NON-PERFORMING LOANS

AND ASSET MANAGEMENT COMPANIES IN TURKEY

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2020

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AND ASSET MANAGEMENT COMPANIES IN TURKEY

Thesis submitted to the

Institute for Graduate Studies in Social Sciences

in partial fulfillment of the requirements for the degree of

Master of Arts

in

Economics

by

Ömer Bedri Pehlivan

Boğaziçi University

2020

DECLARATION OF ORIGINALITY

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I am the sole author of this thesis and that I have fully acknowledged and documented in my thesis all sources of ideas and words, including digital resources, which have been produced or published by another person or institution;

This thesis contains no material that has been submitted or accepted for a degree or diploma in any other educational institution;

This is a true copy of the thesis approved by my advisor and thesis committee at Boğaziçi University, including final revisions required by them.

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ABSTRACT

Non-Performing Loans and Asset Management Companies in Turkey

The objective of this thesis is to describe historical evolution of Turkey's NPL levels and NPL disposal management in detail and show bank-specific factors affect banks' NPL sale decisions. Despite the wide literature on NPLs, most of them are focused on determinants of NPLs, either macro or micro determinants. However, our empirical analysis examines the effect of bank-specific metrics, NPL ratio, credit growth, capital adequacy ratio and collection performance, on NPL disposal performance of a bank.

A panel dataset is compiled containing annual data of bank specific factors and NPL sale performance from 2005 to 2018 for twenty-four banks. Fixed effect model is used for panel data analysis. As a result of the estimations, I find that previous year's NPL amount and ratio significantly increase NPL sale performance of a bank while increase in previous year's capital adequacy ratio and collection performance are associated with decline in NPL sale performance of a bank.

ÖZET

Türkiye'deki Sorunlu Krediler ve Varlık Yönetim Şirketleri

Bu çalışmanın amacı, Türk bankacılık sektörünün sorunlu kredilerinin tarihsel evrimi ve sektör tarafından elden çıkarılma yönetimini detaylı bir şekilde anlatmak ve banka özelindeki göstergelerin (sorunlu krediler oranı, kredi büyümesi, sermaye yeterlilik oranı ve tahsilat performansı) bankaların sorunlu kredilerinin satış kararını nasıl etkilediğini araştırmaktır. Sorunlu krediler ile ilgili literatürün büyük kısmı sorunlu kredilerin belirleyici faktörlerine odaklanmaktadır. Fakat, bizim yaptığımız ampirik analiz banka özelindeki faktörlerin bankaların sorunlu kredi elden çıkarma performansına etkisini incelemektedir.

Yirmi dört bankanın 2005 ve 2018 yılları arasındaki bireysel gösterge ve sorunlu kredi satış performansı verilerinin bulunduğu panel veri seti oluşturuldu. Panel veri analizi için sabit etki modeli kullanıldı. Hesaplamalar sonucunda, geçen yılın artan sorunlu kredi miktarının ve sorunlu kredi oranının bu seneki sorunlu kredi satış performansını artırdığı tespit edildi. Fakat, geçen senenin artan sermaye yeterlilik oranı ve tahsilat performansının sorunlu kredi satış performansına ters yönde bir etki yaptığı görüldü.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

AMC	Asset Management Company
BAT	Banks' Association of Turkey
BRSA	Banking Regulation and Supervision Agency
CAGR	Compound Annual Growth Rate
IMF	International Monetary Fund
NPL	Non-Performing Loan
PBAT	Participation Banks' Association of Turkey
SDIF	Savings Deposit Insurance Fund

CHAPTER 1

INTRODUCTION

Financial sector is essential for sustainable economic growth. As the sector serves its essential functions to the society, it bears various challenging risks. This study addresses one of them, non-performing loans. In particular, this study covers NPL problem of Turkish banking sector, how particular practice of NPL disposal method created a new market, evolution of the market and an empirical analysis on how banks' NPL sale decisions are affected by certain bank specific factors.

1.1 Turkish banking sector

Turkey's banking sector is regulated by Banking Regulation and Supervisory Authority (BRSA). The main sector representatives are Banks' Association of Turkey, Participation Banks' Association of Turkey and Association of Financial Institutions. Sectors' players include Banks, Participation Banks, Saving Deposit Insurance Fund (SDIF), Leasing Companies, Factoring Companies, Consumer Finance Companies and Asset Management Companies (AMCs), also referred as NPL Management Companies. Among all the players, this study's focus is on banks and participations banks' NPLs and how NPL problem resolution was initiated by SDIF and currently is managed by privately and publicly held AMCs.

1.2 Definition of non-performing loan

Non-performing loans are destabilizing factor in a financial system, possibly to trigger impairment of social welfare and decline of economic activity. Hence, it has been main

concern of players and regulators of a financial system. However, the formal definitions of NPL varies across jurisdictions. In a general sense, a non-performing loan is a borrowed money upon which the borrower has not made the scheduled payments within a specific time period. To put differently, a non-performing loan is a loan that is in default or close to default. Once a loan is nonperforming, the possibility the borrower will meet obligations of the repayment are substantially low. If the borrower makes payments again on an NPL, it becomes a reperforming loan.

European Central Bank (2016) defines NPL as "a bank loan is considered non-performing when more than 90 days pass without the borrower paying the agreed installments or interest." IMF (2004) similarly defined non-performing loan as following: "A loan is nonperforming when payments of interest and/or principal are past due by 90 days or more, or interest payments equal to 90 days or more have been capitalized, refinanced, or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons—such as a debtor filing for bankruptcy—to doubt that payments will be made in full." Although there is no standard definition universally, 90 days past due criterion is commonly accepted. However, exit criterion from being in NPL status is relatively vaguer.

In Turkey's case, 90 days or more past due criterion is applicable. In more detailed definition of NPL by BRSA, loans that are classified as III., IV., V. group are defined as non-performing loans. To be classified as III., IV., V. group loan, a loan's repayment has to be past due more than 90 days, or any other significant event has to happen signaling that the debtor's creditworthiness is significantly deteriorated.

1.3 Causes of non-performing loans

The reason loan becomes non-performing vary from idiosyncratic factors to systematic factors. Even when the creditors use in-depth assessment models to gauge the debtors' creditworthiness, certain amount of loans becoming non-performing is inevitable. Due to its significance and inevitability, there is a wide literature on determinants of non-performing loans.

Systematic events including economic downturns, increasing unemployment rate, rising interest rates and currency rate depreciation severely deteriorate debt repayment ability of the debtors, all of which lead to higher NPL levels for a country. On the other hand, high sustainable economic growth, low unemployment rates, stable interests and currency rates lead to more sustainable NPL levels in a country. Macro determinants of NPL is widely discussed by academia. Beck, Jakubik and Piloiu (2013) in European Central Bank working paper show that GDP growth has the greatest explanatory power for NPL ratio while the effect of interest rate and stock prices are still significant. Using panel data set comprising Greek banks, Louzis, Vouldis and Metaxas (2012) found that GDP growth rate, unemployment rate and real interest rate have a strong effect on level of non-performing loans in addition to bank specific variables such as performance and efficiency indicators.

Idiosyncratic factors include endless debtor or creditor specific factors. The literature on idiosyncratic factors mostly focuses on creditor specific factors. Salas and Saurina (2002) used panel data to find determinants of non-performing loans of Spanish banks over the period of 1985-1997. They found that in addition to GDP growth rate, bank size, market power, portfolio composition, rapid credit expansion, net interest margin and capital ratio have significant explanatory power in levels of NPLs. Klein (2013) also investigates bank specific factors' explanatory power in NPL levels and found that in

addition to macro factors, Equity-to-Assets and Return-on-Equity have statistically significant negative effect on NPL levels while Loans-to-Assets ratio has statistically significant positive effect on NPL levels.

1.4 The need to clean non-performing loans from banks' balance sheets

Resolving nonperforming loan problem is not only vital for banks but also for the government. High stock of NPLs are accumulated during economic crisis. However, it can work other way around, high stock of NPL causing economic crisis in a country. NPL generates financial instability and is a good indicator of financial soundness of a country. To assure sustainable economic growth, the governments need to keep NPLs at certain level so that banking system serves its essential function to the society by providing financing. Hence, governments should step in to guide and regulate banking sector on the resolution of NPL problem. However, banks' have following main motivations to dispose NPLs and keep them under control:

- NPLs cause higher capital requirements for banks due to loan loss provision regulations
- NPLs have negative effects on banks' profitability
- NPLs increase cost of funding
- NPLs increase operational costs of banks by inefficient use of resources

1.5 Asset management companies and their role

AMCs purchase NPL portfolios in auctions, organized by banks, SDIF and other financial institutions, with a goal of recovering the most value possible from these illiquid assets. AMCs can offer more flexible repayment schedule and discount on the unpaid balance to the debtors as they purchase NPL portfolios at a discounted price. This flexibility creates a

synergy for AMCs, debtors and financial sector. Debtors are offered better conditions on the repayment while AMCs can earn profit from the collections.

Asset management sector's most significant benefits to Turkish financial system are the following:

- AMCs give a chance to consumers to pay off their debts and regain them to the formal economy
- AMCs provide liquidation to financial system by purchasing illiquid assets from banks' balance sheets
- AMCs help banks to improve their balance sheets by removing NPLs from their books
- AMCs help banks to improve their operational efficiency
- AMCs bring economies of scale and more professional recovery management, providing more value recovered from NPLs with less resources

CHAPTER 2

NON-PERFORMING LOANS

2.1 Turkey's non-performing loans

Gross loan has increased CAGR of 22.9% between 2005 and 2018 whereas NPL has grown CAGR of 21.4% during the same time period. If NPL sales haven't occurred, NPL would have grown CAGR of 25% at the same time period, exceeding CAGR of gross loans. The largest growth rates are observed 36% from 2007 to 2008, 55.5% from 2008 to 2009 and 51% from 2017 to 2018. 2008 global financial crisis seems to have substantial effect on NPL stock of Turkey. After Turkish banks start selling NPL portfolios and recovery from the global financial crisis, both NPL stock and NPL ratio experienced a decrease in 2010 and 2011. According to year-end 2018 data from BRSA, a stockpile of TRY96.7 billion worth of NPLs weighs on Turkish economy as of 31 December 2018.

Following 2000 and 2001 banking crisis, the whole Turkish banking sector went through difficulties, leading to a government interference. State-backed SDIF took over more than 20 banks. The government restructured and imposed new regulations on the banking sector. The chaotic atmosphere in banking sector and economy also reflected on banks' non-performing loans, which reached record high levels. However, Turkey's NPL ratio has decreased steadily until 2008. Global financial crisis had only effects on Turkey's NPL ratio for a few years. From 2010 to 2017, Turkey has experienced somewhat steady NPL ratio levels of 3% by the help of NPL sales and relatively well economic conditions. However, Turkey has experienced upsurge in the NPL ratio following economic downturn, currency depreciation and rising interest rates in 2018, reaching NPL ratio of 3.9%. Evolution of Turkey's NPL and gross loan amount can be found in Figure 1. Additionally, Figure 2 shows evolution of Turkey's NPL ratio between 2002 and 2018.

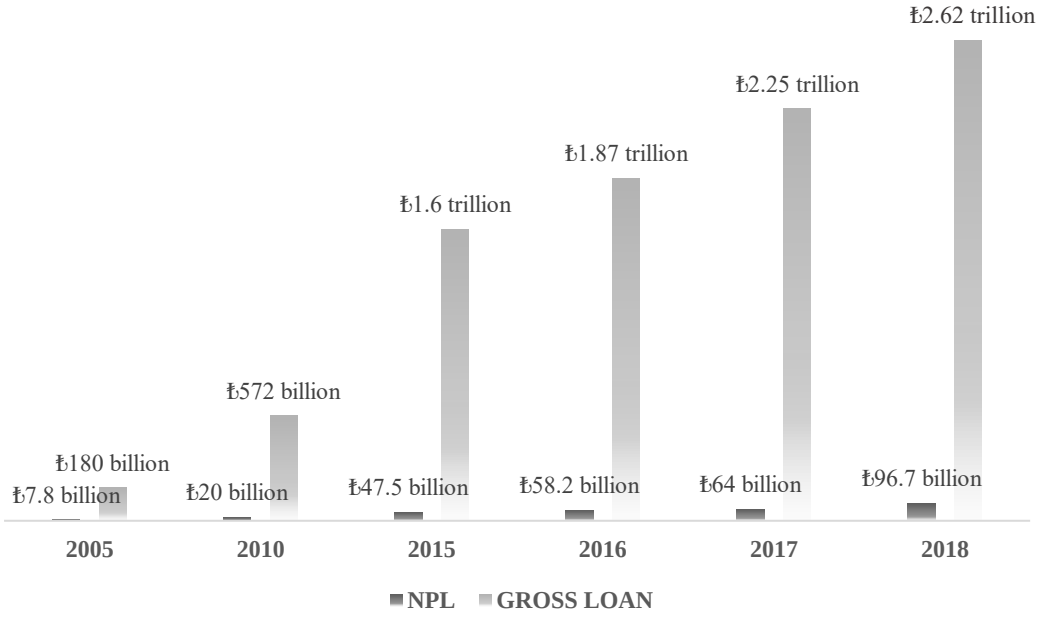

Figure 1. Turkey's NPL and gross loan amount between 2005 and 2018
Source: [BRSA, 2018]

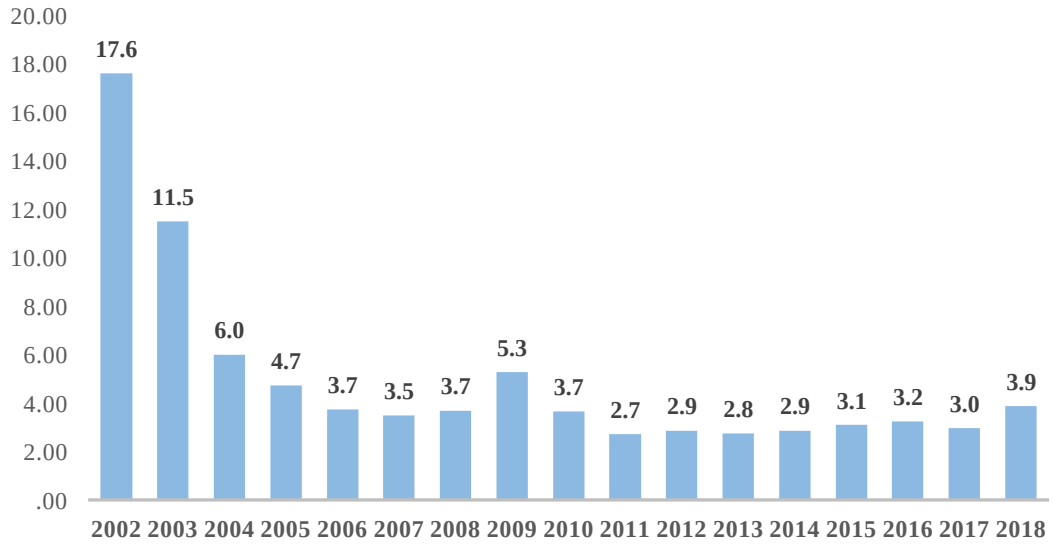

Figure 2. Turkey's NPL ratio (between 2002 and 2018)
Source: [BRSA, 2018]

Economic downturn, currency rate depreciation, rising interest rates and unemployment rates seem to affect NPL stocks of all categories but commercial and SMEs loans experienced substantial increase in their NPL amounts in 2018. As it can be observed

in Figure 3, consumer loan and credit card, SMEs loan and commercial loan segments have grown CAGR of 12.5%, 28.3% and 22.3% between 2010 and 2018, respectively.

As it can be seen in Figure 4, though all of the selected sectors have been negatively affected by economic downturn in 2018, loans from Construction, Wholesale and Retail Trade, Personal Products and Tourism reached their highest levels in 2018 since 2010. NPL ratio of Agriculture Sector is align with the country's ratio but NPL ratio of the remaining selected sectors seem to exceed Turkey's NPL ratio.

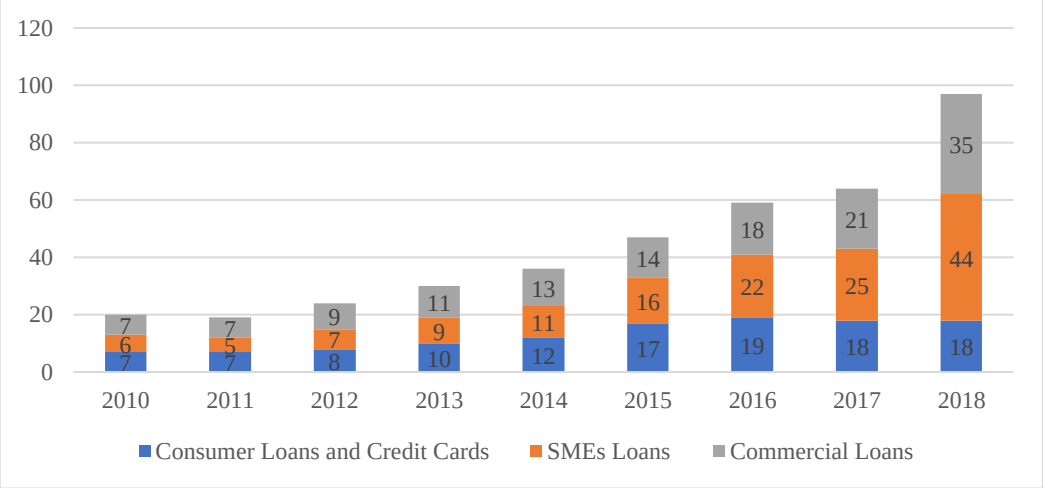

Figure 3. Turkey's NPL breakdown by loan type
Source: [BRSA, 2018]

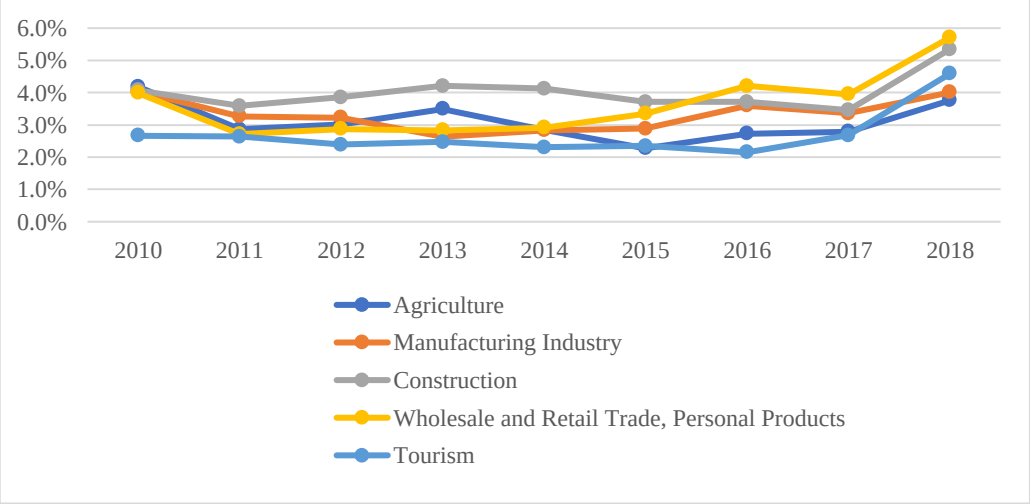

Figure 4. Turkey's NPL ratio breakdown by selected sectors
Source: [BRSA, 2018]

2.2 Cross-country comparisons

Table 1 contains NPL ratio data from selected countries between 2005 and 2017.

Table 1. Cross-country NPL Ratio Comparisons

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Turkey	4.3	3.6	3.3	3.4	5.0	3.5	2.6	2.7	2.6	2.7	3.0	3.1	2.8
USA	NA	NA	NA	NA	5.0	4.4	3.8	3.3	2.5	1.9	1.5	1.3	1.1
Brazil	3.5	3.5	3.0	3.1	4.2	3.1	3.5	3.5	2.9	2.9	3.3	3.9	3.6
Russia	NA	NA	NA	3.8	9.5	8.2	6.6	6.0	6.0	6.7	8.3	9.4	10.0
China	NA	NA	NA	NA	NA	1.1	1.0	1.0	1.0	1.2	1.7	1.7	1.7
India	NA	NA	NA	2.4	NA	NA	2.7	3.4	4.0	4.3	5.9	9.2	10.0
UK	NA	NA	NA	1.6	3.5	4.0	4.0	3.6	3.1	1.7	1.0	0.9	0.7
Germany	4.1	3.4	2.7	2.9	3.3	3.2	3.0	2.9	2.7	2.3	2.0	1.7	1.5
France	NA	NA	NA	2.8	4.0	3.8	4.3	4.3	4.5	4.2	4.0	3.6	3.1
Poland	NA	NA	NA	2.8	4.3	4.9	4.7	5.2	5.0	4.8	4.3	4.0	3.9
Spain	0.8	0.7	0.9	2.8	4.1	4.7	6.0	7.5	9.4	8.5	6.2	5.6	4.5
Italy	7.0	6.6	5.8	6.3	9.4	10.0	11.7	13.7	16.5	18.0	18.1	17.1	14.4

Source: [IMF, 2018]

- The U.S.' NPL ratio reached at its highest of 5% following the financial crisis in 2009 and has been decreasing steadily as provision and write-off rates rose quickly.
- India's infrastructure boom started to fail due to slowing economy and regulatory deadlocks. As a result, state-owned banks, which lent heavily to infrastructure and industrial projects, saw their stressed assets piling up, reaching high NPL ratio of 10% in 2017.
- Russia experienced a sudden increase in its NPL ratio following the global financial crisis in 2009. Russia's NPL ratio was initially coming down after the crisis, but the Western countries' sanctions towards Russia after political crisis with Ukraine on Crimea has adversely affected Russian economy, causing its NPL ratio to eventually reach 10% levels in 2017.
- Although Italy's economic outlook has gotten better in recent years, it has one of the largest stocks of NPL in Europe. However, introduction of Guarantee on Securitization

of Bank Non-Performing Loans (GACS) in 2016 seemed to have positive effect on the country's NPL ratio.

- Spain's was under pressure from the European Central Bank to lower its NPL ratios. The country's NPL ratio peaked at 9.4% in 2013 mainly due to high NPL ratio of construction sector (13%). After SAREB becomes operational, the country's NPL level started coming down.

2.3 Classification of loans

Identification of the NPL problem is the first step of tackling the NPL problem. For that purpose, loans have been classified into groups based on certain standards and monitored by regulators. Hence, classification of loans eases having a grasp of the NPL problem.

In Turkey's case, the communique about Classification of Loans has been published for the first time in 2016, basing upon 37th, 53rd, 57th and 93rd articles of Banking Law no. 5411. The communique has been modified four times since 2016.

The classification of loans is described in the communique (BRSA, 2018) as the following:

a) First Group - Loans of a Standard Nature: In this group, the following loans are classified;

1) Granted to natural persons and legal entities having a creditable financing structure,

2) Principal and interest payments are determined according to the solvency and cash flow of its debtor,

3) Payments are made when due or past due up to thirty days and, repayment problems are not expected in the future and, totally collectable without realization of collateral,

4) No credit deterioration has been detected for the debtor,

5) Subject to 12-months expected credit loss provisioning according to TFRS 9.

b) Second Group - Loans Under Close Monitoring: In this group, the following loans are classified;

1) Extended to natural persons and legal entities with a creditable financing structure, but for which negative signs are observed or forecasted in debtor's solvency or cash flows due to unfavorable developments in macroeconomic conditions or in the sectors the debtor operates, or, independent from the above-mentioned ones, due to adverse developments peculiar to the debtor,

2) Requiring close monitoring due to reasons such as the debtor faces a substantial financial risk at the granting stage of loan, or,

3) Problems regarding timely payments of principal or interest in accordance with the contract are likely to arise and full repayment without realization of collateral is unlikely if problems are not solved, or,

4) Credit worthiness of the debtor has not weakened since the date the loan was granted but is likely to weaken due to an irregular and unmanageable cash flow structure, or,

5) Delinquency in principal and/or interest payments, which is between 30 days and 90 days, due to reasons that cannot be interpreted as credit deterioration, or,

6) Subject to expected credit loss provisioning required for financial assets with significant increase in credit risk according to TFRS 9, or,

7) Net realizable value of collateral is below the book value of receivables, in the case that repayment totally depends on collateral or,

8) Subject to forbearance measures when being classified in Group 1 or Group 2 and do not meet the conditions to be classified as non-performing loans, or,

9) Subject to forbearance measures when classified as non-performing and classified as performing upon the realization of conditions stated in Article 7 of the Regulation.

c) Group Three - Loans with Limited Collectability: In this group, the following loans and other receivables are classified;

1) Debtor’s credit worthiness has been deteriorated, or,

2) Full collection is unlikely without realizing collaterals since net realizable value of collaterals or debtor's own funds are inadequate to pay the debt on its maturity and loan loss is likely unless observed problems are removed, or,

3) Past due principal and/or interest payments between 91 days and 180 days,

4) Having the opinion that collection of principal and /or interest will be past due more than 90 days from its maturity or due date due to reasons such as having problems in the financing operating capital or creating additional liquidity due to unfavorable developments in macroeconomic conditions or in the sectors the debtor operates or, independent from all, due to adverse developments peculiar to the debtor, or,

5) Classified as performing loans following the application of forbearance measures but principal and/or interest payments are past due more than 30 days within the one-year probation period or being subject to forbearance measures within the one-year probation period.

d) Group four - Doubtful Loans: In this group, the following loans are classified;

1) Full collection of principal and/or interest in accordance with the contract is unlikely without realizing the collateral, or,

2) Debtor’s creditworthiness has been deteriorated seriously but not considered completely loss due to the potential contribution of opportunities such as merger, new financing facilities or capital increase to the debtor and collectability of the loan, or,

3) Past due principal and/or interest payments between 181 days and one year from the due date, or,

4) Expected delinquency in the payments of principal and /or interest more than 180 days from its maturity or due date due to unfavorable developments in macroeconomic conditions or in the sectors the debtor operates, or, independent from the above-mentioned ones, due to adverse developments peculiar to the debtor.

e) Group Five - Loans classified as Loss: In this group, the following loans are classified;

1) Nil or negligible collection is expected since the creditworthiness of the debtor is totally deteriorated, or,

2) Despite having the qualifications for classifying in Group Three and Four, delinquency in payments more than one year is expected, or,

3) Past due principal and/or interest payments more than one year from the due date

Evolution of banks' group loans is represented in Table 2. Consolidated II., III. and IV. group loans of selected banks experienced a large increase in 2018. I., II., III. IV. and V. Group loans have grown 22.37%, 40.35%, 28.43%, 30.76% and 19.42% CAGR, respectively, between 2005 and 2018. Previously, banks were allowed to modify conditions of the loan agreement of the I. Group loans; however, new regulation came into place in 2018 allowing only terms of II. Group loans to be modified. Hence, a sudden jump in II. Group loan is experienced in 2018.

Table 3 represents the share of each group as a percentage of total gross loan. Share of II., III. and IV. group loans have increased between 2005 and 2018, experiencing sudden jump in 2018. Share of V. group loans have mostly fluctuated between 2%-3% levels. On the other hand, share of I. group loans experienced a sudden drop in 2018, reaching all-time low levels between 2005 and 2018.

Table 2. Banks' Group Loans

	I. Group	Δ	II. Group	Δ	III. Group	Δ	IV. Group	Δ	V. Group	Δ
2005	141,475	NA	2,850	NA	805	NA	729	NA	5,254	NA
2006	208,955	47.7%	4,879	71.2%	1,145	42.4%	805	10.6%	5,944	13.1%
2007	262,738	25.7%	6,427	31.7%	1,387	21.1%	1,724	114.0%	6,487	9.1%
2008	334,695	27.4%	17,954	179.4%	3,073	121.4%	2,914	69.0%	6,912	6.6%
2009	350,181	4.6%	22,882	27.4%	3,742	21.8%	4,870	67.1%	11,512	66.5%
2010	483,125	38.0%	18,544	-19.0%	1,539	-58.9%	2,464	-49.4%	14,529	26.2%
2011	642,664	33.0%	19,933	7.5%	2,312	50.2%	2,298	-6.7%	13,289	-8.5%
2012	743,586	15.7%	34,519	73.2%	3,528	52.6%	5,571	142.4%	13,426	1.0%
2013	980,546	31.9%	40,639	17.7%	3,968	12.5%	6,247	12.1%	18,543	38.1%
2014	1,147,004	17.0%	49,580	22.0%	4,423	11.5%	8,381	34.2%	22,505	21.4%
2015	1,358,401	18.4%	67,604	36.4%	5,686	28.5%	8,638	3.1%	29,507	31.1%
2016	1,578,521	16.2%	91,885	35.9%	7,414	30.4%	11,376	31.7%	37,400	26.8%
2017	1,897,310	20.2%	124,367	35.3%	6,628	-10.6%	9,199	-19.1%	45,830	22.5%
2018	1,952,068	2.9%	233,606	87.8%	20,286	206.1%	23,829	159.0%	52,808	15.2%

Source: [BAT, PBAT, 2018]

Table 3. Each Group Loans' Shares

%	ı. Group	II. Group	III. Group	IV. Group	V. Group
2005	93.6%	1.9%	0.5%	0.5%	3.5%
2006	94.2%	2.2%	0.5%	0.4%	2.7%
2007	94.3%	2.3%	0.5%	0.6%	2.3%
2008	91.6%	4.9%	0.8%	0.8%	1.9%
2009	89.1%	5.8%	1.0%	1.2%	2.9%
2010	92.9%	3.6%	0.3%	0.5%	2.8%
2011	94.4%	2.9%	0.3%	0.3%	2.0%
2012	92.9%	4.3%	0.4%	0.7%	1.7%
2013	93.4%	3.9%	0.4%	0.6%	1.8%
2014	93.1%	4.0%	0.4%	0.7%	1.8%
2015	92.4%	4.6%	0.4%	0.6%	2.0%
2016	91.4%	5.3%	0.4%	0.7%	2.2%
2017	91.1%	6.0%	0.3%	0.4%	2.2%
2018	84.5%	11.3%	0.9%	1.0%	2.3%

Source: [BAT, PBAT, 2018]

2.4 Participation banks

Establishing participation banks was enabled in 1983 by the Council of Ministers. Until 2005, the participation banks were titled as Private Financial Institutions. These institutions started using the title of Participation Banks upon Banking Law no. 5411. First entrees were privately held Albaraka Participation Bank and Kuveyt Turk Participation Bank, which were established in 1984 and 1989, respectively. Ziraat Participation and Vakıf Participation, first state-backed participation banks, were established in 2015 and 2016,

respectively. The youngest participation bank, publicly held Türkiye Emlak Participation Bank, is established in 2019. Asya Participation, with one of the highest gross loan amounts among participation banks, lost its license and got taken over by SDIF regarding terrorism related charges. Five operating participation banks are included in the following graph and table: Albaraka Türk Participation Bank, Kuveyt Türk Participation Bank, Türkiye Finans Participation Bank, Ziraat Participation Bank and Vakıf Participation Bank

Figure 5 reveals that participation banks' NPL ratio is mostly aligned with the country's ratio with a few exceptions. The upsurge in NPL ratio of participation banks in 2014 is caused by increase in Asya Katılım's Group Five loans. The notable drop in 2015 can be explained by SDIF's takeover of Asya Katılım, which resulted in lower NPL numbers in consolidated participation banks' balance sheets. However, it stayed below the country's ratio in 2018. As it can be observed in Table 4, I., II., III. IV. and V. Group loans have grown 23.5%, 48.9%, 26.6%, 28.5% and 23.4% CAGR, respectively, between 2006 and 2018. Participation banks sold 550 million TRY worth of NPL portfolio in 2018. As state-owned participation banks recently started selling their NPL portfolios, the sale number is expected to follow an increasing trend in the near future.

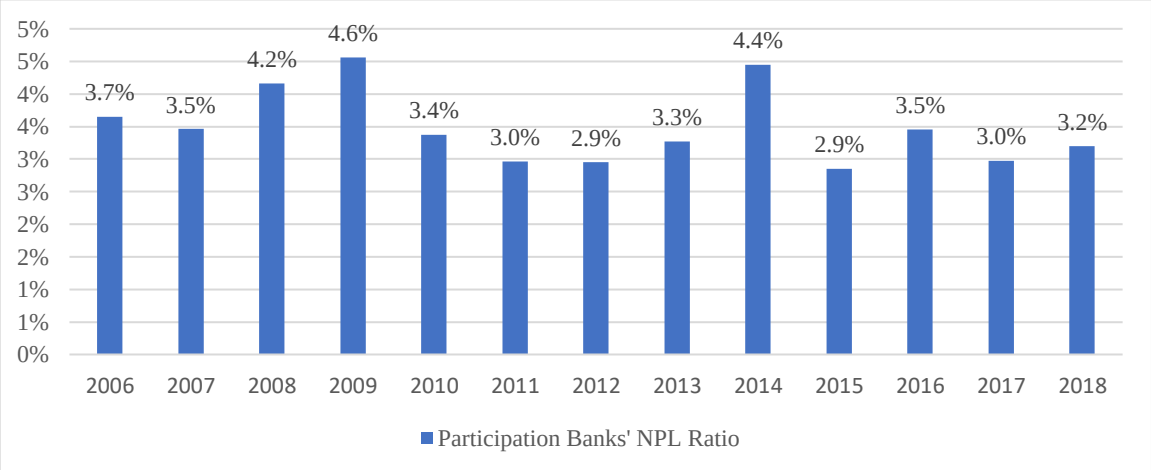

Figure 5. Participation banks' NPL ratio
Source: [PBAT, 2018]

Table 4. Participation Banks' Group Loans

	I. Group	Δ	II. Group	Δ	III. Group	Δ	IV. Group	Δ	V. Group	Δ
2006	9,352	NA	365	NA	60	NA	59	NA	248	NA
2007	13,917	48.8%	545	49.4%	86	43.0%	177	198.4%	254	2.4%
2008	17,922	28.8%	1,341	146.1%	179	108.5%	278	56.5%	379	49.0%
2009	22,797	27.2%	1,834	36.7%	169	-5.7%	285	2.8%	722	90.6%
2010	30,360	33.2%	1,484	-19.1%	130	-22.9%	201	-29.7%	780	7.9%
2011	38,798	27.8%	1,817	22.4%	285	118.4%	221	10.1%	732	-6.1%
2012	47,066	21.3%	2,429	33.7%	186	-34.6%	354	60.0%	963	31.5%
2013	62,333	32.4%	4,240	74.6%	425	128.3%	657	85.5%	1,168	21.4%
2014	64,342	3.2%	3,964	-6.5%	233	-45.1%	326	-50.4%	2,619	124.2%
2015	69,477	8.0%	3,793	-4.3%	435	86.3%	679	108.4%	1,036	-60.5%
2016	78,942	13.6%	6,406	68.9%	570	31.0%	870	28.1%	1,616	56.1%
2017	103,060	30.6%	7,026	9.7%	344	-39.6%	634	-27.1%	2,397	48.3%
2018	117,204	13.7%	43,256	515.6%	1,015	194.9%	1,199	89.0%	3,077	28.4%

Source: [PBAT, 2018]

2.5 State-owned banks

Ziraat Bank was the first state-owned bank, established in 1863. Halk Bank and Vakıf Bank were established in 1933 and 1954, respectively. Ziraat Bank's shares and controlling shares of Halk Bank are transferred to Turkish Wealth Fund. In terms of asset size and outstanding loan amount, state banks represent approximately 35% of the sector as of 2018. Five operating banks are included in the Table 5: Ziraat Bank, Vakıf Bank, Halk Bank, Ziraat Katılım and Vakıf Katılım.

Group loan values in Table 5 implies that I., II., III. IV. and V. Group loans have grown 28.57%, 39.55%, 25.67%, 37.4% and 17.14% CAGR, respectively, between 2005 and 2018.

Evolution of NPL ratio of state banks can be observed in Figure 6. Only one state bank sold 76.7 million TRY worth of NPL portfolio for 4.5 million Turkish liras in 2018, which was the first time since the establishment of NPL purchase market in Turkey. The sale number is expected to experience increasing trend in the near future as other state banks participate in the sales.

Table 5. State-owned Banks' Group Loans

	I. Group	Δ	II. Group	Δ	III. Group	Δ	IV. Group	Δ	V. Group	Δ
2005	30,768		706		236		75		2,203	
2006	44,841	45.7%	1,248	76.8%	354	49.7%	76	2.7%	1,974	-10.4%
2007	60,121	34.1%	2,106	68.7%	149	-57.8%	266	245.6%	2,150	8.9%
2008	81,437	35.5%	3,983	89.1%	326	118.0%	530	99.3%	2,454	14.1%
2009	94,475	16.0%	7,420	86.3%	534	63.7%	689	30.1%	3,417	39.2%
2010	137,840	45.9%	6,792	-8.5%	363	-32.1%	491	-28.7%	4,023	17.7%
2011	175,926	27.6%	6,214	-8.5%	363	0.1%	372	-24.2%	3,952	-1.8%
2012	191,883	9.1%	11,411	83.6%	937	157.7%	1,708	358.3%	4,096	3.7%
2013	270,418	40.9%	10,475	-8.2%	866	-7.5%	1,277	-25.2%	6,049	47.7%
2014	333,481	23.3%	10,143	-3.2%	811	-6.4%	2,469	93.3%	7,110	17.5%
2015	419,213	25.7%	14,838	46.3%	1,107	36.5%	1,465	-40.7%	9,391	32.1%
2016	524,274	25.1%	18,488	24.6%	2,187	97.5%	2,492	70.1%	11,105	18.2%
2017	681,645	30.0%	19,521	5.6%	1,730	-20.9%	2,093	-16.0%	14,744	32.8%
2018	807,024	18.4%	53,755	175.4%	4,602	165.9%	4,659	122.5%	18,011	22.2%

Source: [BAT, PBAT, 2018]

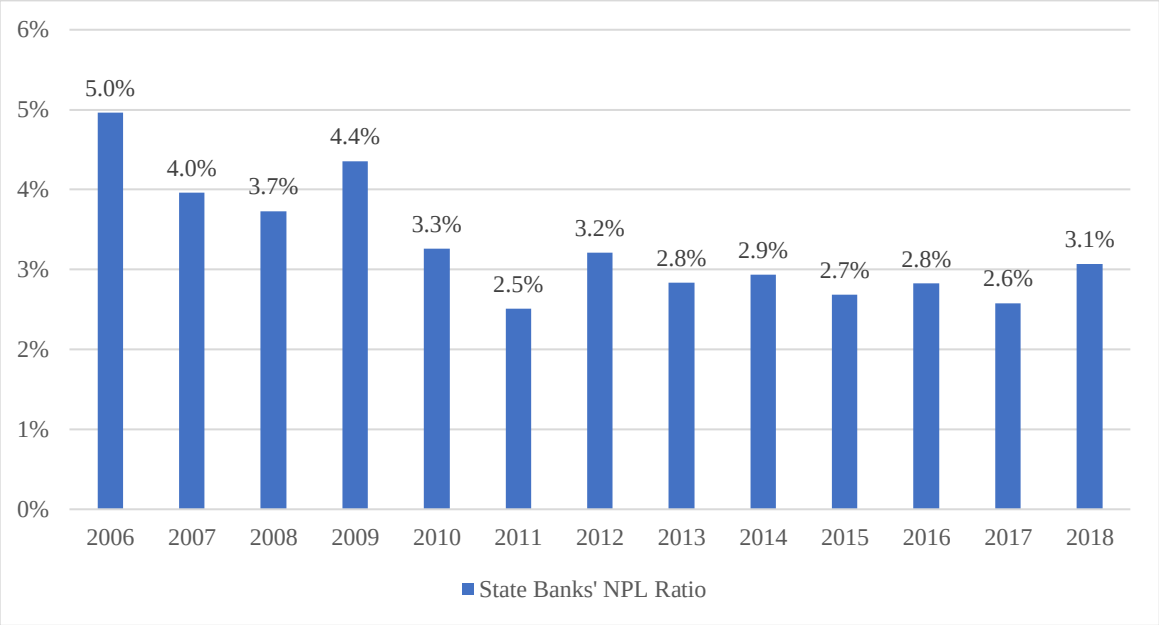

Figure 6. State banks' NPL ratio
Source: [BAT, PBAT, 2018]

CHAPTER 3

NON-PERFORMING LOAN PURCHASE MARKET AND ASSET MANAGEMENT COMPANIES

3.1 Non-performing loans disposal practices

Aftermath of financial crisis, economies recover over time. However, recovery of NPLs is relatively more sluggish and lagged behind. Hence, NPL problem needs to be actively dealt with. For that purpose, regulators need to set regulations and certain guidelines for the creditors**.** Following actions can be taken in three different stages of a loan's lifespan by creditors or regulators:

- Prior to loan agreement: Creditors should be able to better identify potential non-performing loans. Hence, creditors should continuously work on improving their assessment models of the debtor's creditworthiness and their network of intelligence. Regulators can also work on developing models for creditors and release guidelines for them.
- During repayment period: After a loan is used by the debtor, the debtor's financial status might deteriorate throughout the repayment period. The agreement with the debtors, who are in such situations, should be modified to enable the debtors to pay off the debt.
- When a loan becomes non-performing:
  i. Write-offs: After certain time period, non-performing loans are written off from banks' balance sheets. Write-off is a widely used routine practice for banks and is one of the simplest ways of NPL disposal. However, banks usually do not prefer to

write off loans from their balance sheet due to its implications for capital adequacy and profits.

ii. Direct sale: Banks and other financial institutions sell non-performing loan portfolios directly to interested investors.

iii. Securitization: Banks and other financial institutions pool and tranche loans and sell the securitized products in dedicated markets to interested parties.

iv. Asset protection schemes: Regulators create a state-backed entity offering insurance on non-performing loans.

v. State-backed AMCs: Asset management companies, that are funded by state's sources and managed by officers, purchase or transfer non-performing loan portfolios from creditors and try to maximize the value recovered from NPL portfolios. It is often used for a specific time period during a systematic crisis.

vi. Privately held AMCs: Asset management companies, that are founded by private individuals and regulated and monitored by a government agency, purchase or transfer non-performing loan portfolios from creditors at a fair market price and try to maximize the value recovered from NPL portfolios.

State-backed AMCs seems to be a key form of government intervention to manage illiquid assets during crisis, but other practices have been also widely used. Historical NPL disposal practice examples around the world are the following:

- Italy was under intense pressure from the European Central Bank due to its banks' high stock of NPL in their balance sheets. As a result, Italian government introduced Guarantee on Securitization of Bank Non-Performing Loans (GACS) in 2016, which is a guarantee mechanism to assure removal of non-performing loans from banks' balance sheets. The scheme provides state guarantees as part of securitizations transactions whose underlying assets are NPLs.

- Ireland is another European country under pressure from the European Central Bank to reduce NPLs from banks' books. Ireland historically used two methods, direct sales to interested institutional investors and sale of a pool of NPLs through securitization.
- US-based private equities have acquired NPL stock of Spain and Portugal in recent years. As well as direct sales to investors method, both countries are also looking into sale of a pool of NPLs through securitization in the near future.
- Malaysia established Danaharta, public asset management company, in 1998 to tackle growing NPL problem from the Asian crisis in 1997.
- Sweden used state-owned AMCs (Securum) during the financial crisis in Sweden in 1990s.
- When the U.S. experienced savings and loan crisis in 1980s, The Resolution Trust Corporation (RTC) was established in 1989. The RTC was a temporary U.S. government-owned asset management company and cease to exist in 1995. However, the U.S. on a regular basis arranges a loan sale via FDIC (Federal Deposit Insurance Corporation), an independent agency of the U.S. government. These loans are acquired by FDIC from failed financial institutions and sold in pools through sealed bid sales.
- China has four large public AMCs to take over NPLs from banks on a regular basis.

Although various strategies are implemented to dispose NPLs from financial sector, public AMCs come to rescue during times of financial crisis to act quickly. Balgova et al (2017) estimate that NPL reductions in the presence of AMCs are, on average, around 3 to 5 percentage points larger than could be otherwise expected. However, it is more common to use direct sales and securitization methods on a regular basis under steady economic conditions.

3.2 Turkish non-performing loan purchase market

3.2.1 Evolution of the market

As a result of the crisis in the beginning of 2000s, the financial sector accumulated large amount of non-performing loans. Hence, it became vital to resolve non-performing loan problem to strengthen the financial sector. Followingly, SDIF took over troubled banks and their loan portfolio to quickly dispose NPLs. SDIF organized two large auctions in 2003 and 2004 for interested investors to take over the portfolios. This was a temporary solution to tackle NPL problem following the crisis, but the government decided that Turkey needs a permanent NPL management strategy. For this purpose, the government has passed a communique allowing the establishment of publicly and privately held entities to tackle NPL problem. These entities are called Asset Management Companies (AMCs), which are subject to license from BRSA. The first regulation regarding AMCs was published in Banking Law No. 5411 in 2005 while private banks started selling NPLs regularly to AMCs in 2008. However, only one state-owned bank, Halkbank, sold its NPL portfolio for the first time in 2018. Additionally, AMCs based in Turkey are only allowed to buy NPLs from banks and financial institutions located in Turkey, not from other sectors or from other countries' financial institutions. These specialized AMCs are regulated and monitored by BRSA. AMCs main activity is to purchase NPL portfolios and maximize the recovered value from these NPLs.

3.2.2 Non-performing loan sales

Total cumulative unpaid balance of NPL sales amount to TRY45.4 billion by the end of 2018. NPL sales amount has fluctuated over the years since its first initiation in 2008. Although it is trending upwards overall, year-specific reasons affected sales amount. NPL

sales and NPL sales ratio is presented in Figure 7, in which NPL Sales Ratio is calculated as NPL sales as a percentage of gross NPL amount.

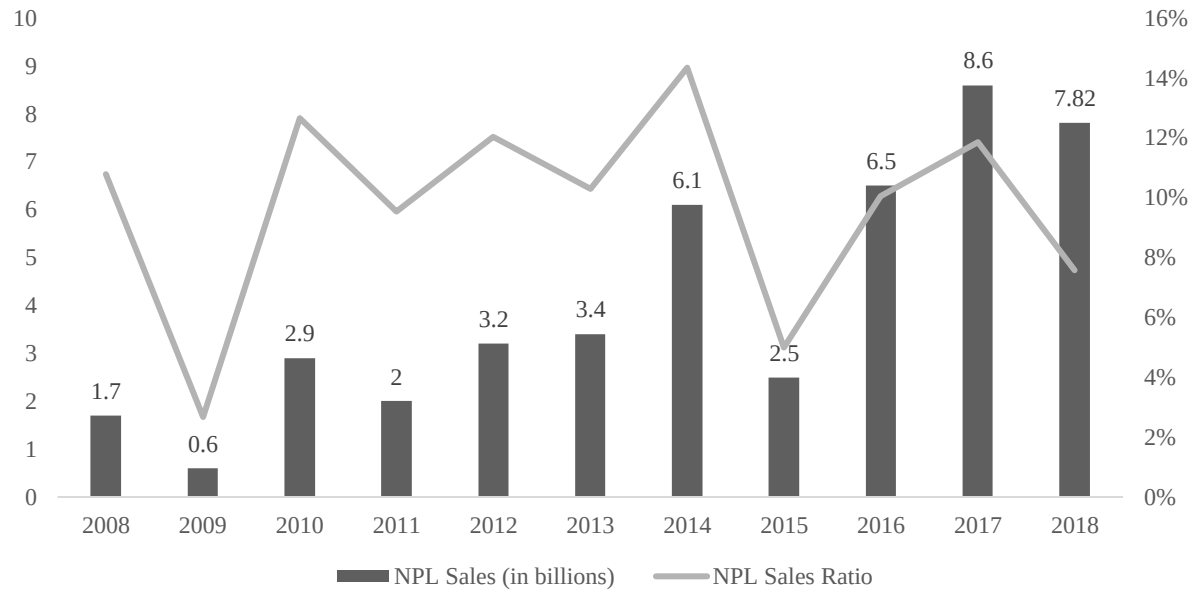

Figure 7. NPL sales and NPL sales ratio
Source: [PwC, 2018]

Figure 8 represents the total NPL amount and NPL ratio would have become if NPL sales have not occurred since 2008.

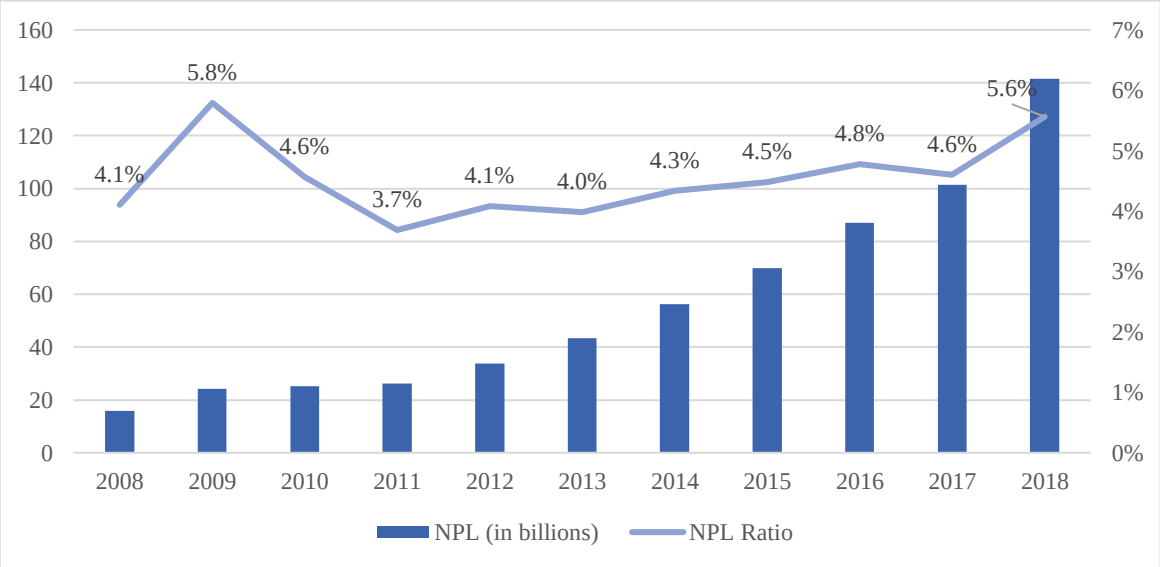

Figure 8. NPL amount and NPL ratio (if there was no NPL sales market)
Source: [PwC, BAT, PBAT, 2018]

3.2.2.1 Valuation of non-performing loans

Non-performing loans are valued as most of the financial assets and loans are. To elaborate, NPLs are valued based on Discounted Cash Flow method. When a loan becomes non-performing, it is revalued considering expected recovery amount. Expected recovery amount is derived using a probabilistic approach on the basis of previous experience of recovery rates and recovery times.

$$\text{NBV}_t = \sum_{t=1}^{T} \frac{CF_t}{(1+i)^t}$$

Where NBV is net book value, CF represents expected cash flow (recovered value in each period) and t and i denotes time and discount rate, respectively.

3.2.2.2 Non-performing loan sales prices evolution

NPL sales prices started at high levels in 2008 and experienced a sudden drop in 2009. Following five years, the sale prices trended upward. From 2013 to 2018, the sales prices declined steadily and reached at the lowest level in 2018. This decline is due to lower quality NPL ratios and increased funding costs of AMCs as a result of worsening economic conditions. Although NPL ratios lag behind the current economic conditions, NPL Sales price ratio is usually aligned with the current economic conditions. Figure 9 includes only those transactions with disclosed price information.

As noted in previous section, NPL portfolios are valued based on expected recovery amount. Hence, any factor, that might be affecting debt servicing capacity of debtors from macroeconomic conditions (unemployment rate, interest rate, GDP growth rate) to behaviors of similar debtors and content of the portfolio (age of the debt, collateral of the debt), has an impact on value of an NPL portfolio. As seen in the graph, fluctuating economic conditions are reflected on graph along with market developments.

In PwC's Turkish NPL Purchasing Market report (2018), where the historic sales price trend in the market is examined in detail, following number of facts are highlighted:

- 2008 had a high sales price ratio because the NPL portfolio sold that year had a higher percentage of secured loans.
- In the first three years, competition was mainly between first-movers Hayat and Güven, with some involvement from Bebek, Artı and Istanbul, putting downward pressure on the average sales price ratio (except 2008 due to the previous point).
- In 2011, 2012 and 2013 competition became more intense, with new players in the NPL purchasing market. Final and Efes were founded in 2011, Vera was founded in 2012, and there was increased participation from Birleşim. Upward trend is observed in the price ratios.
- After 2013, the maturing NPL purchasing market experienced exits, mergers and acquisitions within the competitive landscape, leading to fewer players. In addition to these market developments, the decreasing quality of NPL portfolios also contributed to the decline in sales prices.

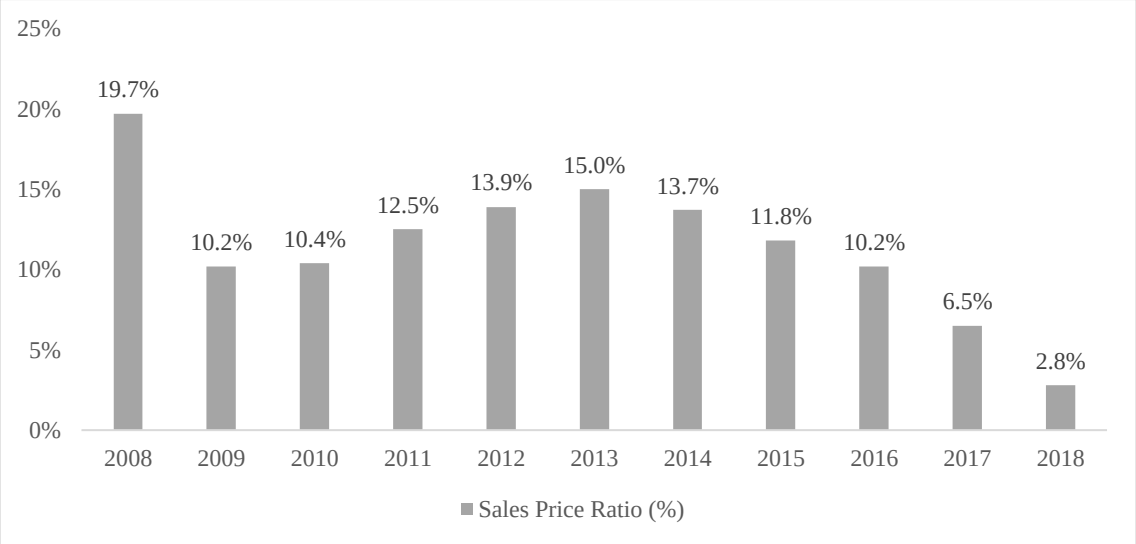

Figure 9. Sales price ratio
Source: [PwC, BAT, PBAT, 2018]

3.3 Asset management companies

Banking Law no. 5411in 2005 includes a law about the establishment of NPL purchasing Asset Management Companies. Following the Banking Law, the communique, which was released in 2006, includes description of Purpose, Scope, Definition, Licensing, Corporate Management and Monitoring of Asset Management Companies. This communique has been modified four times since its first release. Interested parties need a license from BRSA to establish an NPL purchasing asset management company. Within 180 days following the license, AMCs need another permission from BRSA to become operational. AMCs also have paid-in capital requirement of 20 million Turkish lira.

Although AMCs need to report their audited financial statement to BRSA by law, only a few AMCs' financial statements are publicly available. Operational AMCs as of 31.12.2018 are listed in Table 6 with their available notable information.

Table 6. List of Asset Management Companies

	AMCs	Entry Date	Shareholders	Total Asset Size (TRY)	Total Purchased Portfolio Size (TRY)
1	Armada	2018	Private Individuals	NA	NA
2	Arsan	2018	Private Individuals	NA	NA
3	Birikim	2016	Altınhas Holding, Ak Faktoring, Private Individuals	288 million	4.9 billion
4	Birleşim	2005	SDIF	212 million	1.5 billion TRY + 0.9 billion USD
5	Boğaziçi	2018	Private Individuals	NA	NA
6	Deren	2013	Lider Faktoring	123 million	1.4 billion
7	Efes	2011	İş Yatırım M. D., İş Portföy Yönetimi, İş faktoring	182 million	NA
8	Emir	2017	Private Individuals	NA	NA
9	Gelecek	2007	Fiba Group, Private Individuals	1.2 billion	13.4 billion
10	Hayat	2008	Actera P.E, EBRD	1.2 billion	12.9 billion
11	Hedef	2015	Private Individuals	NA	NA
12	İstanbul	2008	Ünlü Yatırım Holding	NA	2.7 billion
13	Mega	2015	Private Individuals	NA	NA
14	Merkez	2017	Private Individuals	NA	NA
15	Metal	2018	Private Individuals	NA	NA
16	Met-ay	2017	Private Individuals	NA	NA
17	Sümer	2014	ASV Holding	155 million	NA
18	Vera	2013	Private Individuals	202.6 million	NA
19	Yunus	2016	Delfin Holding	NA	NA

Source: [BRSA, 2018]

CHAPTER 4

EMPIRICAL ANALYSIS

4.1. Data summary

A panel dataset has been constructed from twenty-four banks' year-end financial tables. The dataset includes annual observation of banks' collections, collection rate, year-end balance, write-offs and write-off ratio of loans under follow-up accounts (III., IV. and V. group loans) as well as bank specific NPL ratios, loan growth, NPL growth and capital adequacy ratios.

- III., IV. and V. group loans are consolidated in the dataset. All collected data of year-end balance, write-offs and collections are summation of III., IV. and V. group loans' data.
- NPL ratio is calculated as summation of end balances of III., IV. and V. group loans divided by summation of end balances of all group loans
- NPL growth is derived from summation of end balances of III., IV. and V. group loans
- Credit growth is derived from summation of end balances of all group loans
- Write-off Ratio is calculated as write-off divided by summation of end balance and write-off: Write-offs/(End Balance + Write-offs)
- Collection rate is calculated as collection divided by summation of end balance and collection: Collection/(Collections + End Balance)
- Write-offs will be used as a proxy for individual NPL sales of banks. The reasons are the following:
    - NPL sales were recorded under write-offs in banks' balance sheets before 2018.

- Actual write-off numbers are significantly close to 0 prior to NPL purchase market's establishment.
- When estimated aggregate NPL sale numbers (from write-offs) are compared with the numbers in PwC's Turkish NPL purchasing market report (2018), there is not a significant difference. (e.g. 8.63 vs 8.6 (2017), 6.76 vs 6.5 (2016))

Table 7 introduces variables in the data and where they are obtained whereas Table 8 provides calculated statistics of the variables. Table 9 provides calculated panel statistics of the variables in detail. Correlation matrix for dependent and independent variables can be found in Table 10. Lastly, Table 11 provides mean and standard deviation values for each banks' NPL sales ratio and NPL sales.

Table 7. Introduction of Data

Variable	Source
Collections	BAT, PBAT
End Balance	BAT, PBAT
NPL growth	Derived from other variables
Collection Rate	Derived from other variables
Bank's NPL ratio	Derived from other variables
Credit Growth	Derived from other variables
Capital Adequacy Ratio	BAT, PBAT
Write-offs	BAT, PBAT
Write-off Ratio	Derived from other variables
NPL Sales	Write-offs will be used as a proxy
NPL Sales Ratio	Write-off Ratio will be used as a proxy
LnBalance	Derived from other variables

Table 8. Variable Statistics

Variable	Obs	Mean	St. Dev.	Min	Max
ID	336	12.5	6.93251	1	24
Year	336	2011.5	4.037141	2005	2018
Collections	294	412501.9	580616.2	0	6139702
End Balance	294	1493023	2059807	410	1.24e+07
NPL Growth	285	.4475465	1.061157	-.4003656	14.93393
Collection Rate	293	.2177809	.1092428	0	.5097666
Bank's NPL ratio	291	.0367879	.0220466	.0016084	.1675831
Credit Growth	284	.4979246	3.790937	-.5082714	64.04968
Capital Adequacy Ratio	291	.1623182	.0421389	.0724	.4964
Write-offs	292	153136.6	270746	0	2014893
Write-off Ratio	292	.1029602	.1146506	0	.55248
LnBalance	294	13.282	1.622944	6.016157	16.33158

Table 9. Panel Data Statistics

Variable	Mean	St. Dev.	Min	Max	Obs.
Write-off Ratio	.1029602	.1146506	0	.55248	N = 292
between		.0661856	0	.212449	n = 24
within		.0968786	-.104123	.5054658	T-bar = 12.1667
Collection Rate	.2177809	.1092428	0	.50976	N = 293
between		.0806387	.0197841	.3274423	n = 24
within		.0807818	.0201386	.5237131	T-bar = 12.2083
Bank's NPL Ratio	.0367879	.0220466	.0016084	.1675831	N = 291
between		.0153487	.0085306	.0633364	n = 24
within		.0173447	.0035831	.150347	T-bar = 12.125
NPL Growth	.4475465	1.061157	-.400366	14.93393	N = 285
between		1.915078	.1648592	9.083499	n = 24
within		.6763967	-5.40288	6.297977	T-bar = 11.875
Credit Growth	.4979426	3.790937	-.508271	64.04968	N = 284
between		.9986688	.133501	5.153416	n = 24
within		3.649616	-4.61111	59.3942	T-bar = 11.833
Capital Adequacy Ratio	.1623182	.0421389	.0724	.4964	N = 291
between		.0170714	.1341	.2149071	n = 24
within		.0389214	.0795111	.4723111	T-bar = 12.125
End Balance	1493023	2059807	410	1.24e+07	N = 294
between		1313962	81612.36	4240997	n = 24
within		1601005	-1721345	9786423	T-bar = 12.25

Table 10. Correlation Matrix

	Write-off Ratio	Bank's NPL ratio	L. Bank's NPL ratio	Col. Rate	L. Col. Rate	Credit Growth	L. Credit Growth	Capital Adeq. Ratio	L. Capital Adeq. Ratio	Ln Balance	L. Ln Balance
Write-off Ratio	1.00										
Bank's NPL ratio	0.0482	1.00									
L.	0.1881	0.6951	1.00								
Col. Rate	0.1303	-0.101	-0.005	1.00							
L.	-0.040	-0.118	-0.129	0.6750	1.00						
Credit Growth	-0.162	-0.360	0.0297	-0.033	-0.01	1.00					
L.	-0.012	-0.087	-0.070	0.0850	0.0858	0.818	1.00				
Capital Adeq. Ratio	-0.017	0.1544	0.1627	0.0819	0.0542	-0.176	0.1171	1.00			
L.	-0.113	0.0616	0.2571	0.0655	0.0626	0.0990	-0.013	0.7676	1.00		
LnBalance	-0.035	0.2749	0.1763	-0.101	-0.093	-0.423	-0.155	0.1195	0.0328	1.00	
L.	-0.051	0.2557	0.2628	-0.06	-0.095	-0.416	-0.148	0.1331	0.0650	0.9787	1.00

Table 11. Banks' NPL Sales and Sales Ratio Statistics

Banks	Mean (NPL Sales Ratio)	sd (NPL Sales Ratio)	Mean (NPL Sales)	sd (NPL Sales)
Akbank	0.15	.1103777	409482.79	345098.7
Aktifbank	0.00	0	0	0
Albaraka	0.08	.068641	54995.714	98596.22
Alternatifbank	0.10	.1268674	48755.929	59416.98
Anadolubank	0.11	.1234309	25055.643	39830.82
Asya Katilim	0.15	.0990079	175826.1	284376.4
Burgan Bank	0.21	.201469	75668.143	89677.76
Denizbank	0.10	.0831057	242419.6	310007.2
Fibabanka	0.21	.1412925	93381.125	142063.2
Garanti Bankasi	0.09	.042932	286000.07	305299.5
HSBC	0.16	.1386846	202470.79	225820.5
Halk Bankasi	0.00	.0035005	6000.6697	19325.64
ING Bank	0.08	.0618421	97273.071	144045.3
Is Bank	0.07	.0506375	210815.64	157719
Kuveyt Turk	0.20	.1297218	106011.79	131858.6
QNB Finansbank	0.13	.1072972	317142	427075.7
Sekerbank	0.15	.1673534	119709.07	140447.5
TEB	0.13	.1152232	206398	227334.6
Turkiye Finans	0.14	0.0899437	111586.79	166331.8
Vakifbank	0.00	.0000109	2.9285714	10.95771
Vakif Katilim	0.09	.1303479	1744.5	2467.096
Yapikredi	0.12	.1104095	532836.79	635734.7
Ziraat Bankasi	0.00	0	0	0
Ziraat Katilim	0.00	0	0	0

Various plots were generated to show the relationship between independent and dependent variables. Figure 10 visualizes the relationship of dependent variable and lagged values of banks' NPL ratio. Figure 11 visualizes the relationship of dependent variable and lagged values of collection rate of banks. Figure 12 visualizes the relationship of dependent variable and lagged values of banks' capital adequacy ratio. Figure 13 visualizes the relationship of dependent variable and lagged values of banks' credit growth. Figure 14 visualizes the relationship of dependent variable and lagged values of natural logarithmic of banks' NPL end balance.

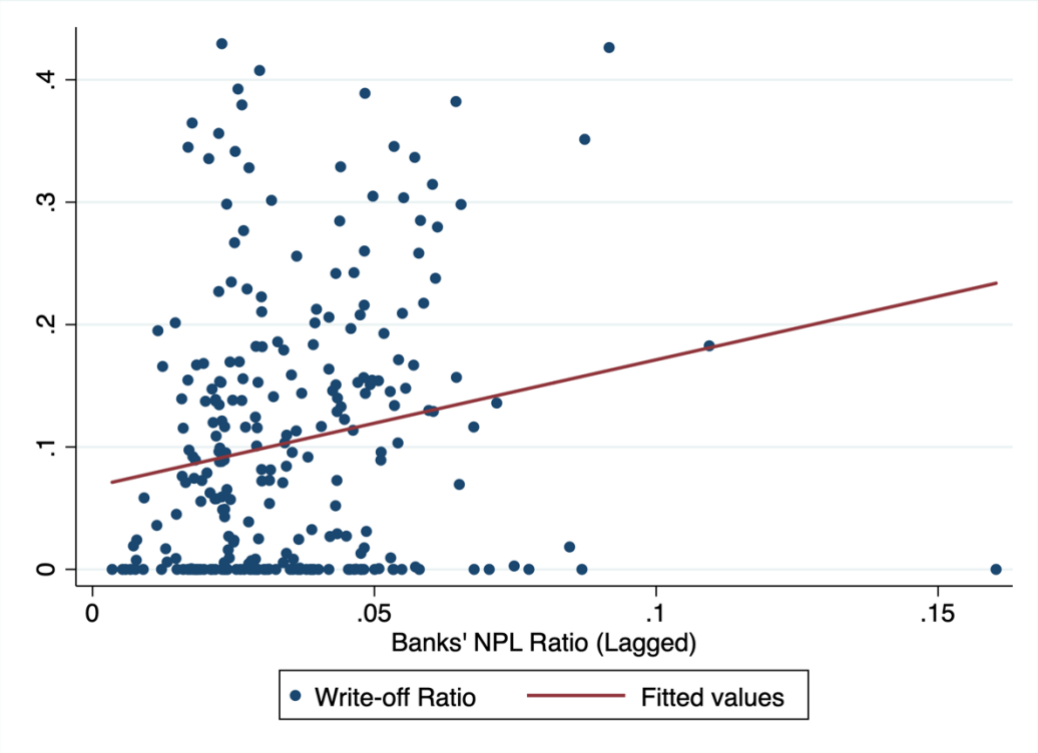

Figure 10. Plot of banks' NPL ratio (lagged) on dependent variable

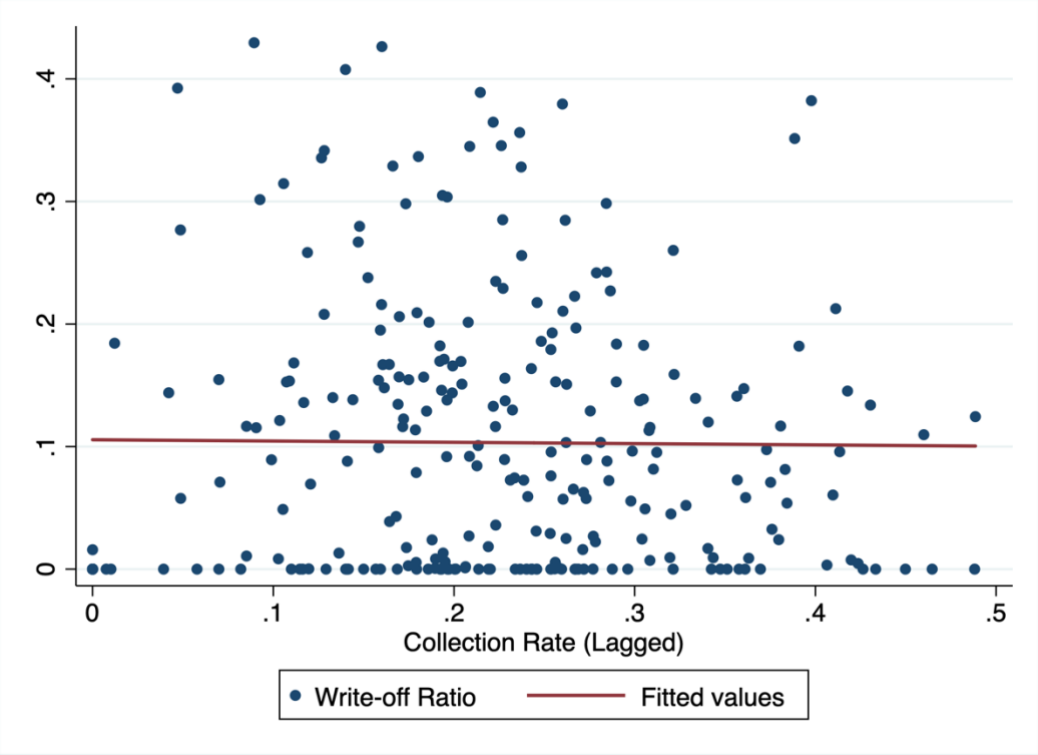

Figure 11. Plot of collection rate (lagged) on dependent variable

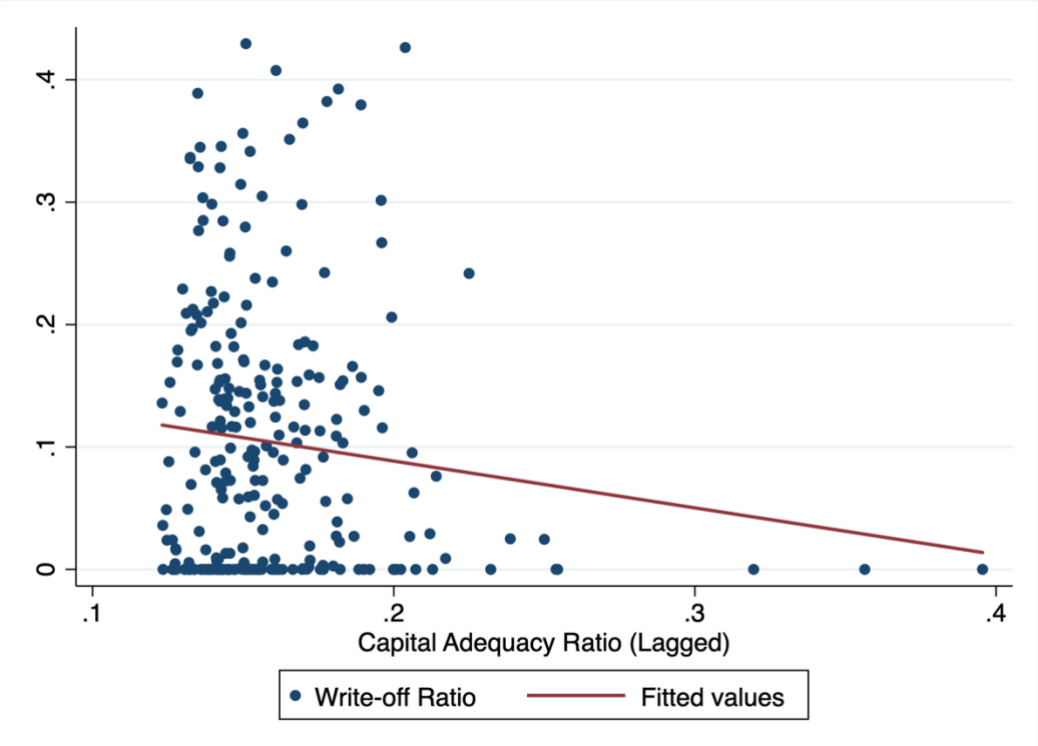

Figure 12. Plot of capital adequacy ratio (lagged) on dependent variable

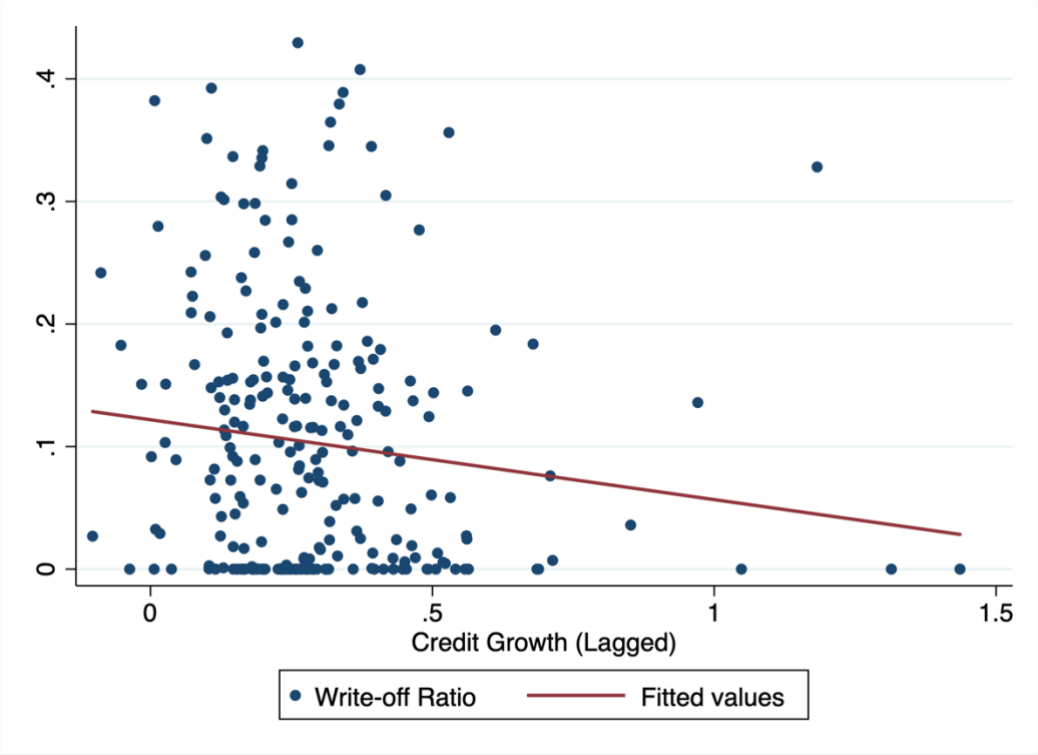

Figure 13. Plot of credit growth (lagged) on dependent variable

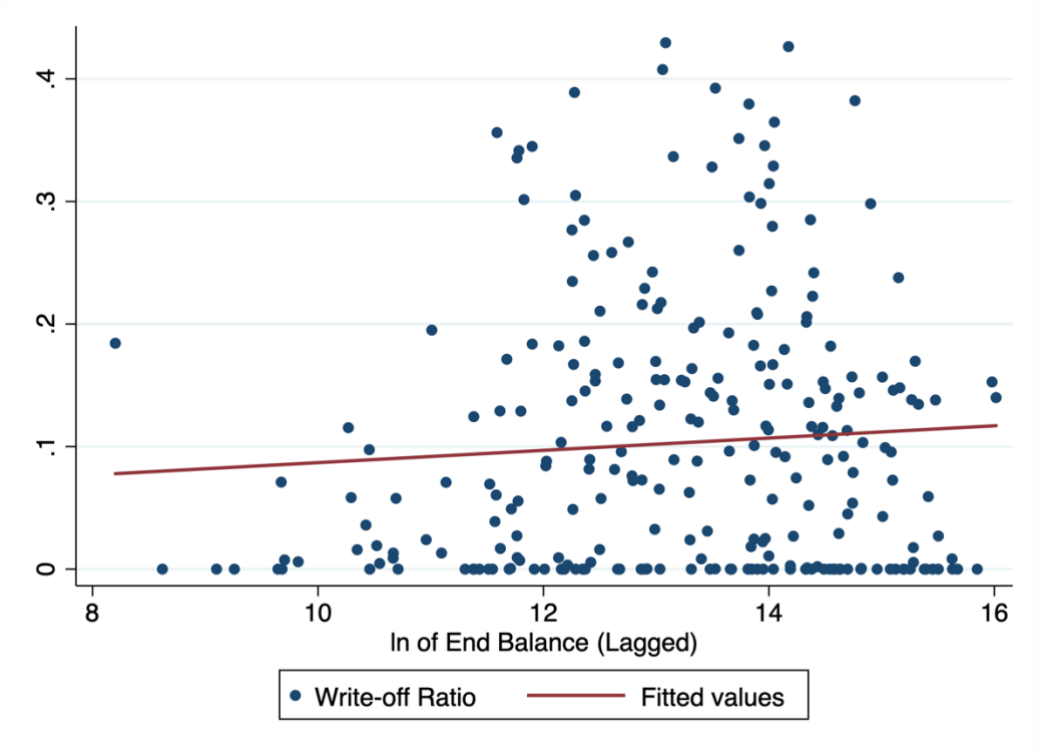

Figure 14. Plot of ln of NPL end balance (lagged) on dependent variable

4.2 Model

The model is represented as following:

$$NPLSale_{it} = \alpha_0 + \beta_i X_{i, t-1} + \gamma_i X_{i, t-2} + \varepsilon_{it}$$

where NPLSale is NPL sale ratio, proxied from write-off ratio, X is a vector of bank specific variables, and i and t represent each bank and time (yearly), respectively.

4.3 Results

Fixed-effect model is used for the panel data analysis. The estimation results are presented in Table 12. First lag of NPL ratio and natural logarithm of NPL balance have positive significant coefficients at 1% and 5% levels, respectively, whereas first lag of collection rate and capital adequacy ratio have negative significant coefficients at 5% and 10% levels, respectively. Second lag of all the dependent variables are found statistically insignificant. Although credit growth is usually associated with positive NPL growth, it does not seem to have any significant effect on NPL sale decision of a bank.

Table 12. Results

NPL Sales Ratio	Coef.	Std. Err.	t	P > |t|	[95% Conf. Interval]	
L..Bank's NPL ratio	2.481397	.6997752	3.55	0.000	1.101757	3.861036
L2. Bank's NPL ratio	.5453015	.5608587	0.97	0.332	-.5604576	1.651061
L. Credit Growth	.0235398	.0462731	0.51	0.611	-.0676897	.1147693
L2. Credit Growth	.0009914	.0015711	0.63	0.529	-0021062	.0040889
L. Collection Rate	-.1982967	.0978096	-2.03	0.044	-.3911329	-.005461
L2. Collection Rate	.0664396	.0824378	0.81	0.421	-.096093	.2289695
L. Capital Adeq. Ratio	-.6794102	.3730897	-1.82	0.070	-1.414974	.0561535
L2. Capital Adeq. Ratio	.2749851	.2589517	1.06	0.290	-.2355503	.7855205
L. Ln(Balance)	.021532	.01066118	2.03	0.044	.0006104	.0424537
_cons	-.2018642	.1718164	-1.17	0.241	-.5406083	.13688
F test that all u_i: F(21, 206) = 6.51			Prob > F = 0.000			

CHAPTER 5

CONCLUSION

Non-performing loans are both indicators and byproducts of economic crisis. Hence, it is crucial for creditors and regulators to keep them under control. Both of them could take ranges of measures to prevent stocking large amounts of non-performing loans and also reduce high non-performing loan levels to the sustainable amounts. In the case of Turkey, already existing government entity, SDIF, was initially used to cut down record high NPL ratio following 2000 and 2001 banking crisis. After the crisis, series of other measures are taken to restructure banking industry and prevent stock of non-performing loans experiencing sudden increases. Particular one regarding this thesis was the establishment of NPL purchase market. Privately-owned banks started selling their NPL portfolios to the asset management companies for the first time in 2008. Since then, more banks participated in and arranged auctions for their NPL portfolios. So far, only one public bank, Halkbank, sold its portfolio, which was in 2018. Over time, pricing and content of the portfolios, participating AMCs and regulations evolved. However, NPL purchase market matured and managed to keep NPL ratio levels between 2.7%-5.3%. As number of participating large public banks and gross loan amount of Turkish banking sector along with stock of non-performing loans are expected to increase, further growth in NPL purchase market is expected in the near future.

The empirical analysis of bank specific factors' impact on NPL sale decisions presented in this thesis suggests that all of the selected factors' first lag except credit growth have significant explanatory power on this year's NPL sale decisions.

REFERENCES

Balgova, M., Plekhanov, A., & Skrzypinska, M. (2017, December). Reducing non-performing loans: Stylized facts and economic impact. Retrieved from https://mariabalgova.github.io/Balgova_Plekhanov_SkrzypinskaNPL2.pdf

Banking Regulation and Supervision Agency. (2018). Regulation on procedures and principles for classification of loans and provisions to be set aside. Retrieved from https://www.bddk.org.tr/ContentBddk/dokuman/mevzuat_0880.pdf

Banking Regulation and Supervision Agency. (2018). Aylık bankacılık sektörü verileri. Retrieved from https://www.bddk.org.tr/BultenAylik

Banking Regulation and Supervision Agency. (2018). Varlık yönetim şirketleri. Retrieved from https://www.bddk.org.tr/Kuruluslar-Kategori/Varlik-Yonetim-Sirketleri/6

Banks' Association of Turkey. (2018). İstatistiki raporlar. Retrieved from https://www.tbb.org.tr/tr/bankacilik/banka-ve-sektor-bilgileri/istatistiki-raporlar/59

Beck, Roland and Jakubik, Petr and Piloiu, Anamaria. (2013, March 5). Non-performing loans: What matters in addition to the economic cycle? Retrieved from https://ssrn.com/abstract=2214971

European Central Bank. (2016, September 12). What are non-performing loans? Retrieved from https://ecb.europa.eu/explainers/tell-me/html/npl.en.html.

International Monetary Fund. (2004). Financial soundness indicators: compilation guide. Retrieved from https://www.imf.org/external/np/sta/fsi/eng/2004/guide/chap4.pdf

International Monetary Fund. (2018). IMF financial soundness indicators. Retrieved from http://data.imf.org/regular.aspx?key=61404590

Klein, N. (2013). Non-Performing Loans in CESEE: Determinants and Impact on Macroeconomic Performance. Retrieved from https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Non-Performing-Loans-in-CESEE-Determinants-and-Impact-on-Macroeconomic-Performance-40413

Louzis, Dimitrios, Vouldis, Angelos and Metaxas, Vasilios L., (2011, October 25). Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. Retrieved from https://www.sciencedirect.com/science/article/abs/pii/S0378426611002895

Participation Banks' Association of Turkey. (2018). Denetim raporları. Retrieved from https://www.tkbb.org.tr/denetim-raporlari

PricewaterhouseCoopers. (2018, April). Turkish NPL purchasing market. Retrieved from: https://www.pwc.com.tr/turkish-npl-purchasing-market

Salas, S., & Vicente. (2003, March 8). Credit risk in two institutional regimes: Spanish commercial and savings banks. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=382966