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## **Profiling, Auditing and Public Policy: Applications in Labor and Health Economics**

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## Conclusions

This thesis contains three studies on access to public programs and publicly funded services. The first part of this thesis focused on the identification of individuals who are likely to be in need of public programs or services (e.g., job search assistance programs), based on expected outcomes without assistance. In the second part of this thesis the design of audit policies has been examined. In particular, the effect of various auditing instruments on claims filed for the use of publicly financed long-term care services has been studied. This final chapter summarizes the main conclusions of each of the chapters.

Financial resources for public programs and services are limited, so that policy makers are required to think about allocation and targeting of these policies. Targeting can help to direct services specifically to those individuals who are most likely to benefit from them. However, it also requires the identification of individuals who are likely to be in need of certain services or are expected to benefit from them. Chapter 2 developed a new profiling method for the identification of individuals at risk of remaining in a certain (disadvantaged) state for a relatively long period of time when no assistance would be provided. Public programs or services could then be assigned to those individuals expected to have bad outcomes without assistance. The profiling method relies on the idea that individuals who are comparable in terms of certain personal characteristics are also likely to have similar outcomes. The proposed profiling method weighs observed individual outcomes (e.g., unemployment duration) to construct predictions of this outcome for another set of individuals. The weights capture how comparable individuals, for whom the outcome is already observed, are to the individual for whom a prediction has to be made. Comparability

is defined in terms of a set of personal characteristics. These weights are then used to construct a weighted survivor function prediction that gives, at each possible duration, the probability that a particular individual is still in a state of interest (e.g., unemployed).

Chapter 2 compared the weighted survivor function prediction to predictions obtained from two benchmark profiling methods that are currently used in practice. For this comparison, both a simulation study as well as an empirical application have been exploited. The results from the simulation study show that the prediction quality of the weighted survivor prediction method is somewhat better than the prediction quality of the benchmark models in most of the considered scenarios, but deviations are typically small. The empirical application illustrates that the weighted survivor prediction method does not yield significantly better predictions than alternative profiling methods. A useful next step would be to study the optimal specification of the weights to see whether further improvements in prediction quality are possible.

When allocation decisions have been made, monitoring and auditing policies can help to provide public programs and services to eligible individuals only. In the second part of this thesis the design of audit policies and the effect of these audit policies on claims for the use of public services has been studied. This was investigated empirically by means of a large-scale field experiment in the Dutch market for long-term care (i.e., chronic care for the elderly, the mentally and/or physically handicapped and chronic psychiatric patients). In the Netherlands, a gatekeeper, which is an institution responsible for managing access to long-term care services, audits applications for the provision of these services. Applications are typically filed by long-term care providers that are contacted by patients who want to receive long-term care services. The gatekeeper makes a so-called assessment of needs, stating, amongst others, the type and amount of care services for which the individual is eligible. The construction of such an assessment of needs may be preceded by an audit. In case of an audit specialized assessors employed by the gatekeeper make an objective assessment of the care needs of the patient and compare the actual care needs to the long-term care services that have been requested by the care provider. In the design of audit policies, in particular in choosing the frequency of auditing and the extent to which an audit has consequences for care provision, the size of the auditing budget, the possibility for quick provision when needed, and incentives for care providers to file applications correctly play an important role.

In Chapter 3 the causal effect of the audit rate (i.e., the probability that an application is selected for audit) on application behavior of care providers has been

examined. This has been studied for applications for immediate (home and nursing) care, i.e., care that is typically quickly needed. This need for quick provision made the gatekeeper introduce ex-post auditing. In case of ex-post auditing, possibilities for adjustment and/or repayment when requested care services turn out to deviate from actual care needs, are absent. The results in Chapter 3 indicate that both a low and a high audit rate regime do not result in differences in the number of applications for immediate care compared to a regime with an intermediate audit rate. Moreover, neither of these two regimes changes the audit approval rate (i.e., the fraction of applications for which an audit shows that requested care needs coincide with actual care needs). A conditional regime, with care provider-specific audit rate updates during the experiment based on observed recent approval rates, also does not influence the number or quality of applications. A potential explanation for these results could be the lack of direct (financial) sanctions in case of ex-post auditing.

The role of ex-post auditing has been the focus of Chapter 4, in which the causal effect of the degree of control by the gatekeeper on application behavior of care providers has been investigated. Differences in the degree of control were implemented in the field experiment through variation in the timing of audit and the presence of performance incentives. In particular, the timing of an audit could be ex-ante (before the start of care provision) or, as in Chapter 3, ex-post (after the start of care provision). With ex-ante auditing the gatekeeper makes the final decision on the care services that can be provided to the patient. This large amount of control comes at the cost of delay in provision. Ex-post auditing allows for immediate provision of care services, but has the risk of inefficiency in spending.

The results show that increasing the degree of control (the ex-ante compared to the ex-post audit regime) reduces the number of applications by 10%, although the estimated effect is insignificant. A more substantial and significant reduction of 20% is found for the conditional audit regime as compared to the ex-post regime. In this conditional audit regime, control (ex-ante auditing) was targeted towards care providers with low recent approval rates. A large part of the decline in the number of applications could be explained by substitution between types of applications. Furthermore, negative effects of both the ex-ante and the conditional audit regime on the quality of applications are found. This could be partly attributed to differences in the way assessors valued ex-post audits compared to ex-ante audits. The conditional audit regime is to be preferred when merely focusing on long-term care expenditures, because of fewer delays, a reduction in the number of applications and a shift towards other application types typically associated with less extensive care. Nonetheless,

targeting efficiency and availability of care services to patients truly in need of those services is important in the design of audit policies as well.