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# The Impact of Technological Progress of Turkish Banking Industry on the Sector's Employment

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## ABSTRACT

*The Turkish economy witnessed a significant structural change in all of its industries since the terrifying economic meltdown occurred in 2001. The main objective of that inevitable structural change was to restructure the scattered economy, and accelerate its process of international integration. Thanks to the banking reform conducted within this framework, Turkish banking sector has willingly participated to this change process too. In this study, it is examined how the sector's employment has been affected by the acceleration of foreign direct capital inflows to the sector as a result of the judicial and technological restructuring in Turkish banking industry within this scope. However, thanks to the Turkish banking sector's unique ability to tap into information technologies to the full extent, it was observed that the employment loss in the Turkish banking industry experienced after the economic meltdown in 2001 was first recovered, and then more jobs were created than that of 2001 levels during the following stage. In line with this change, there is also seen an increasing rate of human capital accumulation in the volume of labor-force in this sector.*

**Keywords:** Turkish Banking Industry, Foreign Capital, Technological Progress, Employment

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## ÖZET

### **Türk Bankacılık Sektöründeki Teknolojik İlerlemenin, Sektörün İstihdamına Etkisi**

*Türkiye ekonomisi 2001 yılında meydana gelen ekonomik krizden sonra bütün sektörlerinde yapısal değişime gitmiştir. Bu değişimdeki amaç ekonomiyi yeniden yapılandırmak ve küreselleşme ile bütünleşmesini hızlandırmaktır. Bu çerçevede yapılan bankacılık reformu ile Türk bankacılık sektörü de bu değişim içerisinde yer almıştır. Bu çalışmada; bu değişim çerçevesinde Türk bankacılık sektöründeki hukuki ve teknolojik yapılandırma ile doğrudan yabancı sermayenin sektöre girişinin de hızlanması ile birlikte sektörün istihdamının nasıl etkilendiği incelenmiştir. Türk bankacılık sektörü bilişim teknolojilerini ileri seviyede kullanarak 2001 yılında meydana gelen ekonomik krizden sonra Türk bankacılık sektöründeki istihdam kaybının önce telafi edildiği daha sonra da daha yüksek miktarda istihdam sağlandığı belirlenmiştir. Bu değişim ile birlikte aynı zamanda sektörün istihdamının da beşeri sermaye miktarı yüksek emek arzı miktarında da artışlar gerçekleşmiştir.*

**Anahtar Kelimeler:** *Türk Bankacılık Sektörü, Yabancı Sermaye, Teknolojik İlerleme, İstihdam*

## **1. Introduction**

When compared with the banking industries of other countries, it is obviously seen what a significant competitive advantage has Turkish banking industry gained through the structural reforms conducted in the sector since the economic crisis happened in 2001. Thanks to this competitive advantage, the sector has immediately managed to draw the attention of international capital movements, and there are significant amounts of foreign capital inflows recorded in the sector.

Despite the decisions of retraction taken by international investors in many banking industries around the globe, they have set a target of growth in Turkish banking sector. Though, the most important reason underlying their growth strategy is the technological progress of Turkish banking industry. Moreover, there are created new markets and channels by the valuable contributions of government for the establishment of a legislative regulation and supervision system as well as a technological infrastructure.

The objective of our study is mainly focused to evaluate the impacts of technological progress which is achieved by the banking reform conducted in Turkish banking sector after 2001, on the sector's employment.

## 2. The Technological Progress in Turkish Banking Industry

To gain an economic competitive advantage, the banks operating in this industry consistently need to create innovations in the banking services they offer. And, they can generate those innovations only through technological progresses. However, a technological progress is not possible without the help of infrastructures supplied by telecommunication and information technologies industries. Making the best use of technological progresses, Turkish banking industry has managed to grow its market share and deepen the volume of sector by improving its product range. In other words, to gain a competitive advantage, the players in this sector have been continuously trying to expand both the market and their shares in the growing market by choosing to compete on the basis of product quality not the price of products.

However, the success chance of such an ambitious expansion process largely depends on its sustainability. As a new product launched through an innovation must be responded by a higher level innovation to be offered by other players in the sector in accordance with the requirement of compliance to economic competition rules, the sustainability of innovations should always be maintained. So, the technological progress of Turkish banking industry advances in this direction, and the technological investments are made by adopting that kind of approach. Ultimately, as a result of these investment decisions, the efficiency of sector has significantly improved, and there have accrued new targets and opportunities.

The operations of individual and corporate banking are now conducted more efficiently out of the branches as a result of many developments such as diversification of online internet banking services, increasing use of mobile devices, and rise of latest tech like smart chip, payments, virtual money, and NFC (*Near Field Communication*). In conjunction with the efficiency rise, the banks now can process the transactions faster than ever, and decrease their processing costs. In other words, the number of branches increases, while the area occupied by a banking branch decreases. As the number of branches increases, the number of customers reached by the smaller branches with higher technology rises, and consequently the margins are enhanced through customer-centric digital marketing strategies. Thus, it is unavoidable to implement economies of scale in the sector to meet the need of making business profitably with many small and risky customers through customer-centric marketing strategies in line with the technological progress in Turkish banking industry. Therefore, some instruments like new procedures, agreements, and technological progresses which are all specially designed have great potentials to address this kind of issues ([www.tcmb.gov.tr/yeni/evds/yayin/kitaplar/finansal\\_egitim.pdf](http://www.tcmb.gov.tr/yeni/evds/yayin/kitaplar/finansal_egitim.pdf):01.08.2013).

Turkish banking industry ranks among the world's leading countries in terms of technological progress and technology use. Moreover, it plays a pioneering role in some implementations (*POS-based software and applications*) and in the use of information technologies. But, the most important factor triggering this pioneering

role to be undertaken was the comprehensively well perception of banking private sector about the government's reforms in banking and telecommunication industries conducted after the economic meltdown in 2001. To come out of the crisis stronger, the Turkish private sector has rendered its own banks more competitive and efficient by increasing the volume of technology investments with the help of juridical and technological infrastructures constituted by the reforms. Recently, also the public banks have increased technology investments to successfully compete with the private sector in the industry, and consequently contributed to the growth of sector further.

### 3. Employment Distribution of Turkish Banking Sector

In the Turkish banking industry, it is recorded a significant economic growth rate and a marvelous rise in the volume of employment as economic competition becomes increasingly intensified as a result of the globalization and technological progress. The growth rate and rise in employment have been facilitated by the qualified workforce in parallel with the technological progress. Because a qualified workforce shows itself as a critical factor which creates a competitive advantage, lowers the social costs, realizes the rapid technological changes, and builds a more transparent economic structure for a country in the competition process. Within this framework, the economic efficiency of a country strongly depends on the formation of a qualified workforce and the adoption of new technologies (*Murat;2007:196*).

It was observed a critical shrinkage in the employment volume of Turkish banking sector just because of the economic meltdown experienced in Turkish economy in 2001. In the Turkish banking industry, 32,906 and 14,071 employees were laid off respectively in 2001 and 2002 ([www.tbb.org.tr/tr/banka-ve-sektor-bilgileri/istatistik-raporlar:01.08.2013](http://www.tbb.org.tr/tr/banka-ve-sektor-bilgileri/istatistik-raporlar:01.08.2013)). This shrinkage in the employment of sector continued up to 2004. Moreover, it was created an artificial impression as if some extra jobs were created in private banks by the employment of staff previously employed as a result of the transferring some private banks to The Savings Deposit Insurance Fund (*SDIF*), and then the sale of those transferred banks by The Savings Deposit Insurance Fund.

As shown in Table-1 below, it is seen a speedy decline in the employment of Turkish banking industry after 2000. However, the level of employment in the sector started to rise in 2004, and a growth rate of about 50% was achieved as compared to the value of 2004 in the employment as of June, 2013. Thus, when the data belonging to the year 2000 are selected as the baseline, then it is seen there is a growth rate of only about 13% in the employment of sector. In other words, the negative effect created by the economic meltdown of 2001 to the sector in terms of employment could only be compensated by reaching to the same employment figures of 2001 in just 2008. And, this shrinkage period of seven years in the sector's employment shows the huge dimensions of damage caused by the economic crisis in 2001.

**Table - 1:** The Development and Functional Distribution of Employment in Turkish Banking Industry (2000-2013) (Employees)

YEAR	Deposit Banks	Public Banks	Private Banks	Banks Transferred to SDIF	Foreign Banks	Development and Investment Banks	Grand Total
2000	125.914	60.191	57.324	6.270	2.129	5.319	170.401
2001	124.435	56.108	56.961	5.839	5.527	5.111	137.495
2002	118.329	40.158	66.869	5.886	5.416	4.942	123.271
2003	118.607	37.994	70.614	4.518	5.481	4.642	123.249
2004	122.630	39.467	76.880	403	5.880	4.533	127.163
2005	127.857	38.046	78.806	395	10.610	4.401	132.258
2006	138.570	39.223	73.220	333	25.794	4.573	143.143
2007	153.212	41.056	75.124	325	36.707	5.322	158.534
2008	166.325	43.333	82.158	267	40.567	5.273	171.598
2009	167.063	44.856	82.270	261	39.676	5.339	172.402
2010	173.133	47.235	83.633	252	42.013	5.370	178.503
2011	176.576	50.239	89.047	243	37.047	4.842	181.418
2012	181.197	51.587	90.612	226	38.772	4.901	186.098
2013*	187.114	52.770	93.026	230	41.088	5.100	192.214

\* The figures are as of June, 2013.

Source: [www.tbb.org.tr/tr/banka-ve-sektor-bilgileri/istatistiki-raporlar](http://www.tbb.org.tr/tr/banka-ve-sektor-bilgileri/istatistiki-raporlar) : Online: 01.08.2013

The functional distribution of employment in Turkish banking sector has also changed in conjunction with the structural change experienced after the economic crisis of 2001 towards the year 2013. Particularly, the share of foreign banks has recorded an about twenty-fold increase in employment as compared to the figure of 2000. Meanwhile, another impact of the structural change was the transformation of share which was once in favor of public banks into the favor of private banks in the magnitude of employment.

As it is seen in the Table-2 below, 76.45% of all employees working in Turkish banking sector were university graduates as of June, 2013 while this figure was only 59.25% in 2004. And, the proportion of employees holding master's degree or doctoral degree to the total employees in the sector was increased from 2.8% in 2004 to 5.9% in June, 2013.

**Table - 2: Bank Employees With Regard To Level of Education (People)**

		<b>2004</b>	<b>2008</b>	<b>2010</b>	<b>2013*</b>
<b>Primary School Graduates</b>	Male	1.721	2.347	1.917	1.312
	Female	182	377	329	269
	Total	1.903	2.724	2.246	1.581
<b>Secondary School Graduates</b>	Male	30.474	26.906	23.833	21.274
	Female	15.756	14.892	13.413	10.919
	Total	46.230	41.798	37.246	32.193
<b>University Graduates</b>	Male	34.436	54.036	58.947	66.796
	Female	40.918	65.877	70.325	80.161
	Total	75.354	119.913	129.272	146.957
<b>Employees with Master's or Doctoral Degree</b>	Male	1.935	3.539	4.790	5.626
	Female	1.741	3.624	4.949	5.857
	Total	3.676	7.163	9.739	11.483
<b>Total</b>	Male	68.566	86.828	89.487	95.008
	Female	58.597	84.770	89.016	97.206
	Total	127.163	171.598	178.503	192.214

\* The figures are as of June, 2013.

Source: [www.tbb.org.tr/tr/banka-ve-sektor-bilgileri/istatistiki-raporlar](http://www.tbb.org.tr/tr/banka-ve-sektor-bilgileri/istatistiki-raporlar) : Online: 01.08.2013

The rate of primary and secondary school graduate employees which was 37.75% in 2004 fell to the level of 17.5% in June, 2013. That is to say, it is observed that the staff employed in Turkish banking sector have been started to be comprised of labor-force with a higher human capital accumulation rate. Besides, the share of female employees which was lower than that of male employees was equalized in time, and then overbalanced.

Unfortunately, it is seen that Turkish banking industry has not reached to the sufficient economic magnitudes, and the current number of employees is far more behind the employment potential compared to developed countries. In fact, this status stems from the negative impact of economic meltdown of 2001 on the sector. In Tur-

key, the economic growth rate effects the employment rate with delay and it contributes a little to the level of employment (*Kesici;2010:15*). Thereof, to increase the employment rate in Turkish economy, it is necessary to implement economic policies which will make the causality relationship between growth and employment to have a strong and bidirectional interaction. Particularly, due to the fact that banking industry is one of the fastest developing sectors in Turkey, it is mandatory to contribute to the general level of employment by employing increasingly more labor-force with a higher human capital accumulation rate in the future periods.

#### **4. The Relationship Between Technological Progress and Employment in Turkish Banking Sector**

The economies which can maintain the distribution of technological progress in an efficient way are also able to create new areas of employment. And, the new areas created need a labor-force with higher human capital accumulation rate. The economies cause to accelerate the speed of technological progress further by employing the labor-force with higher human capital accumulation rate. The development process of technological capabilities and technology policies plays an important role in the growth rate of productivity and quality of labor-force (*İçli;2001:67*). In this context, the higher technological level of Turkish banking industry causes to grow the sector and to increase the volume of employment which can utilize that technology.

The most important change in the structure of employment which is brought about by the technological progress is the substantially rise in efficiency in the sectors that use advanced technology (*Şenkal;2000:263*). It was witnessed a productivity growth based on technology in the Turkish banking industry through the restructuring program implemented after the economic meltdown of 2011. During that period, it was observed that banks started to produce more output with the same amount of input and raise the efficient production limit to a higher level through advancing their production technology (*Öncü-Aktaş;2007:264*). In other words, Turkish banking industry has achieved many significant successes which will eventually have positive effects on the quality of employment by acquiring remarkable results in the areas such as technology utilization, product diversification, and risk management (*Ayan;2012:42*).

Thanks to its structural tendency to innovations and technological progresses, Turkish banking industry has a very special feature of quick adaptation. Along with the fast sprawl of globalization around the world economy, Turkish banking industry has been able to draw foreign direct investments via that feature of adaptation.

Is the technological progress one of the reasons that encourages foreign direct investments to come to Turkish banking industry? Or, is the technological progress in the sector brought about by foreign direct investments? The answer to this question is that one of the reasons that attract foreign direct investments is the higher level of

technology employed in Turkish banking industry. The foreign direct capital flowed into Turkish banking industry can only sustain its operations through directly buying the national banks (*Bülbül-Emirmahmutoğlu;2010:210-211*). That is to say, there is no new bank founded by foreign direct capital in Turkey, but just the signboards of national banks are replaced.

The foreign capital in Turkish banking industry has caused significant amounts of cash inflow into Turkish economy via direct buyouts. And, it is seen many positive effects of those cash inflows on the economic growth in post-crisis period. However, the main target of foreign capital is to grow its international market shares and margins by buying the national portfolios.

In the literature, it is usually said that the foreign capital inflows transfer a high level of technology into a country, and then those transfers of technology cause national economic units to develop competition-based technological equipments, and consequently a significant performance acceleration factor is created in the industries. On the contrary, it is read that the main reason of the entrance of foreign banks into the Turkish market is to benefit from the advantage of installed technological infrastructures (*Akgeyik-Yavuz;2009:54-55*). Turkish banking industry already has a more advanced technological infrastructure and utilization rate than that of many countries particularly in terms of call centers, internet banking, and mobile banking. In the academic studies conducted worldwide, there is no meaningful statistical sign of causality relationship between foreign direct capital and employment. In other words, the foreign direct capital inflows have no additive effect on the employment in Turkey (*Sansalcılar;2012:283*). In short, it could be said that the foreign banks merely helped to recover the volume of employment lost during the economic meltdown of 2001 in the post-crisis period (*Bülbül-Emirmahmutoğlu;2010:223*).

## 5. Conclusion

In the economic theory, it is discussed that the volume of employment may be enhanced by the help of economic growth (*Kılıçbay;1994:268*). The economic growth can be achieved by many factors such as accumulation of capital, higher human capital accumulation rate, and technological progress (*Yılmaz;2004:24*). In other words, it is possible to increase the level of employment through technological progress and human capital. The technological progress generated by the judicial and technical infrastructures founded by the banking reform conducted in Turkish banking sector after 2001, has created a positive impact on employment.

Today, many authorities and scientists advocate that the technological advances will eventually scale down the level of employment, in other words the rate of unemployment will increase as the jobs to be done by human-force will be gradually done by information technologies. However, the technological progress has a negative effect on employment only in the short-term (*this short period may vary with country,*



*industry in time*). And then, there is a positive relationship between technological progress and employment following that short-term. It should not be forgotten that technological progress may lay off the labor-force which fail to adapt to the innovations or have an insufficient human capital accumulation rate. However, as technological progress gradually creates new areas of employment later on, it is possible to see a bigger volume of employment than that of the initial phase. A rise in employment will be naturally realized by the labor-force with higher human capital accumulation rate. Here, the main challenge stems from the factor of education which contributes a lot to raise the human capital accumulation rate within the context of adaptation of labor-force to new technologies.

The Turkish service sector steadily enhances its own share in employment every year. And, Turkish banking industry also follows the same trend. In the last decade, Turkish banking industry clearly proved that it could rapidly create the needed technological progress as long as the required capital accumulation was supplied. Along with the technological progress, the distribution of employment is supported by the labor-force with a higher human capital accumulation rate and a qualification to use new technologies. The industrial efficiency is raised to upper levels by the sector units, and the volume of employment will gradually enhance as long as the industry steadily grows.

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