was that it would allow customers “to save money and earn valuable rewards by simply living a healthy life. In fact, the healthier you are, the more you can save.”

It would be logical for health insurers to do the same – and when they can, they do (as is the case with many

supplementary private insurance plans). Today, public plans and nondiscrimination clauses, not lack of information, are what stands between integration and segmentation.

It is not just private insurance companies getting in on the action. The leading technology companies—Apple, Alphabet, Amazon, Microsoft, and so on—are all committing huge resources to the development of a new data-based health industry, where, inter alia, doctors can interact with artificial intelligence (AI) enabled databases, and individuals can easily share their information with insurance companies. Similar efforts are underway in credit markets, where detailed information about credit history is linked to a trove of data on income, occupation, residence, and so on.

There is currently no integrated analytical framework we can use to examine the consequences of Big Data for social policy and inequality. This book offers such a framework and applies it to the history of social protection, with an emphasis on the rise of the knowledge economy and taking the role of partisanship and national political and regulatory institutions into account.

**The Logic: Division of Insurance Pools**

One of the most important drivers of redistribution and equality is large-scale risk pooling. When every worker pays into the same unemployment scheme and receives a benefit that is independent of their income, that scheme is highly redistributive provided that risks are not positively related to income. Typically, the opposite applies. The same is true for health insurance, life insurance, old-age insurance, and access to credit (when rates are not fully tied to underlying risks). Redistribution is usually thought of as politically contentious, but this need not be the case if people are uncertain how much risk they are exposed to. And even if risks are known, those with medium and high risks may force low-risk groups into a national pool under democratic rules. In this instance, social insurance does become politically contentious, with disagreement between low- and high-risk groups in terms of both the public character of insurance and the preferred level of insurance (albeit conditioned by the fact that insurance is usually a “normal good” — that is, demand increases with income).

**Information and Social Insurance**

Polarization is intensified when there are private alternatives to public provision, which can offer better insurance at lower prices for those at low
risk. For private markets to be feasible, however, insurers need to be able to distinguish between good and bad risks. Otherwise, they will attract high-risk types, who drive up insurance premiums and push low-risk types out of the pool. The result of such “adverse selection” is the eventual breakdown of insurance markets, or the emergence of what Akerlof (1970) called a market for lemons (where the “lemons” are a metaphor, borrowed from the used car market, for bad risks). Such breakdowns can increase support for public insurance if people are also ignorant about their risks. On the other hand, they may in fact increase polarization over insurance spending if individuals are well-informed about their risks (while insurers are not).

Incomplete information is thus at the heart of the welfare state, and polarization will be a function of the level and distribution of information. Information is also at the heart of this book, although we will also engage with complementary arguments about political power and democratic institutions.

The early development of the welfare state took place during a time of franchise expansion, as (minor) insurance markets and mutual aid societies (MASs) retreated. Market failure itself did not bring about the welfare state, however; it emerged as the result of an expanding industrial working and middle class using the democratic state to force good risks into a national (and highly redistributive) insurance pool. Scholars of the early welfare state are right to emphasize the importance of power resources and partisanship in leveraging the coercive powers of the state (Bradley et al. 2003; Korpi 1983; Stephens 1979), but in the process, market failures were also overcome, which increased average welfare and often facilitated economic development (Iversen and Stephens 2008).

This logic has since been reversed. Because today’s insurers have much better data enabling them to draw a distinction between good and bad risks, the middle class now has a new institutional incentive to exclude bad risks by privatizing those risks or by differentiating public insurance. This process, whereby large national insurance pools are parsed into smaller ones with more differentiation in contributions and benefits, is called segmentation.

Another early limitation of markets and MASs was their incapacity to solve time-inconsistency problems. These problems arose because industrialization and urbanization created immediate and urgent needs that could only be addressed by transferring resources from young, healthier, and more employable workers to older, sicker, and less employable ones. This required the institutional capacity to commit future generations to
support current generations as they aged. Markets were unable to solve this distributive problem, but the democratic state managed to do so with the help of programmatic parties built on internal intergenerational bargains (Aldrich 1995; Soskice, Bates, and Epstein 1992). The result was credible commitment by governments to pay-as-you-go (PAYG) social policy expansion.

Over time, however, markets have gradually overcome this problem, at least in the areas of pensions and life insurance, by offering “funded” plans that avoid intergenerational transfers. Funded pension systems are part of broader financialization of modern economies where access to credit, and the terms of such access, has become an important determinant of welfare and inequality. People increasingly move between work and family and between work and education, and credit markets are used by more and more people to smooth these “nonlinear” career paths. This expansion of the welfare functions of credit markets once again puts information front and center because such information determines the capacity of lenders to estimate default risks and therefore who can borrow and at what cost.

That said, time-inconsistency problems do still persist in important areas of the welfare state, notably health insurance for the elderly. Because bad health is concentrated among the old, insurance against these risks requires contributions from the young and healthy. But private insurance is ill-equipped to solve this intergenerational transfer problem because insurers cannot credibly commit to future insurance for the young people who pay into the system to cover the current population in ill-health (mostly in old age). Health insurance for the old is therefore almost without exception provided by the state, even in a “liberal” welfare state like America’s, where Medicare covers the elderly. Fully “funded” private healthcare accounts are not out of the question, and Germany has seen the emergence of individual health savings plans (“Alterungsrückstellung” in the private primary health insurance market), but it has proven to be one of the hardest for markets to solve.

A closely related problem that markets never manage to solve is insurance against poverty. Much poverty is not transitory, and it thus requires continuous transfers from the nonpoor. To cover the risk of poverty by insurance, therefore, requires a credible commitment to the nonpoor that they too would be covered in the future, in the event they become poor. Private insurers generally cannot offer such a credible commitment, and it therefore falls to the government to create antipoverty programs with the political support of the nonpoor who themselves fear poverty. It is the
capacity of the state to compel payments (through taxes) combined with long-standing political parties that open up the possibility of government transfers to the poor. Medicaid, to return to the US case of an otherwise large private health insurance system, is health insurance for the poor, which enjoys broad support among the nonpoor. Nonpoor requiring long-term care, for example, often have to spend down their savings.

Despite these important exceptions, increased information tends to fragment and polarize people’s views on public insurance. At the birth of the modern welfare state, workers faced myriad risks – unemployment, illness, old-age insecurity, and so on – which were ill-understood and therefore a concern for most. In this low-information environment, risks were conducive to broad cross-class solidarity, as well as broad support for universal benefits. But by the same token, as information about risks has become more plentiful, public support for spending has diverged by class.

Simplifying greatly and ignoring many of the qualifications we discuss in subsequent chapters, the modern welfare state emerged in the first half of the previous century under democratic rules in a period of unprecedented upheaval and uncertainty. A majority wanted the state to assume responsibility where private alternatives (including MASs) had failed because of incomplete and asymmetric information. Higher-end groups, who knew they faced lower risks and could expect to assume a disproportionate share of the cost, opposed such welfare state expansion, but they were in a minority. Among the vast majority of the population, there was widespread consensus in support of the public system of social insurance.

With the ICT revolution, however, information has increasingly divided public opinion on many social insurance issues. Using Rawls’s (1971) “veil of ignorance” metaphor, the data revolution has raised the veil and allowed people to see more clearly whether they are likely to lose or gain from public insurance. Many middle- and upper-middle-class constituencies have concluded that private insurance can be a superior option, at least as a supplement to public insurance (Busemeyer and Iversen 2020; Gingrich 2011). The result is the segmentation of social insurance with more choices within – and ways of opting out of – the public system and with private alternatives increasingly reducing the public system to a bare-bones insurance. In Denmark, a quintessential “social democratic” welfare state with a celebrated public healthcare system, nearly 2.2 million private-sector employees (in a country of 5.8 million people) are now covered by employer-provided private insurance, which complements
the public system, especially for upscale professionals in areas where the public system is seen as inadequate (Hørkilde 2020). Another individual private top-up plan available in Denmark is based on documented good health, which is a common feature of upper tiers in many European countries. A parallel trend to the expanding use of supplementary private plans is a greater choice over providers and treatments in the public system. Such choice is strongly supported among the middle classes across Europe (Costa-Font and Zigante 2016).

One important qualification to the claim that information is having a polarizing effect is what is known in the welfare state literature as the “double-payment problem.” Where private insurance is a substitute for insurance provided by the public system, people who opt into private alternatives must pay for their own insurance while still paying into the public system. This is an obvious deterrent against opting out, and if purchasing private insurance is not a feasible option, those who demand the best quality insurance – typically those with high incomes and education – may push for improvements in the public system. Although their “first-best” preference may be for a private system, or at least a public system that allows supplementary private insurance, their “constrained preference” may be to pour more resources into the public system. In other words, support for public insurance systems may be high even among the rich and healthy if they cannot opt out of the system. Of course, this means that the conditions for opting out – do you get a tax credit; can you still use the public system; and does the private insurance substitute or complement public offerings – become politically salient issues.

In general, when there is a double-payment issue, the individual choice to opt out of the public system depends on what others do, which can be modeled as a game of strategic complementarities, or a network game: as more opt out, the private option will become more attractive because the double-payment problem is attenuated (Busemeyer and Iversen 2014). Using this logic, we discuss in Chapter 2 how, for each (nonpoor) potential insurance holder, there is a critical threshold of participation in the private scheme that will make private insurance sufficiently attractive for the individual to opt out. In such a game, there can be multiple equilibria. Therefore, preferences can converge around, say, a predominantly public system even if, for some, the “first-best” option is a private system.

A second qualification is that information cannot solve all forms of market failure. As we noted previously, there is no private insurance against poverty, and private insurers struggle to insure against risks that are heavily concentrated at the end of life. Medicare (targeting those over
the age of sixty-five) and Medicaid (targeting the poor) are popular in an otherwise predominantly private healthcare system. In addition, some risks are correlated across individuals, which violate actuarially sound insurance principles. Unemployment, which is subject to macroeconomic shocks, is an example. This does not rule out private providers, but it does require the state to be an “insurer of last resort,” which itself leads to problems of moral hazard. For these reasons, the transition to a private system is by no means a foregone conclusion in a high-information environment. Yet privatization and public sector marketization enter the political debate in a way not seen in a low-information environment.

METHODS AND EVIDENCE

A study of the consequences of more and better information about individual risks faces the obvious problem that most of such information is private and protected by privacy policies. Even when information is shared with insurers and credit institutions, it is not available to researchers. The same is true of the algorithms used by private companies to analyze risks (with a few rare exceptions). For the most part, therefore, we have to rely on indirect evidence, and for this purpose, we mix analytical history, case studies, statistical analysis, and quasi-experimental methods. For example, while we cannot access the individual health records that private insurers use to determine eligibility and pricing for life insurance, we can obtain data on the availability of reliable diagnostic tests, which are rising exponentially, and we can acquire increasingly detailed data on life expectancy for each diagnosed disease. This should correlate with the data insurers are using and help explain market formation.

The historical analysis traces the shift from MASs to the rise of the solidaristic welfare state to the emergence of private markets and increasingly contested public programs. MASs were the private precursors of the welfare state, but they faced the same problems as private insurance companies because they could not effectively distinguish between good and bad risks, and any attempt to expand coverage and generosity caused many of the most prized members to leave. There is rich scholarship documenting the constraints on the scope, and ultimate demise, of MASs, which also helps us understand the conditions not only for public provision but also for the emergence of private markets. Our main focus is on the contemporary period, however, where we examine how technology, insurance, and financial companies are using data to enable and