Government-Owned Bank Credits and Regional Growth: Evidence from Turkey

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Abstract

The pervasive existence of government-owned banks is often justified by the failure of private banks to allocate loans, especially in remote and underdeveloped regions. This paper is the first paper that analyzes the impact of credits provided by government-owned and private banks at the regional level. The analysis is done in Turkey, where government-owned banks were established with the explicit role of promoting growth. It is found that private banks do better in terms of improving income level in both developed and less-developed provinces, whereas government-owned banks provide more benefit to less-developed provinces that are advocates of the ruling political party. Since government-owned banks have not used their resources to equalize the level of development across Turkish provinces, there is no economic reason to keep them; there may, however, be political reasons.

Key words: Banks, regional growth, credits, development view, political view, Turkey.

1. INTRODUCTION

Government-owned banks (GOB) have kept their presence in the banking sectors of both developed and developing countries.[1] Their existence has been justified by their support of projects that are not financed by private banks. Levine (2006) argued that GOBs may promote growth by financing firms that are not able to access credit markets. These firms may be small, may not have enough collateral or may lack credit histories. GOBs may also stimulate growth by promoting financial development and mitigating market failures in some countries (Gerschenkeron, 1962; Levy-Yeyati, Micco and Panizza, 2004). Moreover, these banks promise to fund socially valuable projects that reduce poverty. Their positive impact on growth is known in the literature as the development view.

In contrast, cross-country studies have shown that there is a negative relationship between government ownership of banks and economic growth. For example, using data from 92 countries around the world, La Porta, Lopez-de-Silanes and Shleifer (2002) showed that countries with high government ownership of banks in the 1970s had lower economic growth, lower productivity growth and a financial system that developed more slowly. These findings support the "political view" of government involvement in the banking sector. According to this view, GOBs exist not to channel funds to socially efficient and desirable projects but to satisfy the objectives of politicians, such as providing benefits to their supporters. Politicians get their return in the form of votes, political contributions or even bribes (Kornai, 1979; Shleifer and Vishny, 1994). Similarly, Berger, Hasan and Klapper (2004) presented evidence that a higher market share of GOBs in developing countries negatively affects the aggregate economic performance.

The common characteristic of previous studies is that they measure the involvement of GOBs in the banking sector at the aggregate level. The hypothetical transmission mechanism for these banks is either provision of greater overall bank credit flows or improved financing of small and medium enterprises. However, this approach ignores that GOBs are also expected to help areas that are underdeveloped and to fund socially desirable projects. As a result, aggregate-level analysis may underestimate the actual impact of GOBs in the domestic market. With this study, we aim to fill the gap in the literature by analyzing the impact of bank credits at the regional level. To the best of our knowledge, this is the first paper that examines the economic significance on local economies of credit provided by banks with different ownership types.

Using the panel data of Turkish provinces over the period 1992-2006, we test empirically whether bank credits fostered regional economic growth, especially in the poor provinces.[2] In other words, we examine whether the existence of GOBs in Turkey can be explained by the development or political view. More precisely, we try to answer the following questions: Does private and GOB credits improve per capita GDP growth at the provincial level? Is there significant difference between the effects of private and GOB loans on regional output growth? Do the impacts on growth of credits provided by government-owned and private banks differ between less- and more-developed provinces? Is there any significant change in the effects of bank credits on local growth in provinces that have the political support of the governing party?

Turkey is an interesting country to examine the relationship between GOBs and regional growth. First, the banking sector constitutes a significant part of the financial sector in Turkey. Banking and financial sectors are used interchangeably. Second, despite the

extensive privatization efforts, GOBs have retained their prominent role in the banking sector. Currently, three GOBs operate in Turkey and they control almost one-third of the assets of the banking sector. The Turkish government has been actively pursuing the use of government-owned commercial banks to aid specific developmental mandates. The purpose of these banks are to carry out certain specialized functions such as advancing credit to selected regions and sectors that have scarce capital.[3] Third, Turkey still has the highest regional disparity in GDP per capita among the thirty OECD countries (OECD, 2007). The findings of this study on the importance of GOBs on regional growth will have important policy implications not only for Turkey, but also for other developing countries where GOBs operate pervasively.

Our findings seem to be consistent with the political view. We find that in general, credits by GOBs do not improve the well-being of the Turkish provinces significantly. Yet, their credits have a significant impact in increasing the per capita GDP growth in the less-developed provinces that are advocates of the ruling party. Unlike GOB credits, private bank credits increase the income levels of Turkish provinces significantly, regardless of their development level or the advocacy of the local administration to the central government. Since Turkish GOBs are found to improve the well-being of individuals only in advocate provinces, our findings suggest that if the remaining GOBs were to act like private banks, they might provide credits not for political reasons, especially in non-advocate provinces, and they might improve the well-being of individuals in all Turkish provinces.

The organization of the paper is as follows: In Section 2, we present recent literature on the impact of GOBs on economic growth. The Turkish banking industry is summarized in Section 3. Section 4

presents the empirical model and the data. The empirical results are interpreted in Section 5 and the paper is concluded in Section 6.

2. LITERATURE REVIEW

In the 1990s, government ownership of banks was heavy and pervasive across the globe (La Porta, Lopez-de-Silanes and Shleifer, 2002). In developing countries, compelling amounts of the largest banks' assets were controlled by the government (Levy-Yeyati, Micco and Panizza, 2004). Government banks hold significant shares in the banking industry in Europe as well. Munchau (2006) notes that in France, about two-thirds of the banking system is owned by government. In Germany, that proportion increases to about 75%. In Spain, the public sector is still a dominant player among savings banks (cajas).

Theoretical objections to government ownership of banks or market failure in banking have been defended by the existence of large positive externalities in favor of government-bank ownership: poverty alleviation, financial development and special focus on companies and individuals who might not be creditworthy. However, the empirical literature analyzing the relationship between GOBs and growth generally supports the political view explanation: their prevalence is negatively correlated with economic growth and hinders financial development. For example, the study that uses a panel of 92 countries reports that government ownership[4] is larger in countries with low levels of per capita income, underdeveloped financial systems and lower productivity growth (La Porta, Lopez-de-Silanes and Shleifer, 2002). Moreover, government ownership of banks is found to reduce economic growth and financial development, controlling for initial per capita income and initial financial development. Similarly, Berger, Hasan and Klapper (2004) find that as the market share of the GOBs

increases, the GDP growth rate in developing countries declines significantly. In another study, Beck, Demirguc-Kunt and Levine (2007) examine a sample of 72 developed and developing countries and find that GOBs lower private credits and do not reduce inequality and poverty in these countries.

In the cross-country analysis, poor performance of the GOBs is explained by the possible control by politicians on the management of these banks to pursue private interests. There are few studies in the literature that examine the political motivations behind the lending behavior of GOBs. Sapienza (2004) examines banks in Italy and finds that GOBs charge lower interest rates than privately owned banks. On average, the difference was about 44 basis points. She reports that GOBs favored large firms in general and firms located in the distressed areas in southern Italy, where political patronage is more widespread. Moreover, she presents evidence that the party affiliation of the chairperson of the GOB has a positive impact on the interest rate discount given by the bank in the provinces where the associated party is stronger. Similar findings are reported in Japan. The results of a study by Imai (2009) suggest that the members of the ruling Liberal Democratic Party used GOB loans for political purposes.

There are two studies that examine the lending behavior of GOBs in developing economies. Khwaja and Mian (2005) present evidence that GOBs in Pakistan provide loans to high-risk borrowers with political connections. They estimate that the cost of this lending behavior is 0.3% to 1.9% of the GDP every year. As another example, Cole (2009) reports that although GOBs provide 5% to 10% more credits during election years in India, they were less likely to be repaid than in non-election years. Moreover, their credits were not found to affect agricultural output significantly.

Overall, it is documented in the literature that at the aggregate level, economic growth and government ownership of banks are negatively related. However, none of these studies examines this relationship at the regional level.

3. BANKING IN TURKEY

The banking sector constitutes a large part of the Turkish financial system. Although banks are involved in every aspect of financial activity in the country and have been responsible for the expansion of the financial system, the size of the banking sector is relatively small in Turkey compared to developed economies. In 2006, the ratio of bank assets to the nominal GDP was only 86.7%.[5]

There were 46 banks operating in Turkey at the end of 2006 (Panel A, Table 1). The Turkish banking sector is comprised of deposit banks and investment and development banks. The investment and development banks have a small share in the banking sector (e.g. 3.16% in 2006) and engage in services such as trading in goods, real estate or stock markets or to performing financial leasing activities. Foreign banks hold a small portion of the system in Turkey compared to other developing economies. However, structural reforms and Turkey's EU accession prospect have attracted European and other foreign banks to invest in the Turkish banking system since 2005, and their share has increased significantly in recent years, i.e., from 5% in 2004 to 12% in 2006 (see Table 2).

INSERT TABLE 1 HERE

Among the domestic deposit banks, three are government-owned and 14 are private. During the period between 1990 and 2006, the system expanded rapidly but ultimately underwent substantial consolidation,

shrinking from 79 banks in 2000 to 46 in 2006. The number of GOBs decreased mainly because of privatization efforts and the decline in the number of the private banks can be explained by the failure of seventeen banks during the major banking and liquidity crisis in the 1999-2001 period.

INSERT TABLE 2 HERE

Compared to other countries, Turkey has few banks. They operate through their branches distributed throughout the country, a system called branch banking. There are no local or regional banks. All the private banks have their headquarters in Istanbul (the financial capital) and all the GOBs are headquartered in Ankara (the country's capital). With the consolidation of the banking system (particularly among mid-size private banks) and the downsizing of GOBs after the crisis in 2001, the number of bank branches declined from 7,837 in 2000 to 6,802 in 2006.

Neither the branches of GOBs and nor those of private banks are distributed uniformly in Turkey. The effect of uneven development within Turkey manifested in the absolute dominance of the three main provinces, Istanbul, Ankara and Izmir. These provinces collected 63% of the deposits and received 67% of the credits granted in 2006. As seen from Panel B, Table 1, 47.5% of all bank branches were located in these provinces in 2006. Istanbul continues to have the highest share, with 30% of all bank branches and 34% of private bank branches in 2006. During the 1990-2006 period, on average, one-fourth of all bank branches were located in Istanbul. Moreover, this province holds more than 10% of GOB branches.

The three types of deposit banks have different characteristics. Table 2 shows some characteristics of the government-owned, private and

foreign deposit banks operating in Turkey in 1990 and 2006. It is observed that the profitability of private banks is lower than the profitability of GOBs in 2006. The high return on assets ratio of GOBs indicates that these banks may be acting as profit seekers. Vakifbank, one of the GOBs, has been publicly traded on the Istanbul Stock Exchange since 1987 and the government holds almost 75% of its shares. It can be considered a private profit-seeking deposit bank. Since the 2001 crisis, the other two large GOBs have become much more efficient in expectation of privatization. On the other hand, core earnings of both private and foreign banks have been slightly dampened due to the increased competition in the banking sector.

With Turkey's rapid loan growth and risky operating environment, the capitalization ratio can be considered to be only adequate for the three different ownership types of banks in Turkey. Their capitalization ratio has increased over the period 1990-2006 and they have held fewer non-performing loans in the 2000s, compared to the 1990s. Unexpectedly, GOBs held fewer non-performing loans than private and foreign banks did in 2006. The liquidity of the Turkish banking sector is also considered to be satisfactory, since the removal of the short-term financing needs of government in 2001. GOBs have more liquid assets than private and foreign banks. In fact, after the establishment of the autonomous Banking Regulatory and Supervision Authority in 2000, the financial performance of banks has improved.

Since the early 1990s, private deposit banks have dominated Turkey's banking sector. Currently, more than half the assets in the banking sector (54.8%) are held by private deposit banks. Moreover, their share in the provision of banking sector loans and in the collection of deposits reached more than 50% in 2006. In comparison, GOBs hold 35.7% of bank deposits, and their involvement in the loan market has declined considerably since the 1990s.

Foreign banks have increased their participation in the Turkish banking system since 2005 by purchasing some domestic banks and increasing the number of branches. Consequent to the horizontal mergers and maintenance of networks, their share in the deposit and the loan markets increased to 12% and 15.3%, respectively.

Unlike GOBs, both private and foreign banks have increased their capacity over time by increasing their personnel and number of branches. The significant loss of capacity, i.e., decline in personnel and personnel per branch in GOBs can be explained by restructuring/downsizing efforts by the government after the financial crisis in 2001. Because of the consolidation of some GOBs, the number of branches per bank has increased. Nevertheless, holding almost one-third of the total assets, GOBs have retained their significant presence in the banking sector.

4. EMPIRICAL MODEL AND DATA

(a) *Empirical Model*

The following fixed effects model is used to assess the impact of government-owned and private bank credits on economic growth at the province level in Turkey over the period 1992-2006 (Model I):

$$Y_{it} = \alpha_0 + \sum_{i=1}^{80} \beta_i X_i + \alpha_1 GOB_{it} + \alpha_2 PRIVATE_{it} + \alpha_3 CONTROL_{it} + u_{it} \ ,$$

where Y_{it} is the growth rate in real GDP per capita in province i in year t. X_i is a vector of dummy variables representing 80 provinces in Turkey. GOB_{it} and $PRIVATE_{it}$ represent credits provided by government-owned banks and private banks to province i in year t, respectively. The natural logarithm of per capita real credits is used in the estimations.[6] Private bank credits are expected to have a positive

effect on provincial growth. If the development view is correct, GOB credits are expected to improve the local development significantly. On the other hand, if the political view is correct, it is expected that the impact of GOB credits on regional income growth is either insignificant or negative. In Turkey, the political influence on these banks is observed with the appointment of their chairpersons and top executives; they are determined by the government.

Recent anecdotal evidence shows how GOBs in Turkey were involved in a loan transaction because of political reasons and suggests that the political view might be supported in our analysis. In 2007, two GOBs gave a $750 million loan to the new owner of Turkey's second-largest media conglomerate, who is close to the prime minister. The credits from the GOBs was given three days before the payment deadline at a below-market interest rate, after private banks both in Turkey and abroad had turned him down. Birch (2008) reported that, "The loan provided by GOBs was far from cheap; the 10-year financing with three years of non-payment was priced at the LIBOR plus 485 basis points."

CONTROL represents the vector of the control variables that might affect per capita GDP growth in the provinces. These variables include initial GDP per capita (GDP_{-1}), public investments (*PUBLIC INVESTMENT*), urban population (*URBANIZATION*), human capital in the province (*SCHOOLING*), physical location of the province (*DISTANCE*), and current state of the domestic economy (*CRISIS*).

Public investments are measured by the natural logarithm of real public investments per capita in a province. It is hypothesized that per capita provincial GDP grows by the increase in public investments per capita. Similarly, urban population and human capital are expected to have positive impacts on the growth rate of provincial per

capita GDP. The urbanization rate is measured as the proportion of population that resides in the urban area of the province. Because primary and secondary education is compulsory in Turkey, the number of high school students per high school teacher is used as a measure of schooling or human capital. We use a dummy variable for crisis periods to incorporate the impact of general downturns of the domestic economy on provincial markets. It is expected that during crisis periods, the growth rate of provincial per capita GDPs decreases. Turkey experienced a short-duration liquidity crisis in 1994 and a long-duration financial crisis during the 1999-2001 period. In 1994, the real GDP per capita declined by 4.7%. During the banking and liquidity crises, the growth rate in real GDP per capita fluctuated. In 1999, it was -3.37%, then it increased by 6.77% in 2000 and declined by 5.67% in 2001. The 1999-2001 crisis resulted in the failure or consolidation of one government-owned and seventeen private banks. In the empirical model, the *CRISIS* dummy variable takes a value of 1 in 1994, 1999, 2000 and 2001, and 0 otherwise.

In a regionally segmented banking system, banks are expected to turn local funds into productive investment opportunities that will increase local output. However, in a centrally concentrated banking system, as in Turkey, intermediation of local savings through local branches creates a pool of funds at headquarters, and regional loan demands can be satisfied from this pool without considering the regional deposit bases. In Turkey, all headquarters of the private banks are located in Istanbul (*Ist*) and all headquarters of the GOBs are located in Ankara (*Ank*). As the distance from headquarters increases, it may be more difficult to find financing through the banking system (Berger and Udell, 2002; Ozyildirim and Onder, 2008; Jimenez, Salas-Fumas, and Saurina, 2009). However, banks may be physically closer to potential borrowers if they have branches in local markets. Thus, in the empirical model, it is hypothesized that it is not a province's physical

distance from headquarters, but its functional distance from headquarters that may affect local growth. To compute functional distance (see Alessandrini, Croci and Zazzaro, 2005), the physical distance from headquarters is adjusted with the number of branches in a province:

$$DISTANCE_i = \frac{[B_G \ln(1 + km_{i,Ank})] + [B_P \ln(1 + km_{i,Ist})]}{B_G + B_P},$$

where B_G and B_P are the number of government-owned and private bank branches located in province *i*. $km_{i,Ank}$ and $km_{i,Ist}$ are the distance in kilometers between the province *i* and Ankara and between the province *i* and Istanbul, respectively.

In Turkey, municipalities are the local administrative units and are highly dependent on the central government for their income.[7] They obtain their revenues from local resources such as municipal taxes, user charges and other revenues. About 75% of local government revenues are obtained through transfers from the central government. In addition to these transfers, municipalities can receive loans from the central government or from private credit markets with a treasury reimbursement guarantee. It can be argued that if the local administrator of the province, its mayor, belongs to the ruling party, it may be easier to get credits from GOBs. To test whether credits provided by GOBs cause adverse selection problems in advocate provinces, a dummy variable *ADVOCATE*, and two interaction variables with government-owned and private bank credits (*GOB* and *PRIVATE)* are created. *ADVOCATE* takes a value of 1 for the provinces where the mayor is affiliated with the ruling party and 0 otherwise.

In order to test the hypotheses about advocate provinces, the following fixed effects model is estimated (Model II):

$$Y_{it} = \alpha_0 + \sum_{i=1}^{80} \beta_i X_i + \alpha_1 GOB_{it} + \alpha_2 PRIVATE_{it} + \gamma_0 ADVOCATE_{it} +$$
$$\gamma_1 ADVOCATE_{it} * GOB_{it} + \gamma_2 ADVOCATE_{it} * PRIVATE_{it} + \alpha_3 CONTROL_{it} + u_{it},$$

where γ_1 and γ_2 are the coefficients on the interaction variables between bank credits and advocate provinces. These coefficients indicate the changes in the impact of government-owned and private bank credit, respectively, on the growth rate of per capita GDP in advocate provinces. If the political view is valid, it is hypothesized that GOB credits to advocate and non-advocate provinces do not improve the local well-being significantly.

Since 1968, as part of Turkey's planned development strategies, provinces have been grouped as priority and non-priority provinces depending on their development level. The list of priority provinces has been published annually in the program of the Council of Ministers on the implementation, coordination and monitoring of public investment program. At the beginning, there were 23 provinces classified as priority development provinces but since 1998, that number has increased to 50. The government provides direct and indirect support for the development of these provinces, such as direct public investments and subsidies to private enterprises investing there. The idea is to increase the growth rate in these provinces more than the others in order to reduce the disparity among provinces.

In order to analyze whether government-owned and private bank credits affect the growth rates in the priority and non-priority provinces differently, we estimate our models for these two groups of provinces separately. If the development view is valid in explaining the existence of GOBs, the impact of GOB credits on growth is expected to be positive and significant. Moreover, if GOBs provide credits to less-developed areas and to socially valuable projects, then the coefficient of the *GOB* variable is expected to be greater that the coefficient of the *PRIVATE* variable especially in less-developed provinces. However, government-owned and private banks may make similar contributions to non-priority provinces. Also, based on the political view, it is

hypothesized that the effect of GOB credits on the growth rate of provinces is expected to be higher in advocate provinces than in non-advocate ones. On the other hand, the impact of private bank credits is not expected to be significantly different between advocate and non-advocate provinces.

(b) Data

A panel data set is constructed by employing annual data on provincial characteristics and credits provided by government-owned and private banks in the provinces for the period between 1992 and 2006. There were 67 provinces in Turkey at the beginning of the sample period, and 14 new provinces, formed from districts of existing provinces, were established during the sample period. In the estimations, old provinces were excluded from the sample in the year when new provinces were formed because of the artificial decline in the GDP level of the old provinces in that year.

All data about banking activities are obtained from the Turkish Banking Association. The other variables are taken from the Turkish Statistics Institute and the Ministry of Finance. Table 3 shows the mean values of bank credits and provincial characteristics for the whole sample as well as for the priority and non-priority provinces. The definitions and the descriptive statistics of all variables are presented in the appendix.

INSERT TABLE 3 HERE

During the sample period, the average annual growth rate of real GDP in Turkish provinces is 3.57%. Since population growth rate is still positive at a rate of 0.38%, the annual growth rate in GDP per capita is slightly lower: 3.21%. Although the growth rate in GDP is higher in

non-priority provinces than priority provinces, because of the migration from priority to non-priority provinces, real per capita GDP growth rate is lower in the non-priority provinces. The annual population growth rate was -0.11% in the priority provinces, whereas it was 1.18% in the non-priority provinces.

The notable difference between priority and non-priority provinces is observed in terms of real GDP levels. In non-priority provinces, the average real GDP per capita is almost twice as high as that in priority provinces (2,067 Turkish Lira (TL) versus 1,073 TL). Because the priority provinces are less populated, the average real GDP is almost six times higher in the non-priority provinces (502 million TL versus 3,012 million TL).

When per capita government-owned and private bank credits over the sample period are compared, it is observed that private bank credits are used more than GOB credits in Turkish provinces. On average, per capita real private and GOB credits were 369.6 TL and 243.8 TL, respectively. The amount of credits granted in Turkish provinces is very low compared to its real GDP level.

Significant differences between the priority and non-priority provinces are also observed in terms of lending activities. On average, non-priority provinces used three times more banks credits per capita than priority provinces. Moreover, per capita credits provided by private banks in the non-priority provinces were 5.7 times higher than those provided in the priority provinces. However, the difference between priority and non-priority provinces is lower in terms of GOB credit. On average, private banks granted 757.4 TL per capita in non-priority provinces but only 133.6 TL in priority provinces. On the other hand, GOBs provided 312 TL in the non-priority provinces and 202.3 TL in priority provinces. However, in terms of all bank credits, the per capita

real bank credits are three times higher than those granted in priority provinces (335.8 TL in priority provinces versus 1,069.5 TL in non-priority provinces).

Real per capita public investments were, on average, 80.4 TL during the sample period. However, they vary significantly between the priority and non-priority provinces: In monetary terms, per capita real public investment was 92.3 TL in non-priority provinces and 73.1 TL in priority provinces. The population growth of non-priority provinces, mostly due to migration from priority regions, caused a growing amount of public investments in the non-priority regions as well. According to the migration statistics, around 70% of the migrating population has been choosing destinations in the non-priority regions.

On average, more than half the population lives in the urban areas of the Turkish provinces. The average urbanization rate is 55.42% during our sample period. The non-priority provinces have more urban population than priority provinces,[8] and are becoming more populated because of continuing migration. The number and quality of schools, hospitals, job opportunities, stable economic and social conditions in these provinces and several other factors likely cause this mobility. A negative population growth rate in the priority regions (-0.11%), with an average fertility rate of 3.32%, indicates a significant amount of migrating population from priority provinces. On the other hand, the non-priority provinces had a growth rate of 1.18%, despite a 2.11% fertility rate. In terms of schooling, on average, high school teachers have more than one additional student in their classes in the priority provinces compared to the non-priority provinces (17.8 versus 16.5 students per high-school teacher, respectively (Table 3)).

During the sample period, the majority of provinces are advocate provinces. The percentage of advocate provinces among priority

provinces is lower than the advocate provinces among non-priority provinces. The non-priority provinces are found to be closer to the banks' headquarters than the priority provinces. In addition to physical distance, the priority provinces are peripheral to the headquarters because they have fewer branches. The average number of branches in non-priority provinces is 163.5 but is only 29 in priority ones.

5. EMPIRICAL RESULTS

The results of the fixed effects model (Model I) are presented in Table 4 (Panel A). It is found that credits provided by both government-owned and private banks have a positive impact on the growth rate of GDP per capita in Turkish provinces, controlling for factors that might affect the local growth rate, such as public investments, urbanization, schooling and initial GDP per capita. However, only private bank credits are found to increase the provincial growth rate significantly. At the mean growth rate in real GDP per capita of 3.21%, a one-percent increase in private bank credits will increase the provincial growth rate by 0.44%,[9] whereas a one-percent increase in GOB credits per capita will have almost no effect, increasing the growth rate by only 0.02% (Panel B). The initial findings at the overall level seem to support the political view rather than the development view because GOB credits do not significantly improve the well-being of individuals in Turkish provinces but private bank credits do.

INSERT TABLE 4 HERE

When the impact of bank credits on the priority and non-priority provinces is examined separately, similar effects are observed. It is found that only private bank credits improve the growth rates of all provinces significantly, regardless of their development level. When we

evaluate the impact of private bank credits at the mean growth rates, it is found that a one-percent increase in per capita real private bank credits will improve the growth rate of real GDP per capita by 0.30% in the priority provinces and by 0.76% in the non-priority provinces. In other words, a one-percent increase in private credits will improve the growth rate from 3.41% to 3.70% in the priority provinces, and from 2.87% to 3.63% in the non-priority provinces. On the other hand, per capita GOB credits are not found to have any significant impact on local income level.

Although the underlying reason behind the establishment of GOBs is to improve income levels in less-developed areas by providing preferential loans to the firms in those areas, GOBs do not serve this purpose during our sample period. Our findings suggest that GOBs neither improve the well-being of provinces nor reduce the income disparity among the Turkish provinces. On the other hand, while having only 15.9% of their branches in the less-developed priority provinces, private banks are found to be superior in terms of identifying and financing productive and growth-potential projects and as a result, improving income levels of individuals in all provinces regardless of their development levels.

The impacts of the control variables on local growth are as expected. For example, public investments and urbanization significantly improve growth rates in all provinces. In terms of economic significance, the impact of public investments and urbanization on local growth is more than the impact of bank credits. During 1992-2006 period, crisis years caused a significant loss of growth in the per capita GDPs in Turkish provinces.

Similar to the results from all provinces, urbanization has a positive and significant impact on the growth of per capita GDPs both in the

priority and non-priority provinces. It is found that the contribution of public investments is significant in the priority provinces, but not significant in the non-priority provinces. One explanation is that public investments in the developed non-priority provinces may be in health and education rather than infrastructure and therefore, their effect may not be observed immediately (see Rodriguez-Oreggia and Rodriguez-Pose (2004) for similar findings in the developed regions of Mexico).

The increase in high school student enrollment per teacher has no significant impact on the growth of the per capita GDPs of the priority provinces. In Turkey, the number of high school students per teacher is still below 20 (see Table 3). An increase in this number would not indicate the declining quality of human capital but the increasing number of students attending high school in these areas, thus increasing the availability of human capital in less-developed regions. Nevertheless, in the non-priority provinces, schooling has a negative and significant impact on the provincial per capita income. These results suggest that as the number of students per high school teacher decreases, the quality of schooling increases and as a result, the income level increases in the non-priority provinces.

In both priority and non-priority provinces, increased geographical distance of a province from the banking-decision centers has a significant and positive impact on the growth rate of per capita real GDP. Since the distance is measured as a functional distance and adjusted with the number of branches in a province, in the interpretation of the impact of the functional distance on local economy, we use the hypothesis that functionally distant banks specialize in lending to more transparent borrowers, irrespective of the level of experience accumulated by the bank in the local market (see Jimenez, Salas-Fumas and Saurina, 2009). Depending on the physical

distance of a province from the banks' headquarters, increasing the networks of banks, especially in the less-developed provinces, may indicate growing profitable and transparent opportunities for banks in these regions. This finding does not suggest causation from increasing bank concentration to local growth, but rather a positive relation between increasing networks of banks and the growth in the provincial per capita GDPs, especially in the less-developed provinces where both private and GOBs have small numbers of branches (see Table 3).

Table 5 shows the results of the second model (Model II), where the interaction variables between bank credits and advocate provinces are included. In these estimations, the political affiliation of local administrators to the ruling party is controlled. Since the local authorities in Turkey are not invested with fiscal powers, the political affiliation of the mayor to the ruling party is hypothesized to be important in the development of provinces. It is found that even though GOB credits do not significantly influence well-being in non-advocate provinces, their credits are found to improve the GDP per capita of the provinces that are governed by advocate local administration in all provinces. These results suggest that although GOBs do not improve the well-being of all provinces significantly, if the mayor of the province is from the ruling party, the mayor may be part of the identification of growth-related projects and may affect the local growth positively. In theory, banks headquartered at a substantial distance from potential customers are less likely to use soft, locally based relationship information in loan-making decisions (Berger and Udell, 2002). However, through political contacts, local politicians may lessen informational distances (at least in GOBs) for profitable local projects. Nevertheless, this finding can also be interpreted as another indication of political influence on GOBs. In order to keep the political power of the ruling party, management of GOBs may exert their

expertise on identifying growth-related projects in the advocate provinces.

INSERT TABLE 5 HERE

The insignificant impact of GOB credits on non-advocate provinces suggests that GOBs might be distributing their credits for political reasons. They may be favoring firms or projects in order to increase the political power of the incumbent government in these non-advocate provinces. As shown by Khwaja and Mian (2005) for Pakistan, the politicization of GOBs allows politicians to exert influence and lead these banks to make bad loans. Also, Sapienze (2004) provided evidence from Italy that if the political party in the area where the firm is borrowing is stronger, the lower the interest rates charged by the GOBs. While her data do not allow her to directly link borrowing firms to politicians, evidence indicates political patronage is stronger in regions where the party that the bank chairperson is affiliated with is in power.

We find that the positive and significant impact of private bank credits on local growth does not change significantly in the advocate provinces. Table 5 - Panel B presents the estimated impact of a one-percent increase in per capita bank credits on the growth rate of per capita real GDP in provinces classified according to their development level and advocacy. A one-percent increase in per capita real GOB credits is found to decrease the growth rate in non-advocate provinces by 0.03%, whereas the impact of private bank credits is a 0.76% increase in the per capita real GDP growth rate of these provinces.

When the impact of bank credits on priority and non-priority provinces are compared, our results are consistent with our previous findings. Private bank credits significantly improve the well-being of all

provinces, regardless of their development level. On the other hand, the only significant impact of GOB credits is observed in priority and advocate provinces. So, GOBs are found to benefit only the priority provinces that are politically closer to the incumbent government. Otherwise, their credits do not seem to be used to improve economic well-being in the other provinces. These findings support the political view at the provincial level in Turkey, i.e., GOBs provide credits for political reasons rather than supporting projects that will increase real per capita GDPs in already developed provinces.

In priority provinces, the impact of private banks is higher than the impact of GOBs in both advocate and non-advocate provinces. It is estimated that the increase in growth rate of real GDP per capita in non-advocate provinces because of the increase in private bank credits is almost nine times higher than the increase in growth rate by the same amount of increase in GOB credits (0.04% versus 0.35%). On the other hand, among advocate provinces, the impact of private bank credits in priority provinces is higher than its impact in non-priority provinces. It is found that a one-percent increase in private bank credits per capita significantly improves per capita GDP growth rate by 1.26% in priority provinces and 0.72% in non-priority provinces.

If the mayor of the province belongs to the ruling party, that province has a higher growth rate than the other provinces. Finally, the other control variables such as public investments, urbanization, schooling and functional distance are found to have a similar impact, as observed with Model I.

6. CONCLUSION

GOBs are prevalent in developing countries as they are meant to fund socially desirable projects, alleviate poverty and focus on companies,

individuals or areas that might not be considered creditworthy by private banks. The existing empirical studies, however, do not support any of these roles of GOBs. Rather, the studies are consistent with the "political view" that GOBs direct scarce resources to promote private interests, in particular favoring politically desirable projects. All previous empirical studies use the share of GOBs in their domestic markets at the national level. To complement this literature, this paper focuses on the impact of credits provided by government-owned and private banks on per capita real GDP growth at the provincial level during 1992-2006 period in Turkey. Despite their dominance of the country, private banks in Turkey do not provide the same regional coverage as GOBs and do not provide liquidity to all sectors of the economy. Moreover, regional income disparity is a long-term problem that could be solved by preferential credits from GOBs.

This paper's main finding is that GOBs are found to benefit significantly only those provinces that are categorized as less developed and are politically closer to the incumbent government. They are found to have no significant effect in developed, non-priority provinces even in the advocate ones**.** These findings support that the "political view" exists in Turkey. On the other hand, credits from private banks are found to have a positive impact on the real per capita GDPs of provinces, regardless of their development level or the political affiliation of their local administrators. These findings suggest that GOBs do not use their resources to equalize the level of development across Turkish provinces.

In general, increasing urbanization and public investments contribute to improving local per capita income. Moreover, concentration of banks through branches or increasing functional distance of a province from bank headquarters has a positive and significant impact on provincial well-being. Also, political affiliation of local

administrators with the incumbent government is found to be advantageous for real per capita growth in all provinces.

Our results suggest that, because of patronage issues, GOBs do not achieve their apparent objectives of improving growth rates and reducing disparity among provinces. As it is difficult to completely de-politicize GOBs in developing countries with relatively weak institutions, one alternative to the problem might be to privatize these banks. It is known that former GOBs perform better in terms of profitability and efficiency after they have been privatized (Clarke, Cull and Shirley, 2005 and Omran, 2007).

The privatization of GOBs may not immediately alleviate existing market failures in the local markets. Another solution may be to replace GOBs with mutual banks or cooperative banks in the less-developed regions of Turkey since mutual banks in Europe have better loan quality and lower asset risk than both private and GOBs (Iannotta, Nocera and Sironi, 2007). More recently, Gutierrez (2008) points out that in Italy, after recent merger activity, cooperative banks turned into cooperative groups and increased their presence in the provision of loans to certain market segments, particularly small and medium enterprises. Of course, cooperative banks may need to be innovative in local development finance while building profitable relationships with entrepreneurs and farmers in less-developed regions.

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APPENDIX

Variables	Description	Mean	Standard Deviation	Minimum	Maximum
GOB	Natural logarithm of real credits per capita provided by government-owned banks	0.2337	0.4129	0.0000	5.4533
PRIVATE	Natural logarithm of real credits per capita provided by private banks	0.3522	0.7959	0.0000	10.1681
PUBLIC INVESTMENT	Natural logarithm of real public investments per capita	0.0812	0.1025	0.0018	1.1698
URBANIZATION	Ratio of urban population to total population	0.5504	0.1286	0.2084	0.9889
SCHOOLING	Natural logarithm of number of high school students per high school teachers	2.7960	0.2843	1.5226	3.9318
DISTANCE	Distance to bank headquarters weighted by number of branches	6.2488	0.8283	1.0475	7.3545
CRISIS	Dummy variable, has a value of 1 for 1994, 1999, 2000, 2001; 0 otherwise	0.2680	0.4431	0.0000	1.0000
ADVOCATE	Dummy variable, has a value of 1 in provinces where the mayor is from the ruling political party	0.5859	0.4928	0.0000	1.0000

Table 1 – Networks of Banks in Turkey in 1990 and 2006

	Panel A – Total Number of Banks			*Branches*		
	1990	*2006*	*1990-2006*	*1990*	*2006*	*1990-2006*
Deposit Banks						
Government-owned Banks	8	3	4.65	2967	2134	2656
Private Banks	25	14	26.82	3443	3557	3554
Foreign Banks*	23	15	16.65	113	1066	219
Non-Deposit Banks						
Investment and Development Banks	10	13	13.47	17	44	22
All Banks	66	46	64.18	6540	6802	6175

	Panel B – Shares of Branches (%) in Istanbul			*Three Big Provinces* **		
	1990	*2006*	*1990-2006*	*1990*	*2006*	*1990-2006*
Deposit Banks						
Government-owned Banks	11.8	15.2	12.6	26.2	31.7	28.0
Private Banks	26.7	33.9	33.6	44.3	52.6	51.3
Foreign Banks	47.8	45.3	50.3	76.1	62.2	72.7
Non-Deposit Banks						
Investment and Development Banks	47.1	38.6	55.8	76.5	65.9	85.5
All Banks	20.3	29.8	25.8	36.6	47.5	42.6
Number of All Branches	1333	2031	1700.3	2403	3240	2800.9

Notes: * In 2006, seven foreign banks were established and operating in Turkey, whereas 16 foreign banks, established abroad, were only allowed to operate through opening their branches in Turkey. Foreign banks increased their networks recently by purchasing several mid-sized private banks.
** The three provinces are Istanbul, Ankara and Izmir.

Source: Turkish Banking Association.

Table 2. Deposit Bank Characteristics According to Ownership Type.

	Government-owned Banks		Private Banks		Foreign Banks	
	1990	2006	1990	2006	1990	2006
Return on Total Assets (%)	1.81	2.60	2.85	1.75	3.27	2.46
Capital-to-Total Assets (%)	9.88	10.36	8.83	10.39	8.92	11.99
Non-performing Loans-to-Loans (%)	1.70	0.16	0.52	0.44	0.65	0.28
Liquid Assets-to-Total Assets (%)	29.02	44.35	39.52	37.74	42.62	38.42
Loans-to-Total Assets (%)	45.79	32.83	42.85	48.08	47.59	56.29
Share in Total Assets (%)	45.21	29.57	42.32	54.78	3.42	12.24
Share in Total Loans (%)	45.13	21.58	39.53	58.56	3.54	15.3
Share in Total Deposits (%)	48.51	35.70	49.10	52.32	2.38	11.96
Assets per Branch (000TL)	26585	66711	21443	74153	29942	55339
Deposits per Branch (000TL)	15584	51970	13594	45695	11420	34907
Branches per Bank	370.88	716.33	137.72	255.86	8.86	71.47
Number of Personnel	80825	39223	68145	73220	3012	25794
Personnel per Branch	27.24	18.00	19.79	20.44	15.14	24.06
Number of Branches	2967	2149	3443	3582	199	1072
Number of Banks	8	3	25	14	23	15

Note: TL denotes Turkish Lira. All monetary values are expressed in terms of their value in 2006.
Source: Turkish Banking Association.

Table 3. The Mean Values of Some Characteristics of Turkish Provinces in the Sample Period 1992-2006.

	Provinces		
	All	Priority	Non-priority
Real Outputs			
Growth in real GDP (%)	3.57	3.31	3.99
Growth in real GDP per capita (%)	3.21	3.41	2.87
Real GDP (in million TL)	1,452	502	3,012
Real GDP per capita (TL)	1,449	1,073	2,067
Banking Variables			
Bank Credits per capita (TL)	613.50	335.80	1,069.50
GOB* Credits per capita (TL)	243.80	202.30	312.10
Private Bank Credits per capita (TL)	369.60	133.60	757.40
Other Variables			
Public Investments per capita (TL)	80.40	73.10	92.30
Urban Population Rate (%)	55.42	51.95	61.13
Schooling (number of students)	17.27	17.81	16.45
Population (in thousands)	803	478	1,331
Growth in Population (%)	0.38	-0.11	1.18
Mayor is Politically Affiliated** (%)	58.59	56.72	61.59
Functional Distance	6.2488	6.5188	5.8101
Number of Branches of All Banks	80.2	29.0	163.5
Number of GOB Branches	33.8	18.2	59.2
Number of Private Bank Branches	43.5	10.5	97.3
Number of Observations	1105	687	418

Notes: All monetary values are expressed in terms of their value in 2006, when the average exchange rate was US $1=1.41TL.

* GOB stands for government-owned banks.

** The elected mayor is politically affiliated with the incumbent government.

Sources: Turkish Banking Association, Turkish Statistical Institute and Ministry of Finance.

Table 4. Empirical Results of Fixed Effects Model for All, Priority and Non-priority Provinces (Model I).

	All Provinces		Priority Provinces		Non-priority Provinces	
Panel A – Estimated Coefficients						
GOB	0.0006		-0.0004		0.0006	
	(0.0030)		(0.0027)		(0.0042)	
PRIVATE	0.0140	***	0.0103	***	0.0217	***
	(0.0025)		(0.0031)		(0.0058)	
PUBLIC INVESTMENT	0.1166	**	0.2434	***	0.0215	
	(0.0471)		(0.0533)		(0.0364)	
URBANIZATION	0.5570	***	0.6645	***	0.6468	***
	(0.0906)		(0.1154)		(0.1574)	
SCHOOLING	-0.0050		0.0016		-0.0311	*
	(0.0094)		(0.0106)		(0.0176)	
DISTANCE	0.0394		0.2902	***	0.0386	*
	(0.0293)		(0.1020)		(0.0201)	
CRISIS	-0.0855	***	-0.0789	***	-0.0832	***
	(0.0040)		(0.0060)		(0.0053)	
GDP_{-1}	-0.2424	***	-0.2441	***	-0.3316	***
	(0.0237)		(0.0242)		(0.0581)	
α_0	2.9204	***	1.0090		4.3018	***
	(0.3319)		(0.7445)		(0.7125)	
Adjusted R^2	0.4350		0.4195		0.5191	
Number of Observations	1130		685		445	
Number of Provinces (Fixed effects)	80		49		30	
Panel B - Impact of a One-percent Increase in Bank Credits on Growth						
GOB	0.02%		-0.01%		0.02%	
PRIVATE	0.44%		0.30%		0.76%	

Notes: The numbers in parentheses denote standard errors. *, ** and *** show significance at the 10%, 5% and 1% levels respectively. The coefficients of *GOB* and *PRIVATE* are found to be statistically significantly different at the 1% level for all three groups of provinces.

The impact of a one-percent increase in per capita real bank credits is calculated by dividing the coefficient of the *GOB* or *PRIVATE* variable by the mean growth rate of real GDP per capita.

Table 5. Empirical Results of Fixed Effects with Interaction Variables between Advocate and Non-advocate Provinces (Model II).

	All Provinces		Priority Provinces		Non-priority Provinces	
GOB	-0.0005		0.0008		0.0018	
	(0.0030)		(0.0028)		(0.0046)	
*ADVOCATE*GOB*	0.0215	***	0.0292	***	-0.0121	
	(0.0080)		(0.0067)		(0.0114)	
PRIVATE	0.0143	***	0.0068	**	0.0216	***
	(0.0026)		(0.0031)		(0.0059)	
*ADVOCATE*PRIVATE*	-0.0001		0.0480	***	0.0041	**
	(0.0024)		(0.0150)		(0.0020)	
PUBLIC INVESTMENT	0.1213	**	0.2440	***	0.0225	
	(0.0473)		(0.0551)		(0.0360)	
URBANIZATION	0.5809	***	0.6563	***	0.6275	***
	(0.0897)		(0.1012)		(0.1548)	
SCHOOLING	-0.0026		0.0106		-0.0309	*
	(0.0096)		(0.0108)		(0.0180)	
DISTANCE	0.0436		0.2810	***	0.0391	*
	(0.0320)		(0.1075)		(0.0224)	
CRISIS	-0.0832	***	-0.0754	***	-0.0804	***
	(0.0039)		(0.0057)		(0.0054)	
ADVOCATE	0.0085	*	0.0079		0.0084	
	(0.0047)		(0.0072)		(0.0060)	
GDP_{-1}	-0.2639	***	-0.2911	***	-0.3303	***
	(0.0239)		(0.0229)		(0.0565)	
α_0	3.1374	***	1.6692	**	4.2977	***
	(0.2880)		(0.7318)		(0.6904)	
Adjusted R^2	0.4436		0.4448		0.5145	
Number of Observations	1120		680		440	
Number of Provinces (fixed effects)	80		49		30	

Panel B - Impact of a One-percent Increase in Bank Credits on Growth

Non-advocate Provinces			
GOB	-0.03%	0.04%	0.10%
PRIVATE	0.76%	0.35%	1.20%
Advocate Provinces			
GOB	0.52%	0.69%	-0.29%
PRIVATE	0.35%	1.26%	0.72%

Notes: The numbers in parentheses denote standard errors. *, ** and *** show significance at the 10%, 5%, and 1% levels, respectively. The coefficients of *GOB* and *PRIVATE* are found to be statistically significantly different at the 1% level in the estimation with all provinces. They are not found to be significantly different in priority provinces. In non-priority provinces, although the coefficients of interaction variables are not statistically different, the bank coefficients are significantly different.

NOTES

[1] For example, in the mid-1990s, the government controlled about one-fourth of the assets of the largest banks in industrialized countries, and about half of the assets of the banks in developing countries (Levy-Yeyati, Micco and Panizza, 2004). Even though there were massive privatization efforts, government banks still operate in some developed countries, such as Germany, France and Japan, and they have been preserving their involvement especially in countries with less-developed financial systems and less well-functioning institutional structure (Barth, Caprio and Levine, 1999; La Porta, Lopez-de-Silanes and Shleifer, 2002).

[2] In Turkey, provinces are functional regions and include territorial units such as municipalities and villages.

[3] Of the Turkish GOBs, Emlak Bank (1927) was founded as a mortgage and loan bank, Sumerbank (1933) to finance government-owned enterprises, Etibank (1935) to support mining and power supplies, Halk Bank (1938) to provide financing to small and medium enterprises, and Ziraat Bank (1863) to subsidize crop prices and provide loans to small farmers.

[4] La Porta, Lopez-de-Silanes and Shleifer (2002) measure government ownership of banks by using the share of government in the assets of the top 10 banks.

[5] For more information about the development of the Turkish banking system, see Onder and Ozyildirim (2008).

[6]In the finance-growth literature, credit/GDP is used as a measure of financial development. However, in this study, our aim is to measure the impact of bank credit on growth rather than analyzing the impact of financial development on growth. Therefore, we use per capita credits granted by GOBs or private banks at the province level.

[7] The mayor is the chief executive and representative of the municipality. She/he is elected for a term of five years.

[8]In 2006, the urbanization rate was 67% and 56% in non-priority and non-priority provinces, respectively.

[9] In order to examine the economic significance of our findings, the impact of a one-percent increase in credit is calculated by dividing the coefficients of the *GOB* or *PRIVATE* variable by the mean growth rate of per capita real GDP.