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Obligatory service requirement and physician specialist distribution in Turkey

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Abstract

Obligatory service requirement is one of the government policies which has been adopted, especially in developing countries, to attract physicians to locations that are considered rather unattractive. Objective of this study is to analyze the impact of the obligatory service requirement on specialist workforce distribution in public sector in Turkey, using a panel study with data from 63 provinces, in years 1990, 1995, and 2000. To identify the impact of the regulation we make use of the change in the regulation in 1995 which ended the requirement for the new graduates to work for 2 to 4 years in a location specified by the government. We test whether the importance of a socio-economic development index as a determinant of specialist distribution differs across the periods. We also provide summary statistics for the change in the workload of specialists. Results show that obligatory service requirements have been effective in directing specialist workforce to less developed parts of Turkey. When the requirement was lifted, socio-economic conditions of a region became a significant determinant of availability of specialists. Despite improvement in the specialist distribution, we observe no change in workload of specialists indicating a significant shortage.

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1. Introduction

Physician distribution across geographic locations, its determinants and government policies addressing it has been extensively discussed in the literature (e.g. Dussault and Franceschini 2006). In various countries, monetary incentives and non-monetary policies have been used to attract physicians to locations that are considered rather unattractive. Obligatory service requirements have been one of non-monetary policies which have been in place in 70 countries at some point in time (Frehywot et al. 2010). Research on effectiveness of such programs, however, is very limited, partially due to the fact that these are mostly adopted by developing countries and data and research is rather scarce for these countries (Grobler et al., 2009; Frehywot et al., 2010; Bärnighausen and Bloom, 2009).

This article focuses on obligatory service laws for physicians in Turkey which have been in place from 1981 to 1995 (Law no. 2514).[1] Under the regulation, between 1981 and 1995, all the new medical school graduates had to work for 2 to 4 years in a location specified by the government. We compare the period with obligatory service requirement (1990-1995) to the period without (1995-2000) through an analysis of determinants of the change in the number of per capita physician specialists across 63 provinces before and after the change in regulation.

Noting that unequal distribution of physician workforce within the country may be based on large variation in socio-economic conditions as well as differences in need for health care services due to differential demographics, empirical analysis aims to measure the change in the impact of socio-economic characteristics with regulation while controlling the need for healthcare services using a seemingly unrelated regressions framework. We expect socio-economic factors to play a lesser role in the period with the obligatory service requirement. We also compare workloads across the regions as well as across the time periods to assess the impact of the regulation on it.

Our findings provide evidence for the impact of the regulation on physician specialist distribution. The impact is most important for those provinces which ranked in the second and third quartile in a ranking based on the development index. Regulation has benefited provinces in the third most developed quartile at the expense of those in the second most developed quartile. It is noted, however, that imbalances, although alleviated, were not eliminated.

Next section provides a brief description of obligatory service requirement in Turkey and data used in the study. Results are presented in section 3. In section 4 we provide a brief overview of developments in 2000s and conclude with a discussion in section 5.

2. Materials and Methods

2.1. Obligatory service and physician distribution:

Turkey had a consistent shortage of healthcare professionals with the number of physicians per 1000 people lagging far behind OECD averages. Number of physicians per 1000 population was 0.92 in 1990 and 1.33 in 2000 (OECD 2013).[2] The distribution of physicians is further unbalanced within the country. The physician specialist per capita numbers in major provinces is more than double the number in smaller ones.[3]

In Turkey, a physician is defined as the person who has completed six years of higher education in medicine. Those who have had a further period of training of two to six years in

[1] Obligatory service requirement has been reintroduced in 2005 with some modifications (Law no. 5371). We analyze 1990s in detail and 2000s briefly in this article since in 2000s Turkey implemented a comprehensive reform package in healthcare making it impossible to isolate the impact of the change in obligatory service requirement in 2005.

[2] The figure increased to 1.63 in 2010 (OECD 2013)

[3] Authors˘ calculations from Ministry of Health (1990, 2000).

a special field of medicine are called physician specialists.[4] Access to physician specialist training is through a competitive exam. Training for a life-long physician specialist certification requires completion of a thesis, success in a centrally administered written (multiple choice) exam, and success in an applied specialty exam administered by a jury composed of faculty of medical schools. Public medical schools have been the sole source of medical education until recent years. The education is highly sponsored by government and students make rather small tuition payments.

Obligatory service law was put into practice between 1981 and 1995. From 1995 on, the law was suspended annually and in 2002 it was abolished. Under obligatory service the location decision of a physician specialist or a practitioner upon graduation has been determined by the government. In this system, following six years of initial medical education:[5]

- graduate either goes for specialty training or the obligatory service of two years as a practitioner in a public facility.
- if s/he chooses to continue her/his specialty education, upon completion of training s/he is required to complete obligatory service in a public hospital for four years.
- if a graduate completes two years of obligatory service and then does the physician specialist training, s/he is required to work for two more years in a public hospital to complete obligatory service.
- if a physician chooses not to complete obligatory service, s/he is not allowed to work as a physician in Turkey.

In 1990s health services in Turkey were provided by a multitude of public and private providers (see Savas (2002) and OECD (2008) for detailed info on Turkish healthcare system in 1990s). The key public provider was (and still is) the Ministry of Health (MoH) with its extensive network of health facilities providing primary, secondary and specialized inpatient and outpatient care. In addition to these hospitals a significant network of secondary in- and outpatient facilities and a more limited number of primary facilities were operated by Social Security Institution (SSI) servicing its members and their dependents.[6] A much smaller network of private facilities have also existed. In 2000, 56% of the total patient visits to hospitals were to MoH hospitals, followed by 34% to SSI hospitals, 7% to university hospitals and 2% to private hospitals. Regarding the physician specialists, about one third were employed by MoH, about one fifth in private sector (own practice or employed by a private facility) and the rest worked in various public institutions such as SSI or university hospitals (MoH, 2000).

2.2. Data

There are 81 provinces in Turkey. The three big ones, Istanbul, Ankara and Izmir are excluded from the analysis, as they are detected to be outliers. The total number of physicians working in those provinces and their ratio to population is far greater than the remaining provinces. Of the remaining 78 provinces, eight were not established by 1990 and were included within the borders of other provinces. To be consistent through time, we excluded those provinces that were created after 1990 and the provinces these new provinces were separated from.[7] Another important development during our study period was a major

[4] In this study we focus on the number of specialists for which we have detailed data. Specialists are located in hospitals in urban areas with different levels of development. Also note that the data does not allow us to make a distinction between different types of specialists.

[5] In the period considered in this study, all undergraduate medical schools were public and there were one graduate private medical school. Private medical school graduates have been subject to the same obligatory service requirement as public school graduates.

[6] These hospitals have been transferred to MoH in 2004 and SSI stopped providing medical services by itself.

[7] These provinces are Bartyn, Ardahan, Igdyr, Yalova, Karabük, Kilis, Osmaniye, Düzce, Adana, Bolu, Gaziantep, Kars, and Zonguldak.

earthquake at northwestern part of Turkey in 1999. Three provinces in our sample have been seriously hit by the earthquake. These provinces (Bolu, Kocaeli and Sakarya) were also excluded from the sample. Resulting sample comprised 63 provinces.

For our study we analyze the number of physician specialists. To construct the variable of interest the number of physician specialists in the MoH hospitals at a given province is divided by the 10,000 population in that province. The number of physician specialists is derived from the Statistical Yearbook of Inpatient Health Institutions 1990, 1995 and 2000 published by Ministry of Health in Turkey. The population figures are obtained from Turkstat Provincial Indicators (2003).

Literature found socio-economic conditions of a given location to be an important determinant of physician specialist˘s location choice (e.g. Elesh and Schollaert, 1972; Dussault and Franceschini, 2006). Therefore socio-economic conditions, which also measure the income opportunities from the private practice of the public sector physicians, could have an impact in the location choice of these physicians.[8] In addition it is also possible that these locations provide better living conditions and are preferred by physicians.

For the analysis, we distinguish across provinces based on an index of socio-economic development calculated by State Planning Organization of Turkey for the year 1996 (Dinçer et al. 1996). The index is calculated using principal component analysis with a large number of indicators such as population size, per capita GDP, age dependency ratio, education level, unemployment ratio, share of agricultural employees in total employed population etc. It should be noted that the index provides a single measure whose effect can be compared in two different periods, before and after 1995. Using the index we also create a set of dummies indicating development level of the province based on the quartiles of the index.[9]

Table I: Summary statistics and correlation table for independent variables

	Average	Correlation with			
	(st.dev.)	Index	Youth	Elderly	MoH beds
Socio-economic Development Index	-0.16	1			
	(0.63)				
Youth	0.11	-0.75	1		
	(0.03)				
Elderly	0.06	0.48	-0.86	1	
	(0.02)				
MoH beds per 10,000 population	10.7	0.26	-0.59	0.65	1
	(4.49)				

Notes: Standard Errors are in parentheses

We create two alternative measures for the need for healthcare. The ratio of those below 5 years and the ratio of those older than 65 years to population are used to reflect population composition. These are the two groups which need the healthcare most. It should be noted that ratio of youth to population is highly negatively correlated with socio-economic development, a point considered in discussing the results. Finally number of beds in public hospitals is introduced to control for availability of resources. Table I displays the summary

[8] In Turkey public sector physicians were allowed to work part-time in private practice in 1990s. A study carried out by Tokat (2001) showed that physicians working part time in the private sector earned almost four times more than physicians working full time in the public sector.

[9] Development index is also calculated for the year 2003 using demographic data from 2000. We repeated the exercise using index figures from 2003 but the results did not change.

statistics for the independent variables and shows the correlation matrix for the variables used in this analysis.

3. Results

3.1. Summary statistics

Unequal distribution of physician specialists over the country can be observed in the raw data. For the years 1990, 1995, and 2000, Table II presents average over provinces of the number of physician specialists as well as the number per 10,000 population. The last two columns present the change in per capita (per 10,000 population) figures from 1990 to 1995 and from 1995 to 2000.

It is observed that in 1990 average per capita number of physician specialists in the least developed provinces (0.39) was about one third of the number in the most developed provinces (1.2). In all three periods the difference between the most and the least developed regions is high and significant. There also are differences between the other categories of development.

Table II: The average number of specialists and the changes

	1990		1995		2000		**Change in Ratio**	
	N	**Ratio**	**N**	**Ratio**	**N**	**Ratio**	**1990-1995**	**1995-2000**
All	51	0.84	70	1.09	105	1.50	0.25	0.41
	(44)	(0.39)	(62)	(0.50)	(94)	(0.65)	(0.25)	(0.26)
Least Developed	16	0.39	21	0.50	35	0.71	0.11	0.21
	(13)	(0.17)	(17)	(0.20)	(29)	(0.25)	(0.22)	(0.22)
Second least developed	38	0.73	53	1.06	78	1.42	0.33	0.36
	(18)	(0.12)	(22)	(0.31)	(39)	(0.32)	(0.29)	(0.25)
Second most developed	66	1.05	84	1.29	125	1.79	0.24	0.51
	(44)	(0.25)	(62)	(0.34)	(88)	(0.50)	(0.22)	(0.25)
Most Developed	89	1.20	124	1.54	189	2.11	0.34	0.57
	(49)	(0.36)	(73)	(0.42)	(118)	(0.48)	(0.22)	(0.19)

Notes: Standard Errors are in parentheses.

Last two columns of Table II focus on the change across periods. Even during the obligatory service period we observe the least developed regions to lag behind other provinces. The medium-low developed region, however, had an increase in physician specialist to population ratio that was greater than the one in medium-high developed provinces. When the obligatory service was lifted, we observe a major change in high and medium-high provinces compared to the period 1990-1995. In medium-low provinces, however, the change in ratio stays the same.

3.2. Regression analysis:

Next, we run regressions where the empirical specification relates the change in number of physician specialists per 10000 population in a given district j, from time period t-5 to t (1990 to 1995 or 1995 to 2000), to the level of the index of socio-economic conditions, the ratio of youth and elderly (mean of the levels in 1990 and 2000), and the number of beds in MoH hospitals in 1995:[10]

[10] We chose to use values of independent variables at the mid-1990s. Alternative specifications do not change the significance levels. To check robustness of our results we have also performed the regressions using the values of independent variables at different dates (2003 for the index, 1990 and 2000 for youth and elderly ratios). The results did not change significantly.

$$\Delta Spec.perCapita_{t-5,t} = \beta_0 + \beta_1 * DevIndex_{96} + \beta_2 * elderly_{95} + \beta_3 * youth_{95} + \beta_4 * MoHBedsPerCapita_{95} + \varepsilon_t$$

To account for the correlation of the error terms in the two regressions we use Seemingly Unrelated Regressions (SUR) methodology. SUR methodology makes a correction in standard errors in the estimation similar to White's error correction in simple regression for heteroskedasticity.

Table III presents regression results. The controls are added gradually. First set of regressions show the results with development index only. Then we add the ratios of elderly and youth, and finally the number of beds in MoH hospitals per capita. With development index as the only explanatory variable, development level is significant in both periods but the coefficient is about twice in latter period where obligatory service requirement was lifted. We do fail, however, to reject a test of equality for the index coefficient in the two periods possibly due to small sample size and large variance in dependent variable.

Table III: Regression results for specialists at MoH hospitals

Dependent variable: Change in specialists per 1000 population	**Spec. 1**		**Spec. 2**		**Spec. 3**	
	1990-1995	**1995-2000**	**1990-1995**	**1995-2000**	**1990-1995**	**1995-2000**
Socio-economic Development Index	0.12 **	0.22 ***	0.01	0.2 **	0.02	0.22 ***
	(0.05)	(0.05)	(0.07)	(0.08)	(0.07)	(0.08)
Ratio of youth			0.63	-1.63	1.03	-3.78
			(2.33)	(2.71)	(2.34)	(3.18)
Ratio of elderly			8.53 ***	-2.84	7.91 ***	-1.02
			(2.69)	(3.13)	(2.75)	(2.72)
Number of beds in MoH hosp.s					0.01	0.01
					(0.01)	(0.01)
Constant	0.27 ***	0.44 ***	-0.28	0.77 *	-0.36	0.65
	(0.03)	(0.03)	(0.38)	(0.44)	(0.39)	0.45
R_square	0.09	0.27	0.41	0.28	0.42	0.3
N	63	63	63	63	63	63

Standard Errors are in parentheses.
***, **, and * indicate statistical significance at 1%, 5%, and 10% levels respectively.
Results are obtained by Seemingly Unrelated Regressions

When we add the elderly and youth variables, the development index variable becomes insignificant and is close to zero in 1990-1995 period. Coefficient for elderly is significant, possibly indicating that physician distribution was more responsive to needs. In 1995-2000 period however, the index coefficient is significant while the ratio of elderly and youth have negative but insignificant coefficients. Adding the number of beds does not create a difference in results.

A major problem in a before-after study is various other developments that could occur during the time periods considered. Data is rather scarce in Turkey for that period and it is difficult to account for different factors that may affect the results. To deal with this problem at least partially, we also repeat the analysis using the number of physician specialists working in hospitals operated by SSI. These hospitals provide services to members of SSI only and they are not directly affected by the obligatory service laws. We expect the results for these hospitals to be similar in the two periods 1990-1995 and 1995-2000 (i.e. the relation between the change in the number of physician specialists in those hospitals and socioeconomic conditions in 1990-1995 and 1995-2000 periods to be the same). While SSI hospitals would work as a control for external conditions that affect all physician specialists, it would not do so for changes that affect only MoH hospitals. Our conversations with officials

indicate no such major change but, of course, the analysis is subject to all the caveats pertaining to before-after studies.

Table IV provides the results from the analysis of SSI hospitals. Since SSI provides services in 47 of the provinces in our sample, the analysis is restricted to that subsample. Regression results find no difference in significance of index variable across the time.[11]

Table IV: Regression results-SSI hospitals

Dependent variable: Change in specialists per 1000 population	**Spec. 1**		**Spec. 2**		**Spec. 3**	
	1990-1995	**1995-2000**	**1990-1995**	**1995-2000**	**1990-1995**	**1995-2000**
Socio-economic Development Index	0.08 **	0.07 *	0.07	0.03	0.06	0.03 ***
	(0.04)	(0.04)	(0.06)	(0.07)	(0.06)	(0.07)
Ratio of youth			0.33	-1.11	0.34	-1.11
			(2.15)	(2.35)	(2.10)	(2.29)
Ratio of elderly			1.8	0.33	1.27	0.94
			(2.20)	(2.41)	(2.18)	(2.38)
No. of beds in SSI hospitals					0.01	-0.02
					(0.01)	(0.01)
Constant	0.07 ***	0.14 ***	-0.07	0.23	-0.09	0.25
	(0.02)	(0.02)	(0.34)	(0.37)	(0.33)	0.36
R_square	0.09	0.06	0.13	0.09	0.13	0.14
N	47	47	47	47	47	47

Standard Errors are in parentheses.
***, **, and * indicate statistical significance at 1%, 5%, and 10% levels respectively.
Results are obtained by Seemingly Unrelated Regressions

Given the evidence indicating that socio-economic development had differential impact on the physician specialist distribution in the two periods in MoH hospitals but not SSI hospitals, we now look further to disentangle the impact across quartiles of development by replacing the development index with dummies indicating development quartiles. The least developed quartile is the omitted category. The coefficient for each quartile dummy shows the difference from the lowest quartile. The result without controls, presented in Table V, displays that in 1990-1995 period only the most developed and second least developed regions had significantly higher increase in physician specialist ratio. In 1995-2000 period however, all three quartiles witnessed a significantly higher growth in physician specialist ratio compared to least developed quartile of provinces. Results suggest the obligatory service requirement to be beneficial for the second least developed group of provinces at the expense of the second most developed quartile of provinces.

[11] To make a proper comparison we repeated the analysis for MoH hospitals using only those 47 provinces. The results did not change.

Table V: Regression results for specialists at MoH hospitals-Socio-economic development quartiles

Dependent variable: Change in specialists per 1000 population	Spec. 1		Spec. 2		Spec. 3	
	1990-1995	1995-2000	1990-1995	1995-2000	1990-1995	1995-2000
Most Developed	0.23 ***	0.36 ***	-0.04	0.38 ***	-0.01	0.4 ***
	(0.08)	(0.08)	(0.12)	(0.13)	(0.12)	(0.13)
Second most developed	0.13	0.3 ***	-0.07	0.31 **	-0.09	0.29 **
	(0.08)	(0.08)	(0.10)	(0.12)	(0.10)	(0.12)
Third most developed	0.22 ***	0.16 **	-0.01	0.19 *	-0.02	0.18 *
	(0.08)	(0.08)	(0.09)	(0.10)	(0.09)	0.10
Ratio of youth			-0.54	-1.15	-0.28	-4.18
			(2.27)	(2.61)	(2.25)	(3.20)
Ratio of elderly			7.47 ***	-3.01	6.32 **	-0.88
			(2.65)	(3.06)	(2.77)	(2.60)
No. of beds in MoH hospitals					0.01	0.01
					(0.01)	(0.01)
Constant	0.11 *	0.21 ***	-0.07	0.48	-0.36	0.41
	(0.06)	(0.06)	(0.42)	(0.48)	(0.39)	(0.48)
R_square	0.14	0.29	0.42	0.3	0.44	0.32
N	63	63	63	63	63	63

Standard Errors are in parentheses.
***, **, and * indicate statistical significance at 1%, 5%, and 10% levels respectively.
Results are obtained by Seemingly Unrelated Regressions

When we add control variables, we find no significant difference across quartiles in 1990-1995 period. Hence, assuming controls for the need work properly, the differences observed in the regression without the controls were due to differential need for healthcare services. In 1995-2000 period, even when we control for need, more developed provinces are observed to receive more physician specialists compared to less developed provinces.

3.3. Workload of physician specialists

To assess the impact of the obligatory service on workload of physician specialists, we analyze the ratio of outpatient visits at hospitals to number of physician specialists per year for each development level.

The columns of Table VI show the average ratio of yearly outpatient visits per physician specialist in 1990, 1995, and 2000, for each quartile of development index. Number of outpatient visits per physician specialist is clearly correlated with development level.

Table VI: Average Outpatient visits per specialist

	Outpatient (000 per specialist)		
	1990	1995	2000
Least Dev.	8.81	10.37	10.09
Medium-Low	7.08	7.21	7.24
Medium-High	5.76	6.07	5.97
Most Dev.	5.15	5.14	5.04

We find very little difference across years except for the worsening in least developed regions from 1990 to 1995. This indicates that despite increasing number of specialists with

the obligatory service requirement in less developed provinces, the situation did not improve for the patients. It should be noted that this might have resulted from an increase in healthcare seeking by patients with increased specialist workforce.

4. Developments after 2000

Starting in 2003 a series of reforms was implemented in Turkey.[12] Titled ‘Health Transformation Programme’, these reforms extended coverage of public health insurance, increasing the demand for healthcare services. New insurance schemes providing free public insurance coverage to the poor population increased healthcare use even more in less developed regions. To address the shortage in public hospitals, earlier salary based physician payment scheme was complemented with a fee-for-service supplementary payment scheme which reached three quarter of total specialist compensation. This however did not address unequal distribution of specialists. To deal with physician shortage in less developed regions, Turkey reinstituted obligatory service requirement in 2005.

It is difficult to distinguish empirically between the impact of various components of the reform, especially of the new payment scheme, and the impact of the obligatory service requirement. Yet we can illustrate extent of inequalities and how these were affected by the obligatory service requirement by analyzing some regional statistics from the period 2000 on.

For that we focus on two specific regions. South Eastern Anatolia is the least developed part of Turkey. Western Marmara region, on the other hand is at the other extreme. In 2002, Western Anatolia had 1.11 specialists per 1,000 population compared to 0.29 in South Eastern Anatolia. By 2011 per capita specialists number almost doubled to 0.57 in South Eastern Anatolia, with an increase above the one observed in overall Turkey. On the other hand, a similar increase has been observed in Western Marmara with the figure reaching 1.4, leaving the large gap between the two regions intact. Hence, obligatory service requirement, just as in 1990s, appear largely to have kept the situation from getting worse (Ministry of Health 2012).

5. Conclusion

Our analysis provides some evidence for positive impact of the requirement for a more equitable distribution of physician specialists across Turkey. The impact of socio-economic conditions on physician specialist distribution in the regulation period have been weaker compared to non-regulation period. The fact that SSI hospitals did not have such a difference between these two periods shows that the difference was not due to other factors that might have affected all physician specialists. It should be noted, however, that analysis controls a limited number of factors and the results could have been driven by factors specific to MoH hospitals that are unknown to us.

Despite the improvement in the physician specialist distribution, we observe no improvement in the workload of physician specialists with regulation. It should be noted that despite a program covering all new graduates of medical schools, inequalities are not eliminated. In 1995 workload of physician specialists working in least developed provinces is twice that of physician specialists working in other regions.

There are major shortcomings of an obligatory service requirement that need to be noted in evaluation of the program. It goes without saying that the policy is unpopular among physicians and has been highly contested by the physician organization. It is clearly controversial to force individuals to work at certain location before they could practice their profession. Issues in implementation of this type of programs, such as lack of complementary human resources and necessary equipment, has been discussed in earlier literature (Cavender and Alban 1998). An additional concern could be to reduce attractiveness of the profession, limiting future supply of physicians. For Turkish case, in the university entrance exam results,

[12] See Atun et al. (2013) for a favorable view on reforms. Bugra and Keyder (2006) and Eder (2010) provides a more critical view on transformation of welfare regime in general.

however, we observe no noticeable impact of the obligatory service laws on the popularity of medical schools among university candidates (as measured by the percentile rank in university entrance exams of the last student admitted to medical school among all students).[13]

Although the requirement does not eliminate differences across regions, it likely plays an important role for MoH. Presence of a viable outside option, such as private practice, to public hospitals makes it difficult for MoH to distribute physicians evenly across regions. To get physicians to work in public hospitals MoH has to offer them attractive locations occasionally and cannot keep the physicians in relatively backward locations for long time. There is a rotation system in work where physicians declare their preferred locations and are allocated accordingly when that is possible. When demand for a location is higher than supply, physicians are ranked based inversely on the socio-economic conditions of previous locations. Obligatory service serves an important purpose in this setting. It provides a physician workforce available to locate as needed.

An alternative to obligatory service could be to provide financial incentives to physician specialists for working in less developed provinces. This, however, may be prohibitively costly considering the private practice opportunities in more developed provinces. Providing incentives such as education opportunities is another type of obligatory service programs which gives physician candidates a choice and is likely to be less costly than providing direct financial incentives given high demand for medical education. Evidence for success of such programs exists but literature notes potential for differences in quality of physicians in developed and developing regions resulting from the program (Barninghausen and Bloom 2009, Matsumoto et al. 2010).

An equitable distribution of physician specialist workforce is undoubtedly an important issue especially considering migration of healthcare workforce from underdeveloped countries to more developed ones, and serious shortages projected for least developed countries in the future (Scheffler et al. 2008). It is, however, important to recognize that the fundamental problem lies in differences across provinces in development levels. Income inequality is a major issue in Turkey and causes not only unequal access to healthcare across provinces but also within provinces. A broader and comprehensive social policy should be developed to fight with income inequality across the country. All the other policies, such as obligatory service or financial incentives, should be considered as short term solutions.

[13] An issue that often arise with such programs is absenteeism. We are not aware of any discussion of such behavior in Turkish context.

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