1. Research Purpose and Design

The Republic of Macedonia is undertaking sweeping reforms of its health sector.[1] Under a World Bank credit, the Macedonian government is implementing the Health Sector Transition Project (HSTP). The HSTP is a comprehensive reform program that seeks to improve the efficiency and quality of care by significantly strengthening the role of the market in health care provision. One of the key HSTP proposals, a new productivity-based payment system for primary care physicians, will effectively privatize all primary health care (PHC) provision. The design of the new payment system is still being debated and is scheduled for implementation early in the 2000s. In addition, the Ministry of Health is considering the sale of public PHC clinics to private groups, indicating the government's commitment to marketization of health care provision.

Macedonia is in a unique position to develop policies for a new private sector in health care provision. The private provision of outpatient care was legalized soon after independence in 1991. However, the restriction to outpatient care and administrative barriers to entry have restricted the private sector so that today private physicians account for less than 10% of all physicians. If the reforms are fully realized, all PHC physicians – over 40% of all physicians – will be financially responsible for their clinical practices.

This dissertation draws on the experience with the partial privatization 1991-1997 and offers significant lessons for the ongoing reforms. I seek to inform the reform debates on two levels. At a sectoral level I evaluate the policy environment that governs the private sector, both currently and that proposed by the reform program. This component of the research addresses how the reform program can structure policies that adequately support and regulate a private health market in a transition economy. At the level of individual physicians, this dissertation examines the performance of physicians under the existing private/public system, specifically the effect of payment incentives on physicians' decisions in treating patients. By evaluating factors influencing physician productivity and resource utilization this will provide input to the design of physician incentive and payment systems.

---

[1] The current UN designation is The Former Yugoslav Republic of Macedonia; I use the Republic of Macedonia and Macedonia throughout this study.

This prospectus continues with an overview of health sector reforms in Central and Eastern Europe (CEE) and highlights key features of the Macedonian health care system. It concludes by summarizing relevant policy issues and the research plan for this dissertation.

BACKGROUND

The term privatization is subject to ambiguity and interpretation, especially in post-socialist contexts. So, before proceeding, a definitional task: When used in developed market economies, privatization typically denotes the transfer of public assets to private ownership. In CEE by contrast, the term has been used variously to describe limited introductions of market forces in particular industries to the total transformation of formerly planned economies. In public service provision, it has been used to denote contracting of limited services or introducing competition between government agencies (Mills, 1998; Saltman and Figueras, 1997; Vickers and Yarrow, 1991). In reference to industrial restructuring, privatization has been used to identify administrative methods of transferring state assets to private hands (Pohl et al., 1997; Brada, 1996; Bohm and Simoneti, 1993).

These techniques are means toward the ultimate objective of privatization in CEE – to establish a market economy. Most observers agree that the sale of state assets to private parties is not sufficient to develop a market economy (Gray, 1996). Moreover, focusing all political efforts on the relative simple task of transferring ownership rights from the state to private hands detracts from the hard task of developing market institutions (Murrel, 1992). Following several authors I adopt a broad process definition of privatization, meaning the development of private markets with the explicit goal of restructuring a planned economy into a market economy; including, but not limited to, the transfer of property rights (eg., Clague et al., 1997; Murrel, 1996; Gray, 1996).[2] With respect to the existing public health sector in Macedonia this includes: developing policies that effectively regulate private markets; shifting decision-making and financial responsibility to service providers; and, establishing incentives for efficient resource utilization and higher quality of care.

---

[2] Privatization in CEE is treated as a general, contextual case in this study. Health care privatization is the specific case in which there are a number of intrinsic features that preclude the formation of a pure "market economy" in health care provision in any nation.

CEE Health Reforms

A centerpiece of health sector reforms across Central and Eastern Europe (CEE) is the promotion of private sector health care delivery (World Bank, 1993). These reforms are set in the context of broader economic and political reforms throughout many post-socialist transition economies. Privatization seeks to raise the efficiency and quality of health care systems by liberalizing demand, diversifying supply, and improving demand- and supply-side incentives (Preker and Feachem, 1995; Saltman and Figueras, 1997).

Despite this promise, there are many critics of private care in developing and transitioning countries (Saltman and Figueras, 1997; Bennet et al., 1994; Cichon, 1991; Roemer, 1984). Economies in transition face similar demands for government intervention as any country due to the same limitations of private health care provision: barriers to entry, asymmetric information, limited provision of public goods, and other problems stemming from the profit motive such as induced demand.

CEE health systems have inherited a host of other problems from the communist period. These include populations suffering poor health status, doctors who are over-specialized and under-employed, clinics that are undercapitalized and inefficient, and opaque financing systems that are open to corruption (Borissov and Rathwell, 1996; Preker and Feachem, 1995; Mills and Lee, 1993; McKee, 1991). Drops in real income and public funding for health accompanying the economic transition have stagnated or worsened these problems. For example, prior to 1991 many CEE countries had national insurance systems which for many years ran large deficits. Decreases in available funds during transition have pushed these insurance programs further into deficit. Capital spending has also declined or stopped altogether and conditions in public hospitals and health clinics have deteriorated due to a lack of investment funds during transition. Furthermore, affordable and cost-effective primary care has been further weakened by the common CEE emphasis on specialty care. Where private provision does exist, it has been fueled less by policies designed to decrease public spending than by nascent demand created by dissatisfaction with poor quality services of publicly provided clinical care (Orosz, 1995; Griffin, 1989).

Macedonian Health Sector

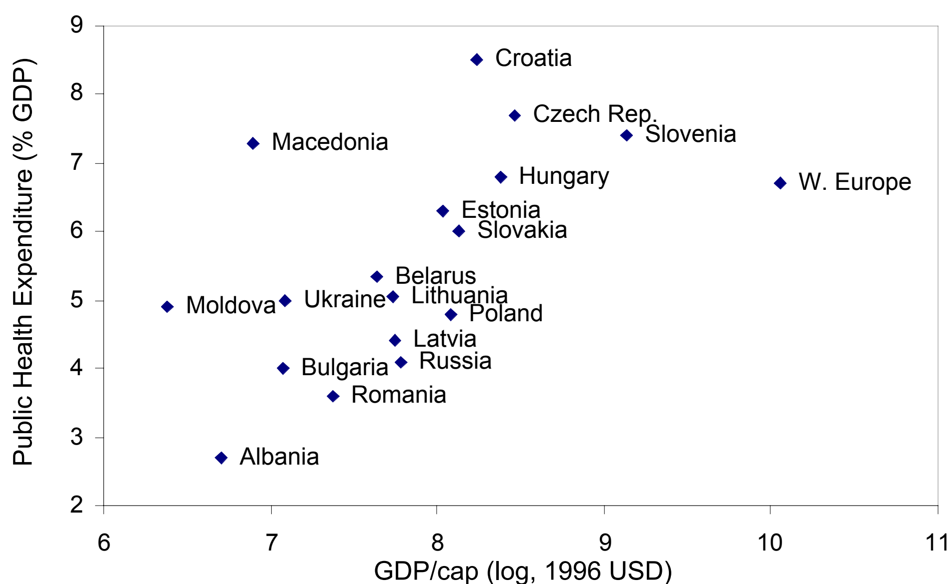
Macedonia declared independence from an already disintegrating Yugoslavia in 1991, and by 1992 was established under a new constitution supported by international recognition as a sovereign state. It was one of the poorest regions in the former Socialist Federal Republic of Yugoslavia (SFRY), and among republics and regions of SFRY during the 1980s ranked second to last behind only Kosovo in GNP/capita, infant mortality, and life expectancy (Mastilica, 1990). Independence itself caused a steep decline in output and the economy had only recently begun to grow pending the impact of the 1999 conflict in Kosovo. Macedonia's GDP per capita was $990 in 1996. Macedonia's population was 2.1 million according to the 1994 census; 72% Slavic Macedonians, 22% ethnic Albanians with the remaining 6% comprising Turks, Romas, and Serbs. A map of The Republic of Macedonia is shown in Figure 1.1.

Figure 1.1 – Map of The Republic of Macedonia

The health status of the Macedonian population is typical of the epidemiological transition found in CEE (Adeyi et al., 1997). Infant mortality has nearly halved since 1986 with a mean of 22.5 per 1000 live births in 1994. This, however, is second only to Albania in all of Europe and there is significant inequality within Macedonia as infant mortality in 1994

varied on the municipal level from 4 to 32 per 1000 live births (Peabody, Ponce and Molyneaux, 1997). Life expectancy, at 72 years is comparable to higher income countries in Europe. As might be expected, the leading causes of death, cardiovascular disease and cancer, are also like those of richer countries. Moreover, what gains Macedonia has achieved in population health status have been expensive. As shown in Figure 1.2, Macedonian public spending on health in terms of GDP is high relative to both western and eastern European countries.

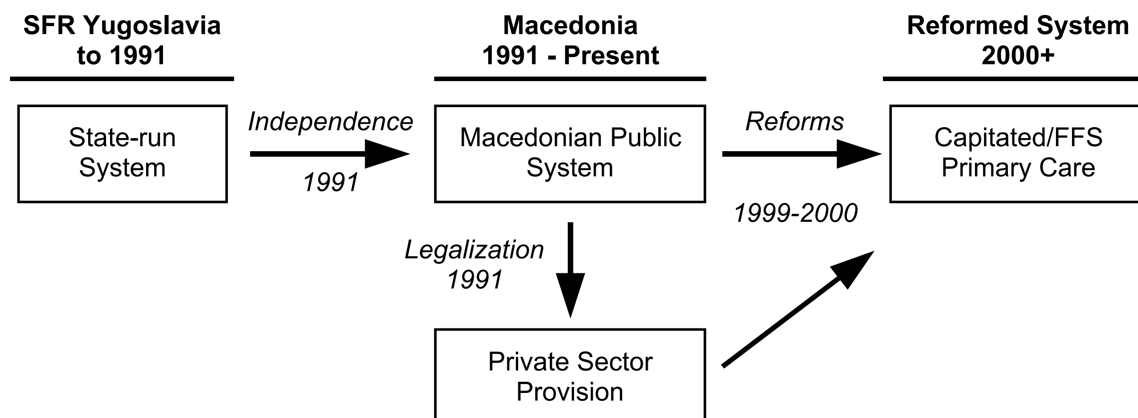
Figure 1.2 – Public Expenditure on Health vs. GDP/capita



Source: Health expenditures (1990-1995) - World Bank (1998), W. Europe means weighted by GDP/capita. GDP/capita - World Bank (1998), W. Europe means weighted by population.

Similar to other post-socialist states, the roots of the efficiency and quality problems of the Macedonian health systems lie in the heritage of the Yugoslav health care system and broader economic structure (Istenich, 1995). The Yugoslav planning system shaped policies towards the health sector in general, and health care facilities that had pervasive effects on financing and delivery, down to the level of physicians' clinical practices. It is this heritage that reformers are struggling with today. The development of the health system over time is depicted in Figure 1.3.

Figure 1.3 – Development of outpatient, primary care in Macedonia



The health institutions of the former Yugoslav system are largely unchanged and are still financing or providing services in Macedonia. Health care financing is organized by the Health Insurance Fund (HIF), based on Macedonia's segments of the SFRY Social Insurance Fund. Service provision has likewise remained unchanged. Nearly all tertiary care is provided in the teaching hospital in the capital, Skopje. The dominant form of provider organization is the municipality-based Medical Center, based on the old socially-owned enterprise model. While there are some differences across municipalities, Medical Centers typically consist of a general hospital with stand-alone clinics providing specialist outpatient services. Also under Medical Center administration are Health Centers or Polyclinics that provide preventive and primary care and limited secondary care in a multi-departmental setting. Some Medical Centers also administer urban ambulatory clinics with only one or two departments. Rural clinics fall under Health Center management. All public sector physicians are paid salary, which for primary care physicians runs $300 to $500 per month.[3]

Private provision of outpatient health care was legalized in 1991 to help meet demands of patient choice and physician self-determination. The private sector is examined in detail in following chapters, other highlights are provided here as useful background. Under law, physicians entering private practice may not also practice in the larger public sector. While the private sector accounts for less than 10% of all physicians, over 85% of private

[3] The average wage in Macedonia is about $300 per month.

physicians practice General Medicine, Pediatrics or Gynecology.[4] Private physicians account for 22% of all PHC physicians nationally and up to 30% in some regions. Compared to their public sector colleagues in PHC, private practitioners are more highly trained and work in better-equipped facilities overall, raising quality of care concerns.[5] Private physicians who have contracts with the HIF to provide allowed services are paid on a fee-for-service basis. While no reliable income information is available, estimates of private physician income run from 2 to 5 times that of public physicians.

HSTP reforms aim to unify PHC under a single payment system. The World Bank program calls for capitation payment, while the Macedonian Parliament and Physicians Chamber have pressed for fee-for-service payment.[6] The HSTP is developing both demand-side and supply-side strategies to improve the quality and efficiency of primary HC provision across Macedonia. Demand-side strategies under consideration include a new basic benefits package, changed coinsurance rates and coverage policies, management of care and patient cost sharing. These strategies aim to increase utilization of PHC and decrease total expenditures. Demand side incentives are reviewed in detail in Farley and Peabody (1997). Our main focus is on the supply-side – the policies and payment incentive system designed to influence physician behavior.

The Macedonian reforms are initially targeted at improving delivery of PHC and are aimed at both existing public and private primary care physicians. Given the status of primary care in Macedonia, especially in public clinics, capitation could have a large positive impact. In addition to making patient satisfaction relevant to public physicians, capitation may also improve quality by raising the pay and low prestige of PHC, thereby encouraging better doctors to choose PHC as a career. It may also have a large initial effect in efficiency if it allows providers to focus on true costs of practice, such as referrals to more costly specialist care. Finally, public primary care physicians receive the same salary, regardless of volume or quality. With the reforms, physicians in public clinics will be rewarded for higher productivity. This will level pay and also enhance competition between the two sectors.

---

[4] Primary Health Care is not well established in Macedonia, as elsewhere in the region (Tatar and Tatar, 1997). The reforms aim to consolidate primary care in the practice of general medicine, pediatrics, and gynecology.
[5] These data are from the source of data for this data, a Facility Survey of physicians conducted in 1997.

POLICY ISSUES

All countries struggle to arrive at an appropriate mix of public and private health care provision, arguing the merits of market versus government roles. Within these debates, market proponents predominantly emphasize supply-side incentives schemes designed to increase services and ensure an efficient use of resources and better quality of care. The World Bank-sponsored reform program in Macedonia contains these conventional supply-side elements; payment incentives for efficiency and quality.[7] These are coupled with administrative controls for recognized market failures such as over-referrals and excessive care.

Due to the nature of transition economies, proper payment incentives and administrative controls are not sufficient for successful privatization. That is, like other still-planned sectors of transition economies, markets simply do not exist for there to be market failures in any strict sense. In introducing market forces to health care provision in transition economies, reform programs must build market institutions to serve as enabling frameworks for the financial incentives that encourage efficient decision-making at an individual level. For example, problems at the level of the national economy, such as the ailing banking system in Macedonia, seriously affect the ability of physicians to finance capital improvements under privatizing reforms. At a lower level in the health sector, referral prohibitions established by municipal Medical Centers thwart attempts to increase competition between physicians.

The issues that this dissertation addresses exist at two levels. First are the policies governing private markets in the health sector. Specifically, this dissertation examines the development of market institutions broadly and whether government policies toward the private sector are effective. Second are the physician-level responses to incentives that are designed to control market failures and to encourage higher quality and efficiency. These issues are outlined in the remainder of this section.

---

[6] Capitation pays physicians a fixed rate per enrollee per time period. Fee-for-service reimburses providers a fixed amount for each of a specified list of clinical services.

[7] Reforms of demand-side incentives, medical education, and other elements of the The World Bank program are summarized in Chapter 3.

Sector-level policies

Systems that enforce financial discipline, effective legislative and regulatory mechanisms, and protection of private property are insufficiently developed in the health sectors of transition economies. Due to the lack of effective legal and political institutions that characterizes transition economies, policies toward the private sector are a haphazard mix of rules and regulations that inadequately control the private sector and fail to integrate it with the public sector to help meet national health goals (Rosenthal and Newbrander, 1997; Gilson and Mills, 1995; Bennet et al., 1994). Commonly, policies are established on an *ad hoc* basis in reaction to needs of a growing private sector with no coherent plan for regulating private provision (Roth, 1987). This scenario can lead to legal and administrative policies that distort the function of private health markets in many developing countries (World Bank, 1993). As shown in this study, these barriers in the policy environment of post-socialist, transition economies are pervasive and may prove detrimental to well-designed, if narrow, supply-side policies aimed at stimulating PHC services. While it is hoped that privatization will overcome these barriers, due to the nature of CEE health sectors and privatization in transition economies, the narrow introduction of market forces into publicly-provided PHC may not be sufficient to build this capacity much less functioning private markets in health.

In Macedonia, policy toward private provision has likewise been implemented haphazardly and often with little consistency in different regions of the country. Private sector policies and others governing behavior within the public sector, are often not currently addressed by the reform program with negative consequences for competition, efficiency, entry and exit , and integration of the health system. For example, public doctors are shielded from competition by Medical Centers that deny private doctors hospital privileges. This policy may also inappropriately reduce hospital referrals by private doctors. And, in most municipalities, private doctors also cannot receive referrals from the public sector. These referral policies counter the advantages of productivity-based payment systems under the reforms. Furthermore, they continue to block integration of service provision across sectors reducing efficiency and quality of care.

Entry and exit in the private market is largely controlled by the HIF which is responsible for granting, administering, and revoking contracts with physicians to provide care reimbursed

by the Fund. This has several important consequences. Sole discretion over granting and revoking contracts to licensed private physicians is held by the Director of the HIF. Due to restrictions on new contracts, the annual number of new entrants to private practice dropped by over 90% (from 27 to 2) between 1995 to 1997. Also, while contract revocations are rare, several did occur during 1995-1997. Concurrently, in 1996 the HIF Director also abolished the Fund's grievance board, a forum for resolving contract disputes with private physicians. Finally, actions at lower levels of the HIF also complicate private decision-making such as retroactive changes in the list of reimbursable services made by HIF branch offices.

As a final illustration of policy barriers to reform, financing capital investments in both sectors face important and different constraints. Public clinics are characterized by poor structural quality, generally lacking adequate facilities and even basic equipment. This lack of investment stems from the historic lack of investment in PHC in the former system and is exacerbated by chronic budget deficits suffered since independence. In the private sector, clinics must meet minimum well-enforced standards for facilities, sanitation, and equipment and similar demands for capital investment. However, the banking system, like many poorer CEE countries, is in poor condition, lacks public trust, and places onerous terms on individual borrowers.[8] As a result, many private physicians are relatively wealthy or able to raise funds from, typically, mangers of large enterprises. Those that would rely on the banking system either establish poorly equipped clinics or are effectively precluded from private practice. Without addressing these related problems, efforts to expand private PHC will be seriously challenged.

Provider-level incentives

Financial incentives facing physicians in private practice, though well known, face additional problems in developing countries (e.g., Healy and McKee, 1997; Bennet et al., 1994). Private doctors, who bear financial risk for their operations, have incentives to retain patient fees and treat patients in their offices. To increase income, they may increase fees, increase patient load, raise patient-perceived quality, and de-emphasize preventive and public health services. In Macedonia, most private doctors provide primary care services reimbursed by the Health Insurance Fund on a fee-for-service basis. Unregulated, such a system can lead to

supplier induced demand. Conversely, the lack of quality- and efficiency-based incentives in the public sector may also lead to inappropriate referrals and unneccesary test-ordering. Other problems arising from the large difference in income between the two sectors have important implications. The higher incomes in the private sector are motivation to leave public practice, and may lead better physicians to abandon public clinics. Additionally, low pay and low morale may exacerbate the normal, substandard practice of PHC in the public sector. In marked difference to the motives in private care, publicly provided PHC is largely limited to prescribing medications and referring patients to secondary care.

The PHC reform program seeks to solve these problems by reorienting incentives for efficient and high-quality of care in both sectors. The core of this approach is a productivity-based payment system for all primary care doctors. Specifics of the system have not been finalized and there is some debate about the precise approach. The World Bank advocates for capitation, while the Macedonian Parliament is also considering a fee-for-service system in the public sector. A combination approach may also be possible. A demonstration program that tests one or both schemes will be implemented in selected districts in 2000. This demonstration seeks to establish whether the new payment and other changes[9] lead to a more rational use of resources, raising overall efficiency and quality.

Regardless of payment approach implemented, each faces the same fundamental design issues. First, in either capitation or fee-for-service, physician income and ultimately the strength of the incentives depend in large part on the number of patients seen, or physician utilization. The primary issue, then, is to design productivity-based performance incentives with an adequate patient load, while also balancing the need for reasonable physician income and the realities of the HIF budget. Secondly, related to utilization is the issue of eligibility for the new payment system. Due to geography or the nature of the practice, some physicians may not have adequate patient volume to generate a livable income, for example those in rural clinics or gynecology departments. Finally, a central theme of the payment reforms is to encourage the efficient use of resources. This is especially important in the current public clinics where physicians do not bear any financial costs of their resource

---

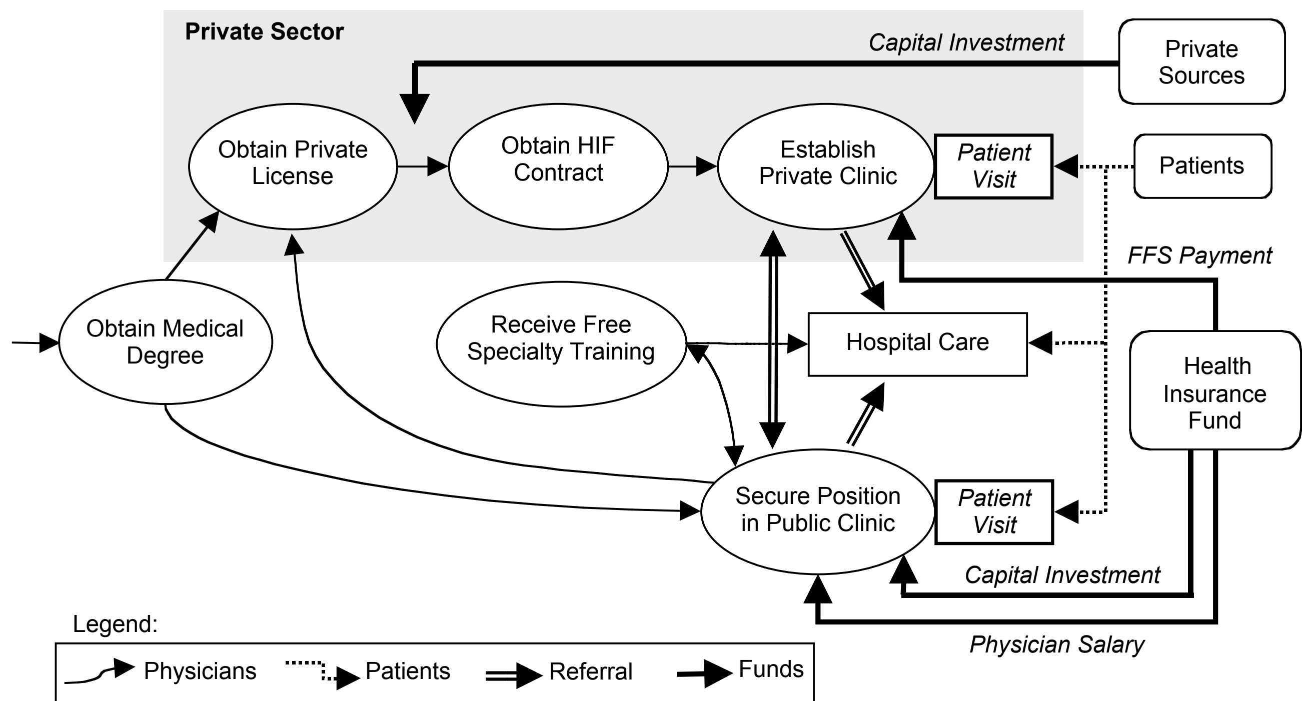
[8] e.g., 100% collateral, 20% interest rate and 6 month maturity.

decisions. The degree to which individual physicians are financially responsible for their practices – lab costs, referrals, staff, even facility costs – will have important impacts on the ability of reforms to improve efficiency.

RESEARCH PLAN

A central argument of this study is that behavior of physicians is determined not only by the different payment structure in the two sectors but also by other market and regulatory incentives.[10] Further, that in a transition economy such as Macedonia, reforms to physician payment systems will not achieve the goals of reform unless the broader market and regulatory issues are addressed. As an illustration of this, Figure 1.4 depicts a model of the existing Macedonian primary health care "system."

Figure 1.4 – System Model of Primary Health Care



---

[9] Including a new list of covered services, continuing medical education for PHC, new co-payments schedule, and new management information systems.

[10] Hausman and Le Grand (1999) add norms and standards of medical practice to this list. The reform program has begun addressing this area by implementing Continuing Medical Education (CME) for PHC.

Figure 1.4 represents all basic elements of the current PHC system including: the process of physicians entering either public or private practice; flows of public funds and private financing through the system; flows of patients; and, the patient/physician visit itself. In these terms, the aim of the reform program is to improve the efficiency and quality of the Patient Visit by redesigning the payment incentives for individual physicians. The primary vehicle for this – physician payment systems – is shown as salary or FFS payment from the HIF to health care providers. The remaining sector-level policies left unaddressed by reforms, such as graduate education eligibility and referral policies, are also represented in the Figure.

Figure 1.4 likewise highlights the research questions answered by this dissertation. At the sectoral level I address how the reform program can structure policies that adequately support and regulate a private health market in a transition economy. This is done by a qualitative analysis of the PHC policy environment illustrated in Figure 1.4; essentially all system elements outside the Patient Visit. An underlying assumption of this study is that neither the existing policy environment, nor that planned by the reforms, is an adequate foundation for the privatization of health care provision. This analysis identifies policy failures and other barriers to effective functioning of the PHC system.

In the second component of the analysis, I use cross sectional data from a survey of physicians to answer the question: How do physicians respond to the existing incentive structures of the private market? Referring again to Figure 1.4, this component of the analysis tests the effect that differing payments have on physician decisions made during the *Patient Visit*. These decisions are considered in terms of workload and resource use. Theory is ambiguous on the effects of payment incentives (see Chapters 4 and 6). Motivation to maximize incomes suggests that private physicians will have higher patient loads and more efficient resource use than salaried public physicians. Conversely, private physicians seeking to please and retain patients may spend more time and use more resources on fewer patients. The matter is complicated further by the fact that the Macedonian private sector is heavily regulated with significant constraints on physician choices on workload and services provided. With these considerations, it would be somewhat arbitrary to state *a priori* hypotheses concerning physician responses to existing incentive systems. To understand the

factors influencing such decisions, I develop a model of production decisions made by physicians in the two sectors.

Together, these two analytic approaches will help develop policy options that ensure the privatization reforms of primary care succeed in improving the overall quality and cost-effectiveness of the Macedonian health care system.

ORGANIZATION OF THIS DISSERTATION

This dissertation contains seven chapters. Chapter 2 provides background on the relevant economic history of Macedonia, highlights the development of its health sector, and also introduces the development of privately provided health care. The literature review in Chapter 3 develops an analytic framework for the qualitative portion of this study. It facilitates an evaluation of the policies governing the private sector with respect to the goals of developing well-functioning markets. This taxonomy structures the discussion of policy and market failures identified by the system model approach. Chapter 4 is an analysis of the policies governing the private health care sector currently, and those proposed under the reform program. It examines the policies governing the private sector, and PHC in general, and employs the privatization taxonomy established in Chapter 3 to determine whether the policy environment of the health sector, both currently and under the reforms, meet the goals of well-functioning markets. Chapter 5, is a review of the literature on private sector health care provision in developing and transition economies. Here I focus on the issues of efficiency and quality of care and summarize the literature on physician productivity that underlies the development of the model of physician output decisions. Chapter 6, Methods and Data, describes the quantitative analyses and survey data used in evaluating physician performance. Chapter 7 presents results of the analyses. Chapter 8 discusses conclusions and recommendations.