

RECEIVED

JAN 29 2021

S.C. SUPREME COURT

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Modification, By; Neil Garfield and Max Gardner 5 Paged with cover

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MERS - Ro Bo- Signers - Affidavit of Lynn Szymoniak Esq.- 8 pages with cover

United States District Court Illinois MERS and Ro Bo Signers - 8 pages
Petitioners RoBo signers are same has case # 12 c 10355

Assignment Ro Bo signer and for MERS Noemi Morales Assistant Secretary (she may not exist by that name)

List of fraudulent Violation to watch for. Prepare by: Neil Garfield and Max Gardner who help home owners. 5 pages red are existing fraud dark black need further investigation by a professional.

EXHIBIT D

Assignment of Deed of Trust 3 pages with cover page 1 page

Quicken Loans letter 1 page “Ocwen’s letter claim to have to interest in 2011 but are involved in the fraudulent assignment of the deed of trust in 2012 and appear on the note the same year when suddenly these documents first appeared.”

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EXHIBIT E

International Review of Financial Analysis 19 Pages-

EXHIBIT A 5 Pages.

Petitioner, previously had OCWEN Loan Services has Servicer in 2009 when she attempted to get a loan modification to amend or modify the unlawful ARM mortgage I was encourage by Quicken Loans to procure..... NEW REZ aka PHH are has of recent ~~are~~ the servicer.

EXHIBIT, attached By; Neil Garfield E. J. O'F.

Modifications Are Part of the Big Lie: Don't send that application for modification if you don't want to waive important rights.

by Neil Garfield Foreclosure Fraud Defense
Written, January 2020

The application for modification licenses New Rez aka PHH aka Ocwen to sell, distribute the personal data and transaction data to third parties. Besides the obvious problems with data privacy, this confirms the apparent voluntary participation of the homeowner in a securities scheme that was and still is concealed from the homeowner.

By filing the application the homeowner is waiving his right to keep the compensation that was paid for the homeowner's role in launching the securities scheme or to ask for more compensation. And it creates an assumption of risk by the homeowner that was, is, and always will be concealed from the homeowner. All of this is "illegal" but by signing the document the homeowner has launched a legal presumption that the document and everything on it is valid.

It reaffirms the concealed nature of the transaction in which the note and mortgage were executed and delivered. Instead of a loan agreement, the application alone establishes the authority of the New Rez aka PHH aka Ocwen to act as agent/servicer even though it has no such authority. It also makes New Rez aka PHH aka Ocwen the creditor, which means the homeowner is accepting a virtual creditor instead of a real one. And the homeowner is waiving any right to contest the standing of New Rez aka PHH aka Ocwen to administer, collect, and enforce the note and mortgage.

On behalf of a client, I recently received an "offer" for my client to apply for a modification. My response is going to be that we would be happy to apply for modification if New Rez aka PHH aka Ocwen can demonstrate (a) that the loan account receivable exists, (b) that U.S. Bank owns it on behalf of either a trust or certificate holders and (c) that New Rez aka PHH aka Ocwen can demonstrate that they have been authorized to act as agent/servicer for a creditor who owns the underlying obligation because (a) they paid for it and (b) they received a conveyance of ownership of the debt as part of a purchase transaction from someone who owned the loan account receivable. Of course I know that they cannot do that. I know it because along with Patrick Giunta, Esq. in Fort Lauderdale all of that was established beyond any doubt. the Judge found that the trust, the trustee, and the agent/servicer (Ocwen) had no relationship to the debt, note, or mortgage but may have had possession of a note (now lost) that might have been an original. Final Judgment for the homeowner. In fact, at trial, the robo witness was dumbfounded when he realized that the fabricated "Power of

Attorney" appointing Ocwen as servicer and as an "attorney in fact" had been not only false but incorrectly created with Chase being the grantor. Chase had nothing to do with this case.

But because they did not file the "original note" until after the lawsuit began — in 2008 — the judge felt compelled under Florida law to enter judgment for the homeowner with findings of fact that disposed of the merits of the case but dismissing the case without prejudice. That is because finding that there was not even the allegation of possession of the note before the filing of the lawsuit there was no jurisdiction. And no jurisdiction means the court is powerless to do anything but dismiss the case.

So the lawyers refiled the case even though there has been a complete negative adjudication of all facts necessary to prove a prima facie case for foreclosure. And they barely managed to squeak through a motion to dismiss because the defense of res judicata is an affirmative defense and so we will file our own motion for summary judgment.

The first interesting thing about all this is that the lawyers chose to file a case that they had already lost. Why? Well until two weeks ago, the law in that District was that there was no claim for attorney fees if the homeowner won because they established that the named claimant lacked legal standing — a fancy way of saying no case.

The recovery of attorney fees can only be based upon statute or contract. There is no statute that specifically grants the right to recover attorney fees when the named Plaintiff loses a foreclosure case. But there is the contractual provision in the note and mortgage for recovery of fees and Rule 57.105 Fla. R.C.P. that says that such provision is reciprocal.

BUT once the homeowner proves that the Plaintiff is NOT part of the contract, the law WAS that having proven that there was no contractual relationship between the Plaintiff and the homeowner,

the homeowner was barred from taking advantage of the attorney's fees provision in that contract. All of that may seem to have some logic except for one thing: it was the Plaintiff who invoked the contract when they started the lawsuit asking for attorney fees and when they were shown to be lying, there are about a dozen reasons why they should not escape an award of attorney fees and costs. And that is what the Florida Supreme Court found. So now the attorneys have filed a new lawsuit that they thought had no risk if they lost; but they have a huge risk because the premise under which they were operating was not only wrong but downright malevolent. The playbook is designed to wear the homeowner down even if there is no case against the homeowner.

And so it is interesting that the unauthorized agent/servicer New Rez aka PHH aka Ocwen, constantly changing names to confuse the recipient, is now sending an "offer" to allow my client to apply for a

modification. And just to be clear, that is no offer at all. They're not saying they will consider it, grant it, or even that they are offering it on behalf of some named creditor. And that is why I scored points by filing three motions for sanctions against the opposing side which were granted. They showed up at "mediation" without any authorized person to settle the case. They were only authorized to offer to allow the homeowner to apply for a modification.

This particular offer was sent pursuant to a settlement agreement with the Florida Attorney General that requires them to modify loans. The AG office of course made the same mistake as all law enforcement and all regulators, to wit: that the agent/servicer was actually authorized to modify. In fact, the agreement can now be used to argue that they must have had the authority to modify — why else would that agreement require modification? THE AG was either hoodwinked or playing along. I don't know.

But the main point of the modification is clear. It changes the falsely labeled loan agreement executed by the homeowner into something entirely different. Instead of a loan contract, the proposed application for modification changes the transaction forever. Perhaps the better description is that it reaffirms the concealed nature of the transaction in which the note and mortgage were executed and delivered. Instead of a loan agreement, the application alone establishes the authority of the New Rez aka PHH aka Ocwen to act as agent/servicer even though it has no such authority. It also makes New Rez aka PHH aka Ocwen the creditor, which means the homeowner is accepting a virtual creditor instead of a real one. And the homeowner is waiving any right to contest the standing of New Rez aka PHH aka Ocwen to administer, collect, and enforce the note and mortgage.

So there you have it. That is the reason they sent it. It was designed to lure me into sending this to my client in order to establish a fact that doesn't exist and a fact that has already been defeated — standing for either the named Plaintiff (U.S. Bank as trustee for SASCO, etc) or anyone else designated by New Rez aka PHH aka Ocwen. If they had been successful they might have a shot on the second lawsuit. And it now licenses New Rez aka PHH aka Ocwen to sell, distribute the personal data and transaction data to third parties. Besides the obvious problems with data privacy, this confirms the apparent voluntary participation of the homeowner in a securities scheme that was and still is concealed from the homeowner.

By filing the application the homeowner is waiving his right to keep the compensation that was paid for launching the securities scheme or ask for more. And it creates an assumption of risk by the homeowner that was, is, and always will be concealed from the homeowner. All of this is "illegal" but by signing the document the homeowner has launched a legal presumption that the document and everything on it is valid. And it makes the unauthorized agent/servicer the agent of the homeowner! The account holder(s) [label establishes homeowner as holder of an account that exists] consent [uninformed consent] to the disclosure by my servicer [affirms "servicer" as agent] or authorized third party,* [i.e, anyone and there is no referenced asterisk at the end of the document], or any investor/guarantor [note the introduction of new parties] of my mortgage loan(s) [affirming it is a

mortgage loan], of any personal and non-personal information during the mortgage assistance process and of any information about any relief I receive, to any third party that deals with my first lien [affirming lien] or subordinate lien (if applicable) mortgage loan(s), including Fannie Mae, Freddie Mac or any investor, insurer, guarantor, or servicer of my mortgage loans(s) or any companies that provide support to them, for purposes permitted by law. Personal information may include, but is not limited to: (a) my name, address, telephone number; (b) my Social Security Number; (c) my credit score; (d) my income; and (e) my payment history [affirming payments were due] and information about account balances and activity and (f) my tax return and the information contained therein. I/We hereby authorize the servicer to release, furnish, and provide information related to my/our account to: [BLANK FOR ANYONE TO FILL IN LATER IF THEY NEED IT]

The Florida AG fell for this hook, line, and sinker. So have most homeowner and their lawyers. Take a closer look and ask yourself why they would have such wording if they were truly sure of their status as an agent for a lender, and why they wouldn't announce guidelines for what the "modifications" would look like if "granted" and on whose behalf they are allegedly "modifying" the transaction falsely labeled as a loan. Every correspondence offering the hope of modification is a potential trap for homeowners who frankly, in my opinion, owe nothing. They were paid money equal to at most 8 1/2% of their revenue generated by these securities scheme, everyone received every payment to which they were entitled, and then they signed a note to give it back because they thought it was a loan.

But if it was a loan then there would have been an identifiable lender who had an entry on its accounting ledgers showing payment of value for the underlying debt. No such entity exists because the investment bankers were securities brokers and security brokers are interested in trading securities. They had no intention of assuming any risk of loss on nonperforming loans, so they made sure that the transaction looked like a loan but wasn't. They had no interest in lending and they did not lend money. Investors loaned money to the brokerage firms. And nobody complied with lending statutes because there was no lender.

Nobody paid me to write this. I am self-funded, supported only by donations. My mission is to stop foreclosures and other collection efforts against homeowners and consumers without proof of loss. If you want to support this effort please click on this link and donate as much as you feel you can afford.

*

Neil F Garfield, MBA, JD, 73, is a Florida licensed trial and appellate attorney since 1977. He has received multiple academic and achievement awards in business and law. He is a former investment banker, securities broker, securities analyst, and financial analyst.

EXHIBIT B Assignment of Deed of Trust 02/06/2012 FRAUDULENT

RE: MERS

**MERS Bifurcation Negotiable Instrument Security Instrument
It's Called Bifurcation**

MERS can file a "Notice of Assignment" of the "Security Instrument" but MERS cannot negotiate the Negotiable Instrument since MERS never came into possession of the Negotiable Instrument. The fact here that MERS assigned the Security Instrument verifies that bifurcation (separation) of the Security Instrument from the Negotiable Instrument has taken place. Since this was done, the Negotiable Instrument no longer has a "Secured" status and as such the Negotiable Instrument is now an "Unsecured" indebtedness between the Negotiable Instrument and the Security Instrument can be proved up by following the Uniform Commercial Code or the states equal by showing the properly filed chain of Endorsements, and more..

ROBO SIGNED Cory Messer employee of Ocwen Loan Services /Ro-Bo Signer
Servicer of Petitioner's mortgage was Ocwen in 2012

Noemi Morales Ro- Bo Signer

006851-00577

Prepared by: Nadine Alvarez
When Recorded Mail To:
Ocwen Loan Servicing, LLC
1661 Worthington Road, Suite 100
West Palm Beach, Florida, 33409
Phone Number: 561-682-8835

201200000648 02/06/2012 AT 10:22 AM
OR Volume 0822 Page 0122 - 0122
Filed for Record in JASPER COUNTY ROD
Assignment Fee: \$6.00

Attorney Code:
MIN: 100039046783210673
MERS Ph.#: (888) 679-6377

**ASSIGNMENT OF MORTGAGE
SOUTH CAROLINA**

This ASSIGNMENT OF DEED OF TRUST from MORTGAGE ELECTRONIC REGISTRATION SYSTEMS, INC.(MERS), as nominee for QUICKEN LOANS INC. whose address is PO Box 2026 Flint, MI 48501-2026, its successors and assigns, ("Assignor) to DEUTSCHE BANK NATIONAL TRUST COMPANY, AS TRUSTEE FOR GSAA HOME EQUITY TRUST 2006-17, ASSET-BACKED CERTIFICATES, SERIES 2006-17, whose address is c/o Ocwen Loan Servicing, LLC, 1661 Worthington Road, Suite 100, West Palm Beach, Florida, 33409, (Assignee) all its rights, title and interest in and to a certain mortgage duly recorded in the Office of the County Recorder of JASPER County, State of SOUTH CAROLINA, as follows;

Mortgagor: LOUISE LEGARE-GARDNER
Mortgagee: MORTGAGE ELECTRONIC REGISTRATION SYSTEMS, INC. ACTING SOLELY AS NOMINEE FOR QUICKEN LOANS INC.
Document Date: JULY 24, 2006
Amount: \$188,000.00
Recording Date: AUGUST 01, 2006
Book/Volume/Docket/Liber: 0452
Page/Folio: 0231
Instrument: 200600003834
Property address: 1471 SOUTH OKATIE HIGHWAY, HARDEEVILLE, SC

Property described as follows:

LEGAL DESCRIPTION:

All that certain piece, parcel or lot of land lying, being and situate in Jasper County, South Carolina, being known as Lot C, Phase III, Delta Plantation Estates, containing 0.87 acres, more or less. For a more detailed description reference is craved to that certain Survey prepared for Steve Hobbs by Sea Island Land Survey, LLC, dated June 20, 2006 and recorded in Plat Book _____ at Page _____ in the Office of the Clerk of Court for Jasper County, South Carolina.

This being a portion of the same property conveyed to Borrower by Deed from Cook & Cook Associates, LLC dated July 24, 2006 recorded in the Office of the Clerk of Jasper County in Deed Book _____ at Page _____ on _____, 2006.

This Assignment is made without recourse, representation or warranty.
DATED: JANUARY 27, 2012

**MORTGAGE ELECTRONIC REGISTRATION SYSTEMS, INC.
(MERS)**

BY: _____

NAME: Noemi Morales
TITLE: Assistant Secretary

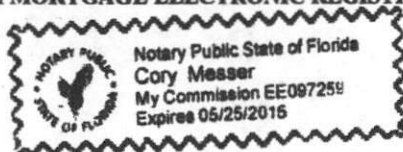
STATE OF FLORIDA }
 }SS.
COUNTY OF PALM BEACH }

Signed, sealed and delivered in the presence of:

(1) _____
Name: **Harrison Whittaker**

(2) _____
Name: **Vanessa Pino**

The foregoing instrument was acknowledged before me this 27TH day of JANUARY, 2012, by Noemi Morales the Assistant Secretary of MORTGAGE ELECTRONIC REGISTRATION SYSTEMS, INC. He/She is personally known to me.



Notary Public - **Cory Messer**

EXHIBIT C

MERS

AFFIDAVIT OF LYNN E. SZYMONIAK, ESQ

Miss Szymoniak 2017

CBS News) When we first met Lynn Szymoniak on 60 Minutes last year, she was an angry homeowner facing foreclosure. Now, Szymoniak is walking away with an \$18 million settlement after blowing the whistle on a "robo-signing" fraud that she says was perpetrated by some of the nation's largest mortgage companies.

"Robo-signing" is the illegal practice of forging mortgage documents. As 60 Minutes learned in its investigation last year (video below), the documents underpinning homeowners' mortgages are sometimes missing or nonexistent. Banks need such documents to foreclose on a homeowner, so some banks have resorted to fraud: creating phony or "robo-signed" paperwork to throw people out of their homes.

Szymoniak uncovered the "robo-signing" fraud while fighting to save her Florida home from foreclosure. After receiving what she considered to be fake paperwork from her bank, Szymoniak -- a lawyer and fraud investigator -- began investigating tens of thousands of documents in other foreclosure cases that appeared to be falsified.

U.S. EX REL. SZYMONIAK v. STATES OF CALIFORNIA; et al

IN Regards to Noemi Morales and Cory Messer

See: In The United States District Court For the Northern District of Illinois Eastern Division
Herbert Elesh Plaintiff v, MERS case number 12C 10355

There are thousands of evidence regarding these Ro-Bo signers I have no time to research then all. Petitione, needs a full investigation of the Respondents documents by a private professional fraud investigator. They have not yet provided the required legal lawful original documents that proves their claim. "Copies that they provide can be attained anywhere including county website etc"

STATE OF NEW YORK
SUPREME COURT COUNTY OF QUEENS INDEX NO.: 13XXX/2009

DEUTSCHE BANK NATIONAL
TRUST COMPANY AS TRUSTEE
FOR AMERICAN HOME MORTGAGE
ASSETS TRUST 2006-5, et al.,

Plaintiff,

vs.

PXXXXXX DXXXXX, et al.,

Defendants,

AFFIDAVIT OF LYNN E. SZYMONIAK, ESQ., AS
DEFENDANTS' EXPERT

STATE OF NEW YORK
COUNTY OF NASSAU

LYNN E. SZYMONIAK, Esq., having been duly sworn, does state the following:

1. I am an adult citizen of the United States, and have resided in Palm Beach County, Florida since 1979.
2. I am an attorney and was admitted to the Florida Bar in 1980.
3. For the past twenty years, my practice has primarily in cases involving white-collar crime allegations, particularly, in representing major insurance companies in claims that they have been defrauded by large policyholders.

4. In the last ten years, I have also served as an expert witness in civil and criminal cases. In criminal cases, I have served as an expert witness for the United States of America and the State of California. I have testified at trial in two federal court cases in Jacksonville, Florida, where the allegations involved false and fabricated documents including fabricated insurance policies and certificates of insurance. The two cases were United States v. Thomas King, Case No. 3:05-cr-52-J-99MMH, Middle District of Florida, Jacksonville Division and United States v. Donald Touchet, et al., Case No. 3:2007cr00090, Middle District of Florida, Jacksonville Division. The Eleventh Circuit Court of Appeals approved of my designation as an expert and the admission of my testimony in U.S. v. Jennings, Case No. 08-13434, (C.A. 11, Mar. 16, 2010). I also submitted an expert opinion for the government in a New York Northern District federal case that ended in a guilty plea: United States v. James Kernan, Case No. 5:2008cr00061. I have also submitted an expert opinion in a criminal case currently pending in the Middle District of Florida and in a state case currently pending in California, both involving fraudulent insurance documents.

5. I was formerly a Certified Fraud Examiner, and have had nine hours training by the National Association of Certified Fraud Examiners in identifying forged and fabricated documents, in a course taught by retired agents of the FBI. I have also written several articles on mortgage fraud, including "*An Officer of Too Many Banks*" and "*Mortgage Assignments As Evidence of Fraud*" and have lectured on fraudulent documents used in foreclosure actions.

6. I have examined a copy of the Assignment of Mortgage in the foreclosure action presently before this Court, a copy of which is attached hereto. In the upper left-hand corner of this document, the following statement appears:

Document Prepared By:
Ron Meharg 888-362-9638

When Recorded Return To:
DOCX
1111 Alderman Dr.
Suite 350
Alpharetta, GA 30005

7. I have examined 1200 other Mortgage Assignments also bearing the same information as described directly above, indicating that the Assignments were prepared by a company operating as "DOCX" in Alpharetta, GA. I obtained copies of most of these Assignments by accessing them through Official Records online services of counties in Florida and Massachusetts. I have also examined such Assignments from New York, Arizona, California, Illinois, New York and other states. I have spent over 200 hours examining these documents and comparing the signatures and job titles thereon.

8. On at least 200 of these Docx-prepared Assignments, the signatures of Korell Harp and Tywana Thomas appear, as officers of various lending institutions or related mortgage-servicing companies, as they do in the Mortgage Assignment in the instant case. I personally called the offices of Docx, LLC in Alpharetta, Georgia and confirmed that Harp and Thomas were actually employed in clerical positions at Docx and were not officers of MERS or any other bank or mortgage company, despite their representations on recorded documents.

9. Although the Harp and Thomas signatures on most of these documents were witnessed and notarized, I have concluded the following:

- a) Korell Harp and Tywana Thomas used a variety of conflicting job titles on Assignments of Mortgages in 2008 and 2009, holding themselves out to be officers of numerous different banks and mortgage-related entities, often using numerous conflicting titles in the same week. Harp has claimed to be the following in 2008 and 2009:**

Vice President, American Brokers Conduit;

Vice President, American Home Mortgage Acceptance, Inc.;

Vice President, American Home Mortgage Servicing, Inc.;

Vice President, American Home Mortgage Servicing, Inc. as successor-in-interest to Option One Mortgage Corporation;

Vice President & Asst. Secretary, Argent Mortgage Company, LLC by Citi Residential Lending, Inc., as Attorney in Fact;

Vice President, J.S. Shirk and Associates, Inc. by American Home Mortgage Servicing, Inc., as Attorney-In-Fact;

Vice President, Mortgage Electronic Registration Systems, Inc.;

Vice President, Mortgage Electronic Registration Systems, Inc., as nominee for American Brokers Conduit;

Vice President, Mortgage Electronic Registration Systems, Inc., as nominee for American Home Mortgage Acceptance, Inc.;

Vice President, Mortgage Electronic Registration Systems, Inc., acting solely as a nominee for HLB Mortgage; and

Vice President, Sand Canyon Corporation, f/k/a Option One Mortgage.

Thomas has claimed to be the following in 2008 and 2009:

Asst. Vice President, American Home Mortgage;

Asst. Vice President, American Home Mortgage Acceptance, Inc.;

Asst. Vice President, American Home Mortgage Servicing, Inc.;

Vice President & Asst. Secretary, American Home Mortgage Servicing, Inc., as servicer for Ameriquest Mortgage Company;

Vice President & Asst. Secretary, American Home Mortgage Servicing, Inc., as servicer for Argent Mortgage Company, LLC;

Asst. Vice President, American Home Mortgage Servicing, Inc. as successor-in-interest to Option One Mortgage Corporation;

Vice President & Asst. Secretary, Argent Mortgage Corporation, LLC by Citi Residential Lending, Inc., as Attorney in Fact;

Asst. Vice President, Deutsche Bank National Trust Company as Indenture Trustee for American Home Mortgage Investment Trust 2005-2 Mortgage-Backed Notes, Series 2005-2 by American Home Mortgage Servicing, Inc, as Attorney-in Fact;

Vice President & Asst. Secretary, Inc., as servicer for Deutsche Bank National Trust Company, as trustee for, Ameriquest Mortgage Securities, Inc., asset-backed pass-through certificates, series 2004-R7, under the pooling and servicing agreement dated July 1, 2004;

Asst. Secretary, Mortgage Electronic Registration Systems, Inc.;

Asst. Secretary, Mortgage Electronic Registration Systems, Inc., as nominee for American Brokers Conduit;

Asst. Secretary, Mortgage Electronic Registration Systems, Inc., acting solely as nominee for American Home Mortgage;

Asst. Secretary, Mortgage Electronic Registration Systems, Inc., as nominee for American Home Mortgage Acceptance, Inc.;

Asst. Vice President, Mortgage Electronic Registration Systems, Inc., as nominee for Family Lending Services, Inc.;

Asst. Secretary, Mortgage Electronic Registration Systems, Inc., acting solely as a nominee for HLB Mortgage;

Asst. Vice President, Mortgage Electronic Registration Systems, Inc., as nominee for Homestar Mortgage Lending Corp.;

Asst. Vice President, Mortgage Electronic Registration Systems, Inc., A Separate Corporation that is acting solely as Nominee for Lender and Lender's successors and assigns [Beckman Mortgage Corporation];

Asst. Vice President, Nationwide Home Loans, Inc, by American Home Mortgage Servicing, Inc., as Attorney-In-Fact;

Asst. Vice President, Option One Mortgage Corporation;

Asst. Vice President, Sand Canyon Corporation f/k/a Option One

Mortgage Corporation; and

Asst. Vice President, Wells Fargo Bank, N.A., as Trustee for First Franklin Mortgage Loan Trust 2002-FF1, Asset-Backed Certs., Series 2002-FF1.

b) The signatures of Korell Harp and Tywana Thomas vary significantly on the Mortgage Assignments, making it very unlikely that the same person signed these documents, despite the information in the notary's statement. Some of the many variations appear on the Assignments attached hereto, and illustrate the significantly different signatures of Harp and Thomas appearing on these Assignments that support my conclusion that these signatures and job titles are forgeries and fabrications.

10. Based on the above conclusions, I reported this concern over the DOCX Assignments to the State Attorney in Palm Beach County, to Florida Treasurer Alex Sink, to the Florida Attorney General, to the U.S. Justice Department, to the FDIC, to Phil Angelides, the Chairman of the Financial Crisis Inquiry Commission and others.

11. I am also familiar with the mortgage securitization process and I have written several articles regarding mortgage securitization. The trust referenced on the Assignment in this case would have had a closing date or cut-off date, the final date when properties could have been added to the trust under the terms of the Pooling and Servicing Agreement that governed the trust, in 2006. Because this Assignment purports that the effective date of the Assignment to the trust was May 12, 2009, I have further concluded that the information on this assignment is false.

12. In my review of the Docx-prepared Assignments, I have found at least 12 Assignments where the Grantor or Grantee is listed as "Bogus Assignee for Intervening Assts." I have also found two Assignments where the Grantor or

Grantee is listed as "A Bad Bene." I have also found at least 12 Assignments where the effective date is listed as 9/9/9999. I have also found numerous assignments where MERS is listed as the original lender, when I know that MERS never acted as a lender. I have also found many Assignments where the original loan amount is listed as \$0.00 or \$0.01. Based on all of the above, I have concluded that Assignments prepared by Docx, including the Assignment in the present case, contain forged, false and fabricated information.

FURTHER AFFIANT SAYETH NOT.

LYNN E. SZYMONIAK, ESQ.
szymoniak@mac.com
The Szymoniak Firm, P.A.
The Metropolitan, PH2-05
403 S. Sapodilla Ave
West Palm Beach, FL 33401

AN ATTORNEY, NOT LICENSED TO
PRACTICE IN NEW YORK

COUNTY OF NASSAU
STATE OF NEW YORK

Before Me, the undersigned authority, on this ____ day of March, 2010, personally appeared LYNN E. SZYMONIAK, identified to me to be the person whose name is subscribed to the foregoing Affidavit, and acknowledged that she executed the same for the purposes therein contained.

In witness whereof, I here unto set my hand and official seal.

EXHIBIT C 8 Pages

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

HERBERT ELESH,)	
)	
Plaintiff,)	
)	
vs.)	Case No. 12 C 10355
)	
MORTGAGE ELECTRONIC)	
REGISTRATION SYSTEMS, INC.)	
and DEUTSCHE BANK)	
NATIONAL TRUST CO.,)	
)	
Defendants.)	

MEMORANDUM OPINION AND ORDER

MATTHEW F. KENNELLY, District Judge:

Herbert Elesh has sued Mortgage Electronic Registration Systems, Inc. (MERS) and Deutsche Bank National Trust Co. After the Court's ruling on defendants' earlier motion to dismiss, see *Elesh v. Mortg. Elec. Registration Sys., Inc.*, No. 12 C 10355, 2013 WL 4476547 (N.D. Ill. Aug. 16, 2013), Elesh's single remaining claim against the defendants is a state law quiet title claim. Defendants have moved for summary judgment. For the reasons stated below, the Court grants defendants' motion.

Background

On March 4, 2005, Elesh executed a mortgage on a home in Arlington Heights, Illinois. The mortgage secured a promissory note for \$147,000, payable to Decision One Mortgage Company. The mortgage document said that Elesh "does hereby mortgage, grant and convey to MERS (solely as nominee for Lender and Lender's successors and assigns) and to the successors and assigns of MERS," the property in

question. Mortgage, p. 2. MERS, as nominee for Decision One Mortgage, then assigned the mortgage to Deutsche Bank as trustee. The assignment was entered into "as of" September 1, 2010, but it was signed or "acknowledged" by MERS on January 12, 2011. Am. Compl., Ex. B.

Ocwen Loan Servicing prepared the assignment of mortgage in its capacity as servicer of Elesh's loan and attorney-in-fact (agent) for Deutsche Bank. Defs.' R. 56.1 Stat. ¶4; Pl.'s Resp. to Defs.' R. 56.1 Stat. ¶ 4. Christina Carter, an employee of Ocwen, was appointed by MERS as a "signing officer." Defs.' R. 56.1 Stat. ¶¶ 6-7; Pl.'s Resp. to Defs.' R. 56.1 Stat. ¶¶ 6-7. She regularly executed assignments on behalf of MERS. Defs.' R. 56.1 Stat. ¶ 9; Pl.'s Resp. to Defs.' R. 56.1 Stat. ¶ 9.

Deutsche Bank filed a mortgage foreclosure suit against Elesh in May 2012. In September 2012, Elesh filed a motion to dismiss and a counterclaim disputing the validity of the mortgage assignment. Judge Guzman dismissed Deutsche Bank's foreclosure suit on May 21, 2013 for lack of subject matter jurisdiction. *Deutsche Bank Nat'l Trust Co. v. Elesh*, No. 12 C 3644, 2013 WL 2242452 (N.D. Ill. May 21, 2013). Judge Guzman ruled that Deutsche Bank had failed to show that it owned the promissory note or even that the note it offered was authentic (the witness Deutsche Bank presented had no personal knowledge of any of the matters on which the witness was called to testify). *Id.* at *1. Judge Guzman therefore dismissed Deutsche Bank's suit for lack of standing. *Id.*

In November 2012, Elesh filed the present suit against MERS in state court. He sought to quiet title on the Arlington Heights property. Specifically, he requested a finding that the mortgage and assignment were void or invalid. In December 2012,

MERS removed the case to federal court and filed a motion to dismiss. The Court ruled that Deutsche Bank was a necessary party. In June 2013, Elesh filed an amended complaint naming Deutsche Bank as an additional defendant. Deutsche Bank adopted MERS's motion to dismiss. *Id.*

Elesh's amended complaint includes five claims, in each of which he contended the mortgage was void or invalid. The Court dismissed four of the claims—attacking the mortgage itself—for failure to state a claim. *Elesh*, 2013 WL 4476547, at *3. Elesh's only remaining claim is Count 5, a quiet title claim in which he challenges the assignment of the mortgage to Deutsche Bank. The Court found that Elesh had standing to challenge the mortgage assignment and therefore allowed that claim to proceed. *Id.* at *3-4.

Discussion

MERS and Deutsche Bank have moved for summary judgment. Summary judgment is appropriate "if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). The Court views the evidence in the light most favorable to the non-moving party. *Id.* To avoid summary judgment, the opposing party must "point to evidence that can be put in an admissible form at trial, and that, if believed by the fact-finder, could support judgment in his favor." *Marr v. Bank of America, N.A.*, 662 F.3d 963, 966 (7th Cir. 2011). *See also, Smiley v. Columbia Coll. Chicago*, 714 F.3d 998, 1004 (7th Cir. 2013) (testimony offered in affidavit form on summary judgment motion must be admissible to be considered).

As indicated earlier, Count 5 is a claim to quiet title. An action to quiet title is a

proceeding in which a party seeks to remove a cloud on his title to real property.

Gambino v. Boulevard Mortg. Corp., 398 Ill. App. 3d. 21, 52, 922 N.E.2d 380, 410

(2009). A cloud on title is the semblance of title that appears in some legal form but that is actually unfounded or would be inequitable to enforce. *Id.*

In Count 5, Elesh alleges that the assignment of the mortgage to Deutsche Bank is void or was never valid because Christina Carter, the designated signer, did not actually sign the assignment; Elesh contends her signature was forged. Elesh also alleges that the purported drafter of the assignment, Cory Messer, listed a Florida attorney code number that was actually assigned to another person, who died in 2009.

Defendants argue that Elesh cannot prove that the assignment of mortgage is fraudulent. They have submitted an affidavit from Christina Carter in which she verifies the signature on the assignment is hers, though she does not specifically recall signing this particular assignment. With regard to the attorney code issue, defendants have submitted an affidavit from Rashad Blanchard, who notarized Carter's signature. Besides attesting that he recognizes the signature as Carter's, Blanchard states that "attorney code 14946" is an internal Ocwen number used to designate the firm that was to record the assignment—in this case the law firm of Burke, Costanza & Carberry LLP—and that use of the code was not intended to designate a Florida bar number.

A. Christina Carter's signature on the assignment of mortgage

Elesh contends that Christina Carter's signature on the mortgage assignment was forged and that as a result the assignment is void or invalid. In support of this argument, Elesh provides affidavits from himself and his wife Yumiko Elesh. Yumiko Elesh says the following in her affidavit:

- "Christina Carter has acknowledged and communicated that her supervisor in 2010-2011 was Noemi Morales and she was forging Christina Carter's signature on assignments of mortgage with the knowledge and consent of Ocwen management"
- "Christina Carter has written in 2013 about the forgeries of her signature on legal documents at Ocwen, which I have read, and has stated orally the forgeries were known by and consented to by Ocwen's management She wrote about the forgeries of her signature on assignments of mortgage by Noemi Morales after she was served with a subpoena [in this case]. She has admitted orally the forgeries of her signature at Ocwen were by Noemi Morales and Johnna Miller"

Pl.'s Ex. 2 ¶¶ 2 & 4. Herbert Elesh says essentially the same thing in his affidavit; he likewise reports what Carter communicated to him. See Pl.'s Ex. 3 ¶¶ 2 & 4.

Elesh also offers an affidavit from John O'Brien, the Register of Deeds of the Southern Essex District in Massachusetts; O'Brien says he is "aware that Christina Carter is an alleged robo or surrogate signer." Pl.'s Ex. 1 ¶ 3. O'Brien defines a robo-signer as someone who signs previously-prepared documents affecting title to real property without reading them, "in robotic-like fashion." *Id.* ¶ 2. He defines a "surrogate signer" as someone who signs a legal document on behalf of or in the name of someone else, without reading or understanding the document. *Id.* O'Brien does not have anything to say, however, about the particular document at issue in this case. Elesh also offers an affidavit from John B. Moran, a forensic document examiner, but Moran likewise offers no opinion or conclusion regarding the assignment at issue in this

case other than to state that Carter "is a known notorious Robo-Signer" and that an Internet search revealed information regarding inconsistencies in her signature, information that Moran does not describe. Pl.'s Ex. 4, p. 6.

The evidence that Elesh has offered, to the extent it is admissible, is insufficient to show a genuine factual dispute regarding the authenticity of Carter's signature on the assignment of Elesh's mortgage. As the Court has indicated, the affidavits submitted by O'Brien and Moran do not address any particular documents purportedly signed by Carter, let alone the assignment at issue here. The affidavits by the Eleshes, in which they describe what Carter told them about forgeries of her signature, are inadmissible hearsay—specifically, Carter's statements recounted in the affidavits are out-of-court statements, which the Eleshes offer to prove the truth of the matters asserted in the statements. See Fed. R. Evid. 801(c). Because Carter's statements are inadmissible, the Eleshes' recounting of them via their affidavits is not appropriately considered in the present context. See Fed. R. Civ. P. 56(c)(4) (declarations in support of motions for summary judgment must be made on personal knowledge and set forth facts that would be admissible in evidence). And even if Carter's out-of-court statements to the Eleshes were somehow admissible, they, too, are simply general statements about forgeries of her signature; the statements do not contradict or undermine Carter's specific and focused averment in her affidavit that the signature on the assignment of Elesh's mortgage is her genuine signature.

B. The attorney code number

Elesh also alleged the mortgage assignment is void or invalid because Cory Messer, its drafter, allegedly put a dead attorney's Florida bar number on the document.

In response, defendants have offered evidence explaining that the number on the draft was an internal number used by Ocwen to designate the law firm it would use to deal with the assignment of mortgage. In short, the number was not a Florida attorney number at all. Elesh has not responded to defendants' argument and has offered no contrary evidence. He is therefore deemed to have conceded or abandoned the point.

C. The promissory note

Elesh also argues, as he has before, that the promissory note that he executed is void. But that is not the basis of his remaining claim; Count 5 is based on his contention that the assignment of the mortgage is void or invalid. That contention does not involve any issue regarding the underlying note. Moreover, as the Court stated in its decision on defendants' motion to dismiss, the fact that MERS has never held the note does not mean the mortgage is invalid. See *Elesh*, 2013 WL 4476547, at *3. In addition, the Court has already rejected Elesh's claim, repeated in his summary judgment response papers, regarding the separation of the mortgage and the underlying debt. See *id.* Elesh has offered no good reason for the Court to revisit that contention here.

Conclusion

Plaintiff has failed to offer admissible evidence from which a reasonable finder of fact could conclude that the assignment of mortgage had a forged signature or was otherwise void or invalid. Defendants are therefore entitled to summary judgment on plaintiff's remaining claim (Count 5 of the amended complaint). The Court grants their motion for summary judgment [dkt. no. 57] and directs the Clerk to enter judgment in

favor of defendants.


MATTHEW F. KENNELLY
United States District Judge

Date: August 5, 2014

COMPLETE LIST OF FRAUDULENT VIOLATIONS TO WATCH FOR,
Respondent must provide required original documents. Red are Violations --- Dark Black are questionable and need professional investigation, Note previously provided is Void for Fraud

List provided by Foreclosure Law Firms who are protecting homeowners from fraudulent foreclosures.

1. *The Mortgage or Deed of Trust is assigned from the Originator directly to the Trustee for the Securitized Trust.*
2. *The Mortgage or Deed of Trust is assigned months and sometimes years after the date of the origination of the underlying mortgage note.*
3. *The Mortgage or Deed of Trust is assigned from the initial aggregator directly to the Securitized Trust with no assignments to the Depositor or the Sponsor for the Trust.*
4. *The Mortgage or Deed of Trust is executed, dated or assigned in a manner inconsistent with the mandatory governing rules of Section 2.01 of the Pooling and Servicing Agreement.*
5. *The assignment of the Mortgage or Deed of Trust is executed by a legal entity that was no longer in existence on the date the document was executed.*
6. *The mortgage note is allegedly transferred in a single document along with the Mortgage or Deed of Trust (i.e., "Assignment of the Note and Mortgage"). You cannot "assign" a mortgage note. You can only "negotiate" a mortgage note under Article 3 of the UCC*
7. *The assignment is executed by an officer or secretary of MERS.*
8. *The assignment is notarized by a secretary or paralegal employed by the attorney for the mortgage servicer.*
9. *The assignment is executed or notarized by an employee of MR Default Services, Promiss Solutions LLC, National Default Exchange, LP, LOGS Financial Services, or some similar third-party*
10. *The allonge is not "permanently" affixed to the original note. The term permanent excludes the use of staples and tape and as a result you must use a solid fastener such as glue. Allonges are commonly referred to "in the business" as "tear-off fraud papers."*
11. *The note proffered in evidence is not the original but a copy of the "certified copy" provided to the debtors at the closing.*
12. *The note is endorsed in blank with no transfer and delivery receipts. It is fine to endorse a note in blank, in which case it becomes "bearer" paper under the UCC. However, in order to prove a true sale from the Sponsor to the Depositor you must have written delivery and transfer receipts and proof of pay outs and pay in transactions. (no valid proof of transfer)*

COMPLETE LIST OF FRAUDULENT VIOLATIONS TO WATCH FOR,

failure to produce original documents nullifies the foreclosure unless proven otherwise by the Plaintiff with required original documents...

13. *The note proffered in evidence is not endorsed at the foot of the note or on an affixed allonge.*
14. The assignment of the mortgage or deed of trust post-dates the filing of the court pleading.
15. *The assignment of the mortgage or deed of trust is executed after the filing of the court pleadings but claims to be "legally effective" before the filing. For example, the deed of trust assigned on June 1, 2009, with an effective date of May 1, 2007.*
16. *The parties who executed the assignment and who notarized the signature are in fact the same parties.*
17. The signor states that he or she is an "agent" for the executing entity.
18. The signor states that he or she is an "attorney in fact" for the executing entity.
19. The signor states that he or she is an employee of the executing entity but claims to have custody and control of the records of the entity.
20. The signor of the document makes statements about the status of the mortgage debt based on his or her review of the "records of the plaintiff" or the "records of the moving party."
21. The proponent of the original note files an Affidavit of Lost Note.
22. The signor claims that the allegations in the court pleading are correct but the assignment of the mortgage and/or delivery and transfer of the note occurs after the law suit or the motion for relief from stay was filed.
23. One or more of the operative documents in the case is signed by one of the attorneys for the mortgage servicer.
24. The default payment history filed in the case is prepared by the attorney for the mortgage servicer or a member of his or her staff.
25. The affidavit filed in support of legal fees is not signed by an attorney with the firm involved in" the case.
26. *The name of one or more of the signors is stamped on the document.*
27. The document is a form with standard "fill-in-the-blanks" for names and amounts.
28. *The signature of one or more parties on the document is not legible and looks like something a three year old might have done.*

COMPLETE LIST OF FRAUDULENT VIOLATIONS TO WATCH FOR,

29. **The document is dated and signed years before the document is actually filed with the register of real estate documents or deeds or mortgages.**
30. The proffered document has the word C O P Y stamped on or embedded in the document.
31. The document is executed by a notary in Denton County, Texas.
32. The document is executed by a notary in Collin County, Texas.
33. The document includes a legend "Hold for" a named law firm after recording.
34. The document was drafted by a law firm representing the mortgage servicer in the pending case.
34. The document includes any type of bar code that was not added by the local register or filing clerk for such instruments.
35. The document includes a reference to an "instrument number."
36. The document includes a reference to a "form number."
37. **The document does not include any reference to a Master Document Custodian.**
38. **The document is not authenticated by any officer or authorized agent of a Master Document Custodian.**
39. The paragraph numbers on the document are not consistent (the last paragraph on page one is 7 and the first paragraph on page two starts with number 9).
40. **The endorsement of the note is not at the "foot" or "bottom" of the last page of the note. For example, a few states allow an endorsement on the back of the last page of the note but the majority requires it at the foot of the note.**
41. ***The document purports to assign the mortgage or the deed of trust to the Trustee for the Securitized Trust before the Trust was registered with the Securities and Exchange Commission. This type of registration is normally referred to as a "shelf registration."***
42. ***The document purports to transfer the note to the Trustee for the Securitized Trust before the date the Trust provides for the origination date of instruments in the Trust. The Prospectus, the Prospectus Supplement and the Pooling and Servicing Agreement will clearly state that the pool of notes includes those originated between date X and date Y.***
43. ***The document purports to transfer the note to the Trustee for the Securitized Trust after the cut-off date for the creating of such instruments for the Trust.***

COMPLETE LIST OF FRAUDULENT VIOLATIONS TO WATCH FOR,

44. *The origination date on the mortgage note is not within the origination and cut-off dates provided for the by terms of the Pooling and Servicing Agreement.*
45. The "Affidavit of a Lost Note" is not filed by the Master Document Custodian for the Trust but by the Servicer or some other third-party.
46. The document is signed by a "bank officer" without any designation of the office held by the said officer.
47. **The affidavit includes the following language on the bottom of each page: "This is an attempt to collect a debt. Any information obtained will be used for that purpose."**
48. The document is signed by a person who identifies himself or herself as a "media supervisor" for the proponent.
49. The document is signed by a person who identifies himself or herself as a "media coordinator" for the proponent
50. The document is signed by a person who identifies himself or herself as a "legal coordinator" for the movant.
51. *The date of the signature on the document and the date the signature was notarized are not the same.*
52. *The parties who signed the assignment and who notarized the signature are located in different states or counties.*
53. *The transferor and the transferee have the same physical address including the same street and post office box numbers.*
54. *The assignor and the assignee have the same physical address including the same street and post office box numbers.*
55. *The signor of the document states that he or she is acting "solely as nominee" for some other party.*
56. The document refers to a power of attorney but no power of attorney is attached.
57. The document bears the following legend: "This is not a certified copy."
58. *The document is signed by: (these are just a few names, do site search from more robo-signers) (contains 3 robo-signers and is prepare by MERS there fore is VOID)*

COMPLETE LIST OF FRAUDULENT VIOLATIONS TO WATCH FOR:

Special notice;

Note, that the paper "entrusted" to the trustee is not for benefit of investors who, by the way, are not beneficiaries of the trust. the securities broker is the beneficiary. And note also that the paper transfer of an interest in a mortgage is a legal nullity in all jurisdictions unless there is a contemporaneous transfer of ownership of the underlying obligation. This is further amplified by Article 9 §203 UCC, adopted in all US jurisdictions, that requires payment of value as a condition precedent for filing any foreclosure action. Please also take notice of the fact that the purported delivery of the original note is mostly fiction since note was most likely destroyed shortly after the "Closing." But even if delivery of the original note is deemed to have occurred, the possessor is neither a holder nor anyone else entitled to enforce it unless they received a delivery from someone who owned the underlying obligation or note.

NEW YORK | Fri Jan 7, 2011 1:10pm (Reuters) – In a ruling that may affect foreclosures nationwide, Massachusetts' highest court voided the seizure of two homes by Wells Fargo & Co and US Bancorp after the banks failed to show they held the mortgages at the time they foreclosed. Bank shares fell, dragging down the broader U.S. stock market, after the Supreme Judicial Court of Massachusetts on Friday issued its decision, which upheld a lower court ruling. The decision is among the earliest to address the validity of foreclosures conducted without full documentation. That issue last year prompted an uproar that lenders such as Bank of America Corp, JPMorgan Chase & Co and Ally Financial Inc to temporarily stop seizing homes. Courts in other U.S. states are considering similar cases, and all 50 state attorneys general are examining whether lenders are forcing people out of their homes improperly. Friday's decision may also threaten banks' ability to package mortgages into securities, including whether loans that were transferred improperly might need to be bought back. Wells Fargo and U.S. Bancorp lacked authority to foreclose after having "failed to make the required showing that they were the holders of the mortgages at the time of foreclosure," Justice Ralph Gants wrote for a unanimous court

See:: U.S. BANK NATIONAL ASSOCIATION, trustee, [\[Note 1\]](#) vs. ANTONIO IBANEZ (and a consolidated case [\[Note 2\]](#), [\[Note 3\]](#)).458 Mass.637

<http://masscases.com/cases/sjc/458/458mass637.html>

EXHIBIT D

P2

The document purports to assign the mortgage or the deed of trust to the Trustee for the Securitized Trust before the Trust was registered with the Securities and Exchange Commission. This type of registration is normally referred to as a “shelf registration.”

The document purports to transfer the note to the Trustee for the Securitized Trust before the date the Trust provides for the origination date of instruments in the Trust. The Prospectus, the Prospectus Supplement and the Pooling and Servicing Agreement will clearly state that the pool of notes includes those originated between date X and date Y.

The document purports to transfer the note to the Trustee for the Securitized Trust after the cut-off date for the creating of such instruments for the Trust. **Based on research it was securitized in 2006**

The document is signed by a “bank officer” without any designation of the office held by the said officer.



America's Home Loan Experts®

1050 Woodward Avenue | Detroit | Michigan | 48226-1906 | www.quickenloans.com

August 9, 2011

Louise Legare Gardner
PO Box 3443
Bluffton, SC 29910

Re: Loan No. 4678321067P & 4693344521p

Dear Ms. Legare Gardner:

Quicken Loans in receipt of your correspondence dated July 27, 2011 requesting payoff information related to the above-referenced loans. Quicken Loans cannot provide you with any payoff information related to the two loans because Quicken Loans is not servicing either of these two loans. In addition, Quicken Loans has no present interest in the mortgage (or the note) associated with loans originated by Quicken Loans.

Please contact your current servicers to obtain the payoff information for each loan.

Sincerely,

QUICKEN LOANS INC.

To the extent permitted by Applicable Law, Lender may charge a reasonable fee as a condition to Lender's consent to the loan assumption. Lender also may require the transferee to sign an assumption agreement that is acceptable to Lender and that obligates the transferee to keep all the promises and agreements made in the Note and in this Security Instrument. Borrower will continue to be obligated under the Note and this Security Instrument unless Lender releases Borrower in writing.

If Lender exercises the option to require immediate payment in full, Lender shall give Borrower notice of acceleration. The notice shall provide a period of not less than 30 days from the date the notice is given in accordance with Section 15 within which Borrower must pay all sums secured by this Security Instrument. If Borrower fails to pay these sums prior to the expiration of this period, Lender may invoke any remedies permitted by this Security Instrument without further notice or demand on Borrower.

WITNESS THE HAND(S) AND SEAL(S) OF THE UNDERSIGNED.



 Louise Legare-Gardner
 07/24/2006 (Seal)
 Borrower

 Borrower (Seal)

WITHOUT RECOURSE
 Pay To the Order of
 DEUTSCHE BANK NATIONAL TRUST COMPANY, AS TRUSTEE
 FOR GSAA HOME EQUITY TRUST 2006-17 ASSET BACKED *
 QUICKEN LOANS, INC. (Seal)

 Borrower (Seal)

By _____
 SCOTT JOHNSON
 CAPTURE MANAGER
 Borrower (Seal)

* CERTIFICATES, SERIES 2066-17

 Borrower (Seal)

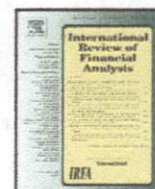
 Borrower (Seal)

 Borrower (Seal)

 Borrower (Seal)

[Sign Original Only]





Can banks individually create money out of nothing? – The theories and the empirical evidence[☆]

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BANK FRAUD

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ABSTRACT

This paper presents the first empirical evidence in the history of banking on the question of whether banks can create money out of nothing. The banking crisis has revived interest in this issue, but it had remained unsettled. Three hypotheses are recognised in the literature. According to the *financial intermediation theory of banking*, banks are merely intermediaries like other non-bank financial institutions, collecting deposits that are then lent out. According to the *fractional reserve theory of banking*, individual banks are mere financial intermediaries that cannot create money, but collectively they end up creating money through systemic interaction. A third theory maintains that each individual bank has the power to create money 'out of nothing' and does so when it extends credit (the credit creation theory of banking). The question which of the theories is correct has far-reaching implications for research and policy. Surprisingly, despite the longstanding controversy, until now no empirical study has tested the theories. This is the contribution of the present paper. An empirical test is conducted, whereby money is borrowed from a cooperating bank, while its internal records are being monitored, to establish whether in the process of making the loan available to the borrower, the bank transfers these funds from other accounts within or outside the bank, or whether they are newly created. This study establishes for the first time empirically that banks individually create money out of nothing. The money supply is created as 'fairy dust' produced by the banks individually, "out of thin air".

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"The choice of a measure of value, of a monetary system, of currency and credit legislation – all are in the hands of society, and natural conditions ... are relatively unimportant. Here, then, the decision-makers in society have the opportunity to directly demonstrate and test their economic wisdom – or folly. History shows that the latter has often prevailed."¹

[Wicksell (1922, p. 3)]

[☆] The author wishes to acknowledge excellent research support from Dr. Kostas Voutsinas and Shamsheer Dhanda. Moreover, the author is grateful to the many bank staff at numerous banks involved in this study, who have given their time for meetings and interviews. Most of all, the author would like to thank Mr. Marco Rebl, Director of Raiffeisenbank Wildenberg e.G., for his cooperation and arranging the cooperation of his colleagues in conducting the empirical examination of bank credit creation and making the facilities, accounts and staff of his bank accessible to the researcher. Finally, should grains of wisdom be found in this article, the author wishes to attribute them to the source of all wisdom (Jeremiah 33:3).

¹ Translated into English by the author. See also Wicksell (1935).

1. Introduction

Since the American and European banking crisis of 2007–8, the role of banks in the economy has increasingly attracted interest within and outside the disciplines of banking, finance and economics. This interest is well justified: Thanks to the crisis, awareness has risen that the most widely used macroeconomic models and finance theories did not provide an adequate description of crucial features of our economies and financial systems, and, most notably, failed to include banks.² These bank-less dominant theories are likely to have influenced bank regulators and may thus have contributed to sub-optimal bank regulation: Systemic issues emanating from the banking sector are impossible to detect in economic models that do not include banks, or in finance models that are based on individual, representative financial institutions without embedding these appropriately into macroeconomic models.³

² Federal Reserve Vice-Chairman Kohn (2009) bemoaned this issue. Examples of leading macroeconomic and monetary models without any banks include Walsh (2003) and Woodford (2003), but this problem applies to all the conventional macromodels proposed by the major conventional schools of thought, such as the classical, Keynesian, monetarist and neo-classical theories, including real business cycle and DSGE models.

³ The 'Basel' approach to bank regulation focuses on regulation of capital adequacy. Werner (2010a) has argued that this is based on economic theories that do not feature a special role for banks. For an overview and critique, see Werner (2012).

Consequently, many researchers have since been directing their efforts at incorporating banks or banking sectors in economic models.⁴ This is a positive development, and the European Conferences on Banking and the Economy (ECOBATE) are contributing to this task, showcased in this second special issue, on ECOBATE 2013, held on 6 March 2013 in Winchester Guildhall and organised by the University of Southampton Centre for Banking, Finance and Sustainable Development. As the work in this area remains highly diverse, this article aims to contribute to a better understanding of crucial features of banks, which would facilitate their suitable incorporation in economic models. Researchers need to know which aspects of bank activity are essential – including important characteristics that may distinguish banks from non-bank financial institutions. In other words, researchers need to know whether banks are unique in crucial aspects, and if so, why.

In this paper the question of their potential ability to create money is examined, which is a candidate for a central distinguishing feature. A review of the literature identifies three different, mutually exclusive views on the matter, each holding sway for about a third of the twentieth century. The present conventional view is that banks are mere financial intermediaries that gather resources and re-allocate them, just like other non-bank financial institutions, and without any special powers. Any differences between banks and non-bank financial institutions are seen as being due to regulation and effectively so minimal that they are immaterial for modelling or for policy-makers. Thus it is thought to be permissible to model the economy without featuring banks directly. This view shall be called the *financial intermediation theory of banking*. It has been the dominant view since about the late 1960s.

Between approximately the 1930s and the late 1960s, the dominant view was that the banking system is 'unique', since banks, unlike other financial intermediaries, can collectively create money, based on the fractional reserve or 'money multiplier' model of banking. Despite their collective power, however, each individual bank is in this view considered to be a mere financial intermediary, gathering deposits and lending these out, without the ability to create money. This view shall be called the *fractional reserve theory of banking*.

There is a third theory about the functioning of the banking sector, with an ascendancy in the first two decades of the 20th century. Unlike the *financial intermediation theory* and in line with the *fractional reserve theory* it maintains that the banking system creates new money. However, it goes further than the latter and differs from it in a number of respects. It argues that each individual bank is not a financial intermediary that passes on deposits, or reserves from the central bank in its lending, but instead creates the entire loan amount out of nothing. This view shall be called the *credit creation theory of banking*.

The three theories are based on a different description of how money and banking work and they differ in their policy implications. Intriguingly, the controversy about which theory is correct has never been settled. As a result, confusion reigns: Today we find central banks – sometimes the very same central bank – supporting different theories; in the case of the Bank of England, central bank staff are on record supporting each one of the three mutually exclusive theories at the same time, as will be seen below.

It matters which of the three theories is right – not only for understanding and modelling the role of banks correctly within the economy, but also for the design of appropriate bank regulation that aims at sustainable economic growth without crises. The modern approach to bank regulation, as implemented at least since Basel I (1988), is predicated on the understanding that the *financial*

intermediation theory is correct.⁵ Capital adequacy-based bank regulation, even of the counter-cyclical type, is less likely to deliver financial stability, if one of the other two banking hypotheses is correct.⁶ The capital-adequacy based approach to bank regulation adopted by the BCBS, as seen in Basel I and II, has so far not been successful in preventing major banking crises. If the *financial intermediation theory* is not an accurate description of reality, it would throw doubt on the suitability of Basel III and similar national approaches to bank regulation, such as in the UK.⁷

It is thus of importance for research and policy to determine which of the three theories is an accurate description of reality. Empirical evidence can be used to test the relative merits of the theories. Surprisingly, no such test has so far been performed. This is the contribution of the present paper.

The remainder of the paper is structured as follows. Section 2 provides an overview of relevant literature, differentiating authors by their adherence to one of the three banking theories. It will be seen that leading economists have gone on the record in support of each one of the theories. In Section 3, I then present an empirical test that is able to settle the question of whether banks are unique and whether they can individually create money 'out of nothing'. It involves the actual processing of a 'live' bank loan, taken out by the researcher from a representative bank that cooperates in the monitoring of its internal records and operations, allowing access to its documentation and accounting systems. The results and some implications are discussed in Section 4.

2. The literature on whether banks can create money

Much has been written on the role of banks in the economy in the past century and beyond. Often authors have not been concerned with the question of whether banks can create money, as they often simply assume their preferred theory to be true, without discussing it directly, let alone in a comparative fashion. This literature review is restricted to authors that have contributed directly and explicitly to the question of whether banks can create credit and money. During time periods when in the authors' countries banks issued promissory notes (bank notes) that circulated as paper money, writers would often, as a matter of course, mention, even if only in passing, that banks create or issue money. In England and Wales, the Bank Charter Act of 1844 forbade banks to "make any engagement for the payment of money payable to bearer on demand." This ended bank note issuance for most banks in England and Wales, leaving the (until 1946 officially privately owned) Bank of England with a monopoly on bank note issuance. Meanwhile, the practice continued in the United States until the 20th century (and was in fact expanded with the similarly timed New York Free Banking Act of 1838), so that the US authors would refer to bank note issuance as evidence of the money creation

PROMISSORY NOTE PAYS THE DEBT IF ANY

⁵ See, for instance, the first BCBS Working Paper (BCBS, 1999), looking back on the first decade of experience with Basel I for insights into the thinking of the Basel bank regulators. In a section headlined 'Do fixed minimum capital requirements create credit crunches affecting the real economy?', the authors argue: "It would in fact be strange if fixed minimum capital requirements did not bite in some periods, thereby constraining the banks, given that the purpose of bank [capital] requirements is to limit the amount of risk that can be taken relative to capital. However, for this to have an effect on output, it would have to be true that any shortfall in bank lending was not fully made up through lending by other intermediaries or by access to securities markets." This statement presupposes that the *financial intermediation theory* holds. If banks are the creators of the money supply, and in this role unique and different from non-bank financial intermediaries, as the other two hypotheses maintain, then a reduction in bank credit (creation) must have effects that non-bank financial intermediaries cannot compensate for.

⁶ See, for instance, Werner (2005, 2010a).

⁷ As seen in the work of the Independent Commission on Banking, ICB, 2011, also known as the Vickers Commission. For contributions to the consultation of the ICB, see, for instance, Werner (2010b). The recommendations therein, especially the recommendation to discard the *financial intermediation theory*, were not heeded.

⁴ One older attempt that has stood up to the test of time is Werner (1997).

function of banks until much later.⁸ For sake of clarity, our main interest in this paper is the question whether banks that do not issue bank notes are able to create money and credit out of nothing. As a result, earlier authors, writing mainly about paper money issuance, are only mentioned in passing here, even if it could be said that their arguments might also apply to banks that do not issue bank notes. These include John Law (1705), James Steuart (1767), Adam Smith (1776), Henry Thornton (1802), Thomas Tooke (1838), and Adam Müller (1816), among others, who either directly or indirectly state that banks can individually create credit (in line with the *credit creation theory*).⁹

2.1. The credit creation theory of banking

Influential early writers that argue that non-issuing banks have the power to individually create money and credit out of nothing wrote mainly in English or German, namely Wicksell (1898, 1907), Withers (1909), Schumpeter (1912), Moeller (1925) and Hahn (1920).¹⁰ The review of proponents of the *credit creation theory* must start with Henry Dunning Macleod, of Trinity College, Cambridge, and Barrister at Law at the Inner Temple.¹¹ Macleod produced an influential opus on banking, entitled *The Theory and Practice of Banking*, in two volumes. It was published in numerous editions well into the 20th century (Macleod, 1855–6; the quotes here are from the 6th edition of 1905). Concerning credit creation by individual banks, Macleod unequivocally argued that individual banks create credit and money out of nothing, whenever they do what is called 'lending':

"In modern times private bankers discontinued issuing notes, and merely created Credits in their customers' favour to be drawn against by Cheques. These Credits are in banking language termed Deposits. Now many persons seeing a material Bank Note, which is

⁸ The practice of issuance of promissory notes by commercial banks has continued for far longer in Scotland and Northern Ireland – namely until today. This did not seem, however, to result in a sizeable literature on bank money creation in the UK throughout the 20th century.

⁹ Referring to the issuance of bank notes that circulate as paper money, Smith comments "The banks, when their customers apply to them for money, generally advance it to them in their own promissory notes" (p. 242). ... "It is chiefly by discounting bills of exchange, that is, by advancing money upon them before they are due, that the greater part of banks and bankers issue their promissory notes. ... The banker, who advances to the merchant whose bill he discounts, not gold and silver, but his own promissory notes, has the advantage of being able to discount to a greater amount by the whole value of his promissory notes, which he finds, by experience, are commonly in circulation. He is thereby enabled to make his clear gain of interest on so much a larger sum" (Smith, 1776, p. 241). "Jeder Provinzialbanquier strebt dahin, sein Privatgeld zum Nationalgelde zu erheben: er strebt nach der größtmöglichen und möglichst allgemeinen Umsetzbarkeit seines Privatgeldes. Es ist in England nicht bloß die Regierung, welche Geld macht, sondern die Bank von England, jede Privatbank, ja jede einzelne Haushaltung (ohne gerade bestimmte Noten auszugeben, aber, in wie fern sie sich an eine bestimmte Bank thätig anschließt) helfen das Geld machen" (Müller, 1816, p. 240). "Sobald die Regierung also die Geldzeichen mechanisch vermehrt, ohne in demselben Maße jene ändern Organe, denen die Vortheile der Geldvermehrung nur indirekt zu gute kommen, zu stärken, ohne um so kräftiger und gerechter das Ganze zu umfassen, so überträgt sie im Grunde nur das Privilegium der Gelderzeugung, das sie im Namen des Ganzen ausübt, auf ein einzelnes Organ. ... sollte sie [die Regierung] also ihr Privilegium der Gelderzeugung nicht bloß aufheben, sondern das bisher erzeugte Geld zurück nehmen, so gibt sie damit nur dem Privatcredit, das heißt, dem verwöhnten verderbten Privatcredit, oder dem Wucher die förmliche Befugniß in die Hände, die Lücken zu ergänzen, selbst Geldmarken zu machen, und somit seinen verderblichen und vernichtenden Einfluß auf das Ganze nun erst recht zu äußern" (Müller, 1816, p. 305).

¹⁰ There is also another group of writers who to some extent agree with this description, but one way or another downplay its role or importance in practice. In terms of the history of economic thought it can be said that the latter group laid the groundwork and were the founding fathers of the *fractional reserve theory*. To the extent that they recognise the creation of credit by banks out of nothing under certain circumstances one might argue that they could be classified as supporter of either the *credit creation theory* or the *fractional reserve theory*, but to minimise confusion, here the impact their work has had in its common interpretation was chosen, as well as their emphasis on reserves as a key mechanism, so that they were included in the latter theory.

¹¹ An Inn of Court with the status of a local authority, inside the territory of the City of London Corporation.

only a Right recorded on paper, are willing to admit that a Bank Note is cash. But, from the want of a little reflection, they feel a difficulty with regard to what they see as Deposits. They admit that a Bank Note is an "Issue," and "Currency," but they fail to see that a Bank Credit is exactly in the same sense equally an "Issue," "Currency," and "Circulation".

[Macleod (1905, vol. 2, p. 310)]

"... Sir Robert Peel was quite mistaken in supposing that bankers only make advances out of *bona fide* capital. This is so fully set forth in the chapter on the Theory of Banking, that we need only to remind our readers that all banking advances are made, in the first instance, by **creating credit**" (p. 370, emphasis in original).

In his *Theory of Credit* Macleod (1891) put it this way:

"A bank is therefore not an office for "borrowing" and "lending" money, but it is a Manufactory of Credit."

[Macleod (1891: II/2, 594)]

According to the *credit creation theory* then, banks create credit in the form of what bankers call 'deposits', and this credit is money. But how much credit can they create? Wicksell (1907) described a credit-based economy in the *Economic Journal*, arguing that

"The banks in their lending business are not only not limited by their own capital; they are not, at least not immediately, limited by any capital whatever; by concentrating in their hands almost all payments, they themselves create the money required...."

"In a pure system of credit, where all payments were made by transference in the bank-books, the banks would be able to grant at any moment any amount of loans at any, however diminutive, rate of interest."¹²

[Wicksell (1907, 214)]

Withers (1909), from 1916 to 1921 the editor of the *Economist*, also saw few restraints on the amount of money banks could create out of nothing:

"... it is a common popular mistake, when one is told that the banks of the United Kingdom hold over 900 millions of deposits, to open one's eyes in astonishment at the thought of this huge amount of cash that has been saved by the community as a whole, and stored by them in the hands of their bankers, and to regard it as a tremendous evidence of wealth. But this is not quite the true view of the case. Most of the money that is stored by the community in the banks consists of book-keeping credits lent to it by its bankers."

[Withers (1909, pp. 57 ff.)]

"... The greater part of the banks' deposits is thus seen to consist, not of cash paid in, but of credits borrowed. For every loan makes a deposit...."

[Withers (1909, p. 63)]

BANKS CANNOT LEND CREDIT BY LAW.

"When notes were the currency of commerce a bank which made an advance or discounted a bill gave its customer its own notes as the proceeds of the operation, and created a liability for itself. Now, a bank makes an advance or discounts a bill, and makes a liability for itself in the corresponding credit in its books."

[Withers (1909, p. 66)]

¹² This paper was read by Wicksell in London in the Economic Section of the British Association in 1906 and it is recorded in the *Economic Journal* that Palgrave and Edgeworth commented on it. There is no mentioning of any objections to the claims about the ability of banks to create money out of nothing.

"... It comes to this that, whenever a bank makes an advance or buys a security, it gives some one the right to draw a cheque upon it, which cheque will be paid in either to it or to some other banks, and so the volume of banking deposits as a whole will be increased and the cash resources of the banks as a whole will be unaltered."

[Withers (1916, p. 45)]

"When once this fact is recognised, that the banks are still, among other things, manufacturers of currency, just as much as they were in the days when they issued notes, we see how important a function the banks exercise in the economic world, because it is now generally admitted that the volume of currency created has a direct and important effect upon prices. This arises from what is called the "quantity theory" of money"

[Withers (1916, p. 47)]

"If, then, the quantity theory is, as I believe, broadly true, we see how great is the responsibility of the bankers as manufacturers of currency, seeing that by their action they affect, not only the convenience of their customers and the profits of their shareholders, but the general level of prices. If banks create currency faster than the rate at which goods are being produced, their action will cause a rise in prices which will have a perhaps disastrous effect"¹³

[Withers (1916, pp. 54 ff.)]

"And so it becomes evident, as before stated, that the deposits of the banks which give the commercial community the right to draw cheques are chiefly created by the action of the banks themselves in lending, discounting, and investing" (pp. 71 ff.).

"... then, it thus appears that credit is the machinery by which a very important part of modern currency is created ..." (p. 72).

Withers argues that the sovereign prerogative to manufacture the currency of the nation has effectively been *privatised* and granted to the commercial banks:

"By this interesting development the manufacture of currency, which for centuries has been in the hands of Government, has now passed, in regard to a very important part of it, into the hands of companies, working for the convenience of their customers and the profits of their shareholders."

[Withers (1916, p. 40)]

While Withers was a financial journalist, his writings had a high circulation and likely contributed to the dissemination of the *credit creation theory* in the form proposed by Macleod (1855–6). This view

¹³ "Since, then, variations in the quantity of currency have these widespread effects, it is a matter which bankers have to consider seriously, how far it is possible from them to apply some scientific regulation to the volume of currency, and whether it is possible to modify the evils that follow from wide fluctuations in prices by some such regulation" (p. 55). For a more recent application and more precise formulation of this principle, see Werner's *Quantity Theory of Credit* (Werner, 1992, 1997, 2005, 2012). "... the most important of the modern forms of currency, namely the cheque, is, in effect, manufactured for the use of its customers by banks; and, further, that since the volume of currency has an important effect upon raising prices, the extent to which currency is thus created is a responsibility which has to be seriously considered by those who work the financial machine. This manufacture of currency is worked through the granting of credit, and credit may thus be defined, for the purposes of this inquiry, as the process by which finance makes currency for its customers. As we saw in the last chapter, deposits, which are potential currency as they carry with them the right to draw a cheque, are produced largely through the loans, discounts and investments made by bankers" (p. 63). "The creation of credit is thus seen clearly to result in the manufacture of currency whenever the banks buy bills of exchange ... or make an advance In either case the banks give somebody the right to draw cheques. ... When a bank makes an advance to a stock broker the result is exactly the same The same result, in rather a different form, happens when a bank makes investments on its own account. ... There has thus been, in each case, an increase in deposits through the operation of the bank in lending, discounting, or investing. If we can imagine all the banks suddenly selling all their investments and bills of exchange and calling in all their advances, the process could only be brought about by the cancelling of deposits, their own and one another's" (p. 72).

also caught on in Germany with the publication of Schumpeter's (1912, English 1934) influential book *The Theory of Economic Development*, in which he was unequivocal in his view that each individual bank has the power to create money out of nothing.

"Something like a certificate of future output or the award of purchasing power on the basis of promises of the entrepreneur actually exists. That is the service that the banker performs for the entrepreneur and to obtain which the entrepreneur approaches the banker. ... (The banker) would not be an intermediary, but *manufacturer of credit*, i.e. he would create himself the purchasing power that he lends to the entrepreneur One could say, without committing a major sin, that the banker creates money."¹⁴

OUT OF OWN SIGNATURES AND DEPOSITS
[Schumpeter (1912, p. 197, emphasis in original)]

"[C]redit is essentially the creation of purchasing power for the purpose of transferring it to the entrepreneur, but not simply the transfer of existing purchasing power. ... By credit, entrepreneurs are given access to the social stream of goods before they have acquired the normal claim to it. And this function constitutes the keystone of the modern credit structure."

[Schumpeter (1954, p. 107)]

"The fictitious certification of products, which, as it were, the credit means of payment originally represented, has become truth."¹⁵

Signed Notes [Schumpeter (1912, p. 223)]

This view was also well represented across the Atlantic, as the writings of Davenport (1913) or Robert H. Howe (1915) indicate. Hawtrey (1919), another leading British economist who like Keynes, had a Treasury background and moved into academia, took a clear stance in favour of the *credit creation theory*:

"... for the manufacturers and others who have to pay money out, credits are still created by the exchange of obligations, the banker's immediate obligation being given to his customer in exchange for the customer's obligation to repay at a future date. We shall still describe this dual operation as the creation of credit. By its means the banker creates the means of payment out of nothing, whereas when he receives a bag of money from his customer, one means of payment, a bank credit, is merely substituted for another, an equal amount of cash" (p. 20).

Apart from Schumpeter, a number of other German-language authors also argued that banks create money and credit individually through the process of lending.¹⁶ Highly influential in both academic discourse and public debate was Dr. Albert L. Hahn (1920), scion of a Frankfurt banking dynasty (similarly to Thornton who had been a banker) and since 1919 director of the major family-owned *Effecten- und Wechsel-Bank, Frankfurt*. Like Macleod a trained lawyer, he became an honorary professor at Goethe-University

¹⁴ "Etwas Ähnliches wie eine Bescheinigung künftiger Produkte oder wie die Verleihung von Zahlkraft an die Versprechungen des Unternehmers gibt es nun wirklich. Das ist der Dienst, den der Bankier dem Unternehmer erweist und um den sich der Unternehmer an den Bankier wendet. ... so wäre er nicht Zwischenhändler, sondern *Produzent von Kredit*, d.h. er würde die Kaufkraft, die er dem Unternehmer leiht, selbst schaffen Man könnte ohne große Sünde sagen, daß der Bankier Geld schaffe" (S. 197). Translated by author.

¹⁵ "Die fiktive Bescheinigung von Produkten, die die Kreditzahlungsmittel sozusagen ursprünglich darstellten, ist zur Wahrheit geworden" (Schumpeter, 1912, S. 223). Translated by author.

¹⁶ For instance, Moeller (1925) states that "In the modern monetary system the creation of new paper or bank accounting currency ('Buchungsgeld', or 'bank book money') is primarily in the hands of the banks. ... For the deposit money the same largely applies as for paper money ..." (pp. 177 ff.).

Frankfurt in 1928. Clearly not only aware of the works of Macleod, whom he cites, but also likely aware of actual banking practice from his family business, Hahn argued that banks do indeed 'create money out of nothing':

"Every credit that is extended in the economy creates a deposit and thus the means to fund it. ... The conclusion from the process described can be expressed in reverse by saying ... that every deposit that exists somewhere and somehow in the economy has come about by a prior extension of credit."¹⁷

[Hahn (1920, p. 28)]

"We thus maintain – contrary to the entire literature on banking and credit – that the primary business of banks is not the liability business, especially the deposit business, but that in general and in each and every case an asset transaction of a bank must have previously taken place, in order to allow the possibility of a liability business and to cause it: The liability business of banks is nothing but a reflex of prior credit extension. The opposite view is based on a kind of optical illusion"¹⁸

[Hahn (1920, p. 29)]

Overall, Hahn probably did more than anyone to popularise the *credit creation theory* in Germany, his book becoming a bestseller, and spawning much controversy and new research among economists in Germany. It also greatly heightened awareness among journalists and the general public of the topic in the following decades. The broad impact of his book was likely one of the reasons why this theory remained entrenched in Germany, when it had long been discarded in the UK or the US, namely well into the post-war period. Hahn's book was however not just a popular explanation without academic credibility. Schumpeter cited it positively in the second (German) edition of his *Theory of Economic Development* (Schumpeter, 1926), praising it as a further development in line with, but beyond, his own book. The English translation of Schumpeter's influential book Schumpeter (1912 [1934]) also favourably cites Hahn.

It can be said that support for the *credit creation theory* appears to have been fairly widespread in the late 19th and early 20th century in English and German language academic publications. By 1920, the *credit creation theory* had become so widespread that it was dubbed the 'current view', the 'traditional theory' or the 'time-worn theory of bank credit' by later critics.¹⁹

The early Keynes seemed to also have been a supporter of this dominant view. In his *Tract on Monetary Reform* (Keynes, 1924), he asserts, apparently without feeling the need to establish this further, that banks create credit and money, at least in aggregate:

"The internal price level is mainly determined by the amount of credit created by the banks, chiefly the Big Five ..." (p. 178).

¹⁷ "Jeder Kredit der gegeben wird, erzeugt seinerseits ein Deposit und damit die Mittel zu seiner Unterbringung. ... Die Folgerung aus dem skizzierten Vorgang kann man auch umgekehrt ausdrücken, indem man sagt – und dieser Schluß ist ebenso zwingend –, daß jedes irgendwie und irgendwo in der Volkswirtschaft vorhandene Scheck- oder Ueberweisungsguthaben sein Entstehen einer vorausgegangenen Kreditgewährung, einem zuvor eingeräumten Kredit zu verdanken hat" (S. 28). Translated by author.

¹⁸ "Wir behaupten also im Gegensatz zu der gesamten, in dieser Beziehung so gut wie einigen Bank- und Kreditliteratur, daß nicht das Passivgeschäft der Banken, insbesondere das Depositengeschäft das Primäre ist, sondern daß allgemein und in jedem einzelnen Falle ein Aktivgeschäft einer Bank vorangegangen sein muß, um erst das Passivgeschäft einer Bank möglich zu machen und es hervorzurufen: Das Passivgeschäft der Banken ist nichts anderes als ein Reflex vorangegangener Kreditgewährung. Die entgegengesetzte Ansicht beruht auf einer Art optischer Täuschung ..." (S. 29). Translated by author.

¹⁹ See, for instance, Phillips (1920, p. 72, p. 119).

"The amount of credit, so created, is in its turn roughly measured by the volume of the banks' deposits – since variations in this total must correspond to the variations in the total of their investments, bill-holdings, and advances" (p. 178).

We know from Keynes' contribution to the *Macmillan Committee* (1931) that Keynes meant with this that each individual bank was able to create credit:

"It is not unnatural to think of the deposits of a bank as being created by the public through the deposit of cash representing either savings or amounts which are not for the time being required to meet expenditure. But the bulk of the deposits arise out of the action of the banks themselves, for by granting loans, allowing money to be drawn on an overdraft or purchasing securities a bank creates a credit in its books, which is the equivalent of a deposit" (p. 34).

Concerning the banking system as a whole, this bank credit and deposit creation was thought to influence aggregate demand and the formation of prices, as Schumpeter (1912) had argued:

"The volume of bankers' loans is elastic, and so therefore is the mass of purchasing power The banking system thus forms the vital link between the two aspects of the complex structure with which we have to deal. For it relates the problems of the price level with the problems of finance, since the price level is undoubtedly influenced by the mass of purchasing power which the banking system creates and controls, and by the structure of credit which it builds Thus, questions relating to the volume of purchasing power and questions relating to the distribution of purchasing power find a common focus in the banking system" (Macmillan Committee, 1931, pp. 12 ff.).

"... if, finally, the banks pursue an easier credit policy and lend more freely to the business community, forces are set in motion increasing profits and wages, and therefore the possibility of additional spending arises" (p. 13).

Concerning the question whether credit demand or credit supply is more important, the report argued that the root cause is the movement of the supply of credit:

"The expansion or contraction of the amount of credit made available by the banking system in other directions will, through a variety of channels, affect the ease of embarking on new investment propositions. This, in turn, will affect the volume and profitability of business, and hence react in due course on the amount of accommodation required by industry from the banking system. ... Thus what started as an alteration in the supply of credit ends up in the guise of an alteration in the demand for credit" (p. 99).²⁰

While money is thus seen as endogenous to credit, when what is called a 'bank loan' is extended, the Committee argued that bank credit was exogenous as far as loan applicants are concerned:

"There can be no doubt as to the power of the banking system ... to increase or decrease the volume of bank money" (p. 102).

"In normal conditions we see no reason to doubt the capacity of the banking system to influence the volume of active investment by

²⁰ This is in line with the credit supply determination view proposed by Werner (1997, 2005) and his Quantity Theory of Credit, as opposed to the endogenous credit supply view of many post-Keynesians.

increasing the volume and reducing the cost of bank credit. ... Thus we consider that in any ordinary times the power of the banking system ... to increase or diminish the active employment of money in enterprise and investment is indisputable" (p. 102).

The Macmillan Committee also argued that bank credit could be manipulated by the Bank of England, and thus was also considered exogenous in this sense.

The credit creation theory remained influential until the early post-war years. The links of credit creation to macroeconomic and financial variables were later formalised in the Quantity Theory of Credit (Werner, 1992, 1997, 2005, 2012), which argues that credit for (a) productive use in the form of investments for the production of goods and services is sustainable and non-inflationary, as well as less likely to become a non-performing loan, (b) unproductive use in the form of consumption results in consumer price inflation and (c) unproductive use in the form of asset transactions results in asset inflation and, if large enough, banking crises. However, since the 1920s serious doubts had spread about the veracity of the *credit creation theory of banking*. These doubts were initially uttered by economists who in principle supported the theory, but downplayed its significance. It is this group of writers that served as a stepping stone to the formulation of the modern *fractional reserve theory*, which in its most widespread (and later) version however argues that individual banks cannot create credit, but only the banking system in aggregate. It is this theory about banks that we now turn to.

2.2. The fractional reserve theory

An early proponent of the *fractional reserve theory* was Alfred Marshall (1888). He testified to a government committee about the role of banks as follows:

"I should consider what part of its deposits a bank could lend and then I should consider what part of its loans would be redeposited with it and with other banks and, vice versa, what part of the loans made by other banks would be received by it as deposits. Thus I should get a geometrical progression; the effect being that if each bank could lend two thirds of its deposits, the total amount of loaning power got by the banks would amount to three times what it otherwise would be."

[Marshall (1888), as quoted by Yohe (1995, p. 530)]

With this, he contradicted Macleod's arguments. However, Marshall's view was still a minority view at the time. After the end of the First World War, a number of influential economists argued that the 'Old Theory' (Phillips, 1920:72) of bank credit creation by individual banks was mistaken. Their view gradually became more influential. "The theory of deposit expansion reached its zenith with the publication of C.A. Phillips' *Bank Credit ...*" (Goodfriend, 1991, as quoted by Yohe, 1995, p. 532).

Phillips (1920) argued that it was important to distinguish between the theoretical possibility of an individual bank 'manufacturing money' by lending in excess to cash and reserves on the one hand, and, on the other, the banking system as a whole being able to do this. He argued that the 'Old Theory' (the *credit creation theory*) was

"predicated upon the contention that a bank would be able to make loans to the extent of several times the amount of additional cash newly acquired and held at the time the loans were made, whereas a representative bank in a system is actually able ordinarily to lend an amount only roughly equal to such cash" (p. 72).²¹

²¹ His analysis was based on the "overlooked ... pivotal fact that an addition to the usual volume of a bank's loans tends to result in a *loss of reserve* for that bank only somewhat less on average than the amount of the additional loans. ... Manifold loans are not extended by an individual bank on the basis of a given amount of reserve" (Phillips, 1920, p. 73).

According to Phillips (1920), individual banks cannot create credit or money, but collectively the banking system does so, as a new reserve is "split into small fragments, becomes dispersed among the banks of the system. Through the process of dispersion, it comes to constitute the basis of a manifold loan expansion" (p. 40). Each bank is considered mainly a financial intermediary: "... the banker ... handles chiefly the funds of others" (pp. 4–5). Phillips argued that since banks target particular cash to deposit and reserve to deposit ratios (as cited in the money multiplier), which they wish to maintain, each bank effectively works as an intermediary, lending out as much as it is able to gather in new cash. Through the process of dispersion and re-iteration, the financial intermediation function of individual banks, without the power to create credit, adds up to an expansion in the money supply in aggregate.²²

Crick (1927) shared this conclusion (with some minor caveats). Thus he argued:

"The important point, which is responsible for much of the controversy and most of the misunderstanding, is that while one bank receiving an addition to its cash cannot forthwith undertake a full multiple addition to its own deposits, yet the cumulative effect of the additional cash is to produce a full multiple addition to the deposits of all the banks as a whole" (p. 196).

"Summing up, then, it is clear ... that the banks, so long as they maintain steady ratios of cash to deposits, are merely passive agents of the Bank of England policy, as far as the volume of money in the form of credit is concerned. ... The banks ... have very little scope for policy in the matter of expansion or contraction of deposits, though they have in the matter of disposition of resources between loans, investments and other assets. But this is not to say that the banks cannot and do not effect multiple additions to or subtractions from deposits as a whole on the basis of an expansion of or contraction in bank cash" (p. 201).

The role of banks remained disputed during the 1920s and 1930s, as several writers criticised the *credit creation theory*. Views not only diverged, but were also in a flux, as several experts apparently shifted their position gradually – overall an increasing number moving away from the *credit creation theory* and towards the *fractional reserve theory*.

Sir Josiah C. Stamp, a former director of the Bank of England, summarised the state of debate in his review of an article by Pigou (1927):

"The general public economic mind is in a fair state of muddlement at the present moment on the apparently simple question: "Can the banks create credit, and if so, how, and how much?" and between the teachings of Dr. Leaf and Mr. McKenna, Messrs. Keynes, Hawtrey, Cassel and Cannan and Gregory, people have not yet found their way."

[Stamp (1927, p. 424)]

²² It should be noted here that Phillips' (1920) work can be interpreted in a more differentiated manner. For instance, Phillips did also point out that if all banks increased their lending at roughly the same pace, each bank would, after all, be able to create credit without losing reserves or cash, on balance (pp. 78 ff.). However, subsequent writers citing Phillips usually do not mention this. While a more detailed discussion of Phillips is, however, beyond the scope of this paper, it is here merely claimed that Phillips' argument was an important stepping stone towards the formulation of the *fractional reserve theory* of banking, which is unequivocal in treating individual banks as mere financial intermediaries without the power to create credit or money individually under any and all circumstances, even though it could possibly be argued that Phillips himself may not have agreed with the latter in all respects.

Contributions to this debate were also made by Dennis Robertson (1926), who was influenced by Keynes.²³ Keynes (1930) explains the role of reserve holdings and the mechanics of determining a bank's behaviour based on its preference to hold cash and reserves, together with the amount of reserves provided by the central bank – the fairly predetermined mechanics postulated by the money multiplier in a fractional reserve model:

“Thus in countries where the percentage of reserves to deposits is by law or custom somewhat rigid, we are thrown back for the final determination of M, the Volume of Bank-money on the factors which determine the amount of these reserves” (p. 77).

Keynes (1930) also backed a key component of the *fractional reserve theory*, namely that banks gather deposits and place parts of them with the central bank, or, alternatively, may withdraw funds from their reserves at the central bank in order to lend these out to the non-banking sector of the economy:

“When a bank has a balance at the Bank of England in excess of its usual requirements, it can make an additional loan to the trading and manufacturing world, and this additional loan creates an additional deposit (to the credit of the borrower or to the credit of those to whom he may choose to transfer it) on the other side of the balance sheet of this or some other bank.”

[Keynes (1930, vol. 2, p. 218)]

Keynes here argues that new deposits, based on new loans, are dependent upon and connected to banks' reserve balances held at the central bank. This view is sometimes also supported by present-day central bankers, such as in Paul Tucker's or the ECB's proposal to introduce negative interest rates on banks' reserve holdings at the central bank, as an incentive for them to 'move' their money from the central bank and increase lending.²⁴ Nevertheless, part of Keynes (1930), and much of his most influential work, his *General Theory* (1936), appears more in line with the *financial intermediation theory*, as will be discussed in the following section.

A representative example of the *fractional reserve theory* that at the same time was beginning to point in the direction of the *financial intermediation theory* is the work by Lutz (1939), who published in *Economica*, a forum for some of these debates at the time:

“The expansion of the economic system leads to an increase in the volume of deposits to a figure far in excess of the amount of the additional cash in use, simply because the same cash is deposited with the banking system over and over again. ... The fact that banking statistics show an aggregate of deposits far above the amount of cash in the banking system, is therefore not of itself a sign that the banks must have created the whole of the difference. This conclusion is also, of course, somehow implicit in the “multiple expansion” theory of the creation of bank deposits (of the Phillips or Crick variety). That theory explains the creation of deposits by the fact that the same cash (in decreasing amounts) is successively paid into different banks. It does, however, look upon this cash movement rather in the nature of a technical affair between banks ... which would disappear if the separate banks were merged into one. In that case the deposits would be regarded as coming into existence by outright creation. In our example we assume throughout only one bank, and still the deposits grow out of the return, again and again, of the same

cash by the public. ... The force which really creates expansion is the trade credit given by producers to one another. ... The bank plays the role of a mere intermediary.”

... This seems to lead not to a new, but to a very old theory of the function of banks: the function of a mere intermediary ... (pp. 166 ff.).

“The modern idea of banks being able to create deposits seemed to be a startling departure from the view held by most economists in the nineteenth century. If, however, we approach this modern idea along the lines followed above, we find that it resolves itself into much the same elements as those which many of the older writers regarded as the essence of banking operations: the provision of confidence which induces the economic subjects to extend credit to each other by using the bank as an intermediary” (p. 169).

Phillips' influence has indeed been significant. Even in 1995 Goodfriend still argued that

“... Phillips showed that the summation of the loan- and deposit-creation series across all individual banks yields the multiple expansion formulas for the system as a whole. Phillips' definitive exposition essentially established the theory once and for all in the form found in economics textbooks today.”

[as reprinted in Yohe (1995, p. 535)]

Statements like this became the mainstream view in the 1950s and 1960s.²⁵ The view of the *fractional reserve theory* in time also came to dominate textbook descriptions of the functioning of the monetary and banking system. There is no post-war textbook more representative and influential than that of Samuelson (1948). The original first edition is clear in its description of the *fractional reserve theory*: Under the heading “Can banks really create money?”, Samuelson first dismisses “false explanations still in wide circulation” (p. 324):

“According to these false explanations, the managers of an ordinary bank are able, by some use of their fountain pens, to lend several dollars for each dollar left on deposit with them. No wonder practical bankers see red when such behavior is attributed to them. They only wish they could do so. As every banker well knows, he cannot invest money that he does not have; and any money that he does invest in buying a security or making a loan will soon leave his bank” (p. 324).

Samuelson thus argues that a bank needs to gather the funds first, before it can extend bank loans. This is not consistent with the *credit creation theory*. However, Samuelson argues that, in aggregate, the banking system creates money. He illustrates his argument with the example of a ‘small bank’ that faces a 20% reserve requirement, and considering the accounts of the bank (B/S). If this bank receives a new cash deposit of \$1000, “What can the bank now do?”, Samuelson asks (p. 325).

“Can it expand its loans and investments by \$4000 ...?”

“The answer is definitely ‘no’. Why not? Total assets equal total liabilities. Cash reserves meet the legal requirement of being 20

²³ In the Introduction, Robertson says: “I have had so many discussions with Mr. J. M. Keynes on the subject matter of chapters V and VI, and have rewritten them so drastically at his suggestion, that I think neither of us now knows how much of the ideas therein contained is his, and how much is mine (p. 5).” (As cited in Keynes, 1930.)

²⁴ On Paul Tucker's proposal, see BBC (2013), and also the critique by Werner (2013a). Negative rates on bank reserves at the central bank were actually imposed by the Swedish central bank in 2009, the Danish central bank in 2012 and for the first time by the Swiss central bank in 1978 on deposits by foreign banks.

²⁵ Even though a closer reading of Alhadeff (1954) shows that the author agreed that, under certain circumstances, banks can create credit and money: “In certain cases, the proportion between the legal reserve ratio and residual deposits is such that even a single bank can expand its deposits to a somewhat greater amount than its primary deposits. ... Again, it might be possible for a very large bank, or a bank in an isolated community with few business connections with outside banks, literally to create money because of flow back deposits. [Footnote: ‘Flow-back deposits refer to the circulation of deposits among the depositors of the same bank.’] In either case, this amounts to a partial reduction in the average cost of producing credit (making loans), at least in terms of the raw material costs ...” (Alhadeff, 1954, p. 7). Although Alhadeff, if studied closely, could be said to have agreed that an individual bank can create credit out of nothing, he clearly thought this to be a special case without practical relevance, while it is normally only the banking system in aggregate that creates credit.

per cent of total deposits. True enough. But how does the bank pay for the investments or earning assets that it buys? Like everyone else it writes out a check — to the man who sells the bond or signs the promissory note. ... The borrower spends the money on labor, on materials, or perhaps on an automobile. The money will very soon, therefore, have to be paid out of the bank. ... A bank cannot eat its cake and have it too. Table 4b gives, therefore a completely false picture of what an individual bank can do" (pp. 325 ff.).

Instead, Samuelson explains, since all the money lent out will leave the bank, an individual bank cannot create credit out of nothing:

"As far as this first bank is concerned, we are through. Its legal reserves are just enough to match its deposits. There is nothing more it can do until the public decides to bring in some more money on deposit" (p. 326).

On the other hand, Samuelson emphasises that

"The banking system as a whole can do what each small bank cannot do!" (p. 324),

namely create money. This, Samuelson explains via the iterative process of one bank's loans (based on prior deposits) becoming another bank's deposits, and so forth. He shows "this chain of deposit creation" in a table, amounting to total deposits in the banking system of \$5000 (out of the \$1000), due to the reserve requirement of 20% implying a 'money multiplier' of 5 times (assuming no cash 'leakage').

What Samuelson calls the "multiple deposit expansion" is described in the same way and with remarkable similarity in the fifteenth edition of his book (Samuelson & Nordhaus, 1995) half a century later, only that the reserve requirement cited as example has been lowered to 10%: "All banks can do what one can't do alone" (p. 493). There are subtle though important differences. The overall space devoted to this topic is much smaller in 1995 compared to 1948. The modern textbook says that the central bank-created reserves are used by the banks "as an input" and then "transformed" "into a much larger amount of bank money" (p. 490). There is far less of an attempt to deal with the *credit creation theory*. Instead, each bank is unambiguously represented as a pure financial intermediary, collecting deposits and lending out this money (minus the reserve requirement).²⁶ The *fractional reserve theory* had become mainstream:

"Each small bank is limited in its ability to expand its loans and investments. It cannot lend or invest more than it has received from depositors" (p. 496).

Meanwhile, bank deposit money is "supplied" by "the financial system" in an abstract process that each individual bank has little control over (p. 494). The unambiguous fractional reserve theory thus appears to have come about in the years after the 1950s. It can be described in Fig. 1.

In this scheme, funds move between the public, the banks and the central bank without any barriers. Each bank is a financial intermediary, but in aggregate, due to fractional reserve banking, money is created (multiplied) in the banking system. Specifically, each bank can only grant a loan if it has previously received new reserves, of which a fraction will always be deposited with the central bank. It will then only be able to lend out as much as these excess reserves, as is made clear in major textbooks. In the words of Stiglitz (1997):

²⁶ Moreover, the original Samuelson (1948: 331) offered an important (even though not prominently displayed) section headed "Simultaneous expansion or contraction by all banks", which provided the caveat that each individual bank could, after all, create deposits, if only all banks did the same at the same rate (thus outflows being on balance cancelled by inflows, as Alhadef, 1954, also mentioned). There is no such reference in the modern, 'up-to-date' textbook.

The Textbook Representation of 'Money Multiplication'

	Deposit	-	1% Reserve	=	Loanable Funds
Bank A	\$100	-	\$1	=	\$99.00
Bank B	\$99	-	\$0.99	=	\$98.01
Bank C	\$98.01	-	\$0.9801	=	\$97.0299

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	Σ\$10,000	-	Σ\$100	=	Σ \$9,900.00

Source: Werner (2005), p. 175.

Fig. 1. The fractional reserve theory as represented in many textbooks.

"It should be clear that when there are many banks, no individual bank can create multiple deposits. Individual banks may not even be aware of the role they play in the process of multiple-deposit creation. All they see is that their deposits have increased and therefore they are able to make more loans" (p. 737).

In another textbook on money and banking:

"In this example, a person went into bank 1 and deposited a \$100,000 check drawn on another bank. That \$100,000 became part of the reserves of bank 1. Because that deposit immediately created excess reserves, further loans were possible for bank 1. Bank 1 lent the excess reserves to earn interest. A bank will not lend more than its excess reserves because, by law, it must hold a certain amount of required reserves."

[Miller and VanHoose (1993, p. 331)]

The deposit of a cheque from another bank does not however increase the "total amounts of deposits and money":

"Remember, though, that the deposit was a check written on another bank. Therefore, the other bank suffered a decline in its transactions deposits and its reserves. While total assets and liabilities in bank 1 have increased by \$100,000, they have decreased in the other bank by \$100,000. Thus the total amount of money and credit in the economy is unaffected by the transfer of funds from one depository institution to another. Each depository institution can create loans (and deposits) only to the extent that it has excess reserves. The thing to remember is that new reserves are not created when checks written on one bank are deposited in another bank. The Federal Reserve System, however, can create new reserves" (p. 331).

The textbook by Heffernan (1996) says:

"To summarise, all modern banks act as intermediaries between borrowers and lenders, but they may do so in a variety of different ways, from the traditional function of taking deposits and lending a percentage of these deposits, to fee-based financial services" (p. 18).

"For the bank, which pools these surplus funds, there is an opportunity for profit through fractional reserve lending, that is, lending out

money at an interest rate which is higher than what the bank pays on the deposit, after allowing for the riskiness of the loan and the cost of intermediation" (p. 20).

While the *fractional reserve theory* succeeded in attracting many followers, rendering it an important and influential theory until this day, it is not famous for its clarity:

"The problem of the manner in which the banking system increases the total volume of the circulating medium, while at the same time the lending power of the individual banks is severely limited, has proved to be one of the most baffling for writers on banking theory."
[Mints (1945, p. 39)]

Several attempts were made to resolve this within the *fractional reserve theory* of banking, such as that by Saving (1977), who rendered the supply of bank deposits a function of the behaviour of the savers – arguing that the money supply is endogenous. This effectively pushed out the intermediary function from the individual bank level to the economy level, and helped ushering in the formulation of the *financial intermediation theory* to which we now turn.

2.3. The financial intermediation theory

While the *fractional reserve theory* of banking was influential from the 1930s to the 1960s, Keynes may have sown important seeds of doubt. Already in his *Treatise*, Keynes (1930) makes use of inverted commas in order to refer, suggestively, to 'The "Creation" of Bank-Money' (a section title). This rhetorical device, employed by the expert already hailed as the leading economist in the world, implied disapproval, as well as mockery of the concept that banks could create money out of nothing. The device was copied by many other writers after Keynes who also emphasised the role of banks as 'financial intermediaries'. In Keynes' words:

"A banker is in possession of resources which he can lend or invest equal to a large proportion (nearly 90%) of the deposits standing to the credit of his depositors. In so far as his deposits are Savings-deposits, he is acting merely as an intermediary for the transfer of loan-capital. In so far as they are Cash-deposits, he is acting both as a provider of money for his depositors, and also as a provider of resources for his borrowing-customers. Thus the modern banker performs two distinct sets of services. He supplies a substitute for State Money by acting as a clearing-house and transferring current payments backwards and forwards between his different customers by means of book-entries on the credit and debit sides. But he is also acting as a middleman in respect of a particular type of lending, receiving deposits from the public which he employs in purchasing securities, or in making loans to industry and trade mainly to meet demands for working capital. This duality of function is the clue to many difficulties in the modern Theory of Money and Credit and the source of some serious confusions of thought."
[Keynes (1930, vol. 2, p. 213)]

The Keynes of the *Treatise* seems to say that the two functions of banks are to either act as financial intermediary fulfilling the utility banking function of settling trades, or to act as financial intermediary gathering deposits and lending the majority of these out. There seems no money creation at all involved, certainly not on the individual bank level. Keynes' most influential opus, *General Theory* (Keynes, 1936) quickly eclipsed his earlier *Treatise on Money* in terms of its influence on public debate. In the *General Theory*, Keynes did not place any emphasis on banks, which he now argued were financial intermediaries that needed to acquire deposits before they could lend:

"The notion that the creation of credit by the banking system allows investment to take place to which 'no genuine saving' corresponds

can only be the result of isolating one of the consequences of the increased bank-credit to the exclusion of the others. ... It is impossible that the intention of the entrepreneur who has borrowed in order to increase investment can become effective (except in substitution for investment by other entrepreneurs which would have occurred otherwise) at a faster rate than the public decide to increase their savings. ... No one can be compelled to own the additional money corresponding to the new bank-credit, unless he deliberately prefers to hold more money rather than some other form of wealth. ... Thus the old-fashioned view that saving always involves investment, though incomplete and misleading, is formally sounder than the newfangled view that there can be saving without investment or investment without 'genuine' saving."
[Keynes (1936, pp. 82 ff.)]

Schumpeter (1954) commented on this shift in Keynes' view:

The "deposit-creating bank loan and its role in the financing of investment *without any previous saving up of the sums thus lent* have practically disappeared in the analytic schema of the General Theory, where it is again the saving public that holds the scene. Orthodox Keynesianism has in fact reverted to the old view Whether this spells progress or retrogression, every economist must decide for himself" (p. 1115, italics in original).

The early post-war period saw unprecedented influence of Keynes' General Theory, and a Keynesian school of thought that managed to ignore Keynes' earlier writings on bank credit creation, became dominant in academia. Given that a former major proponent of both the *credit creation* and the *fractional reserve theories* of banking had shifted his stance to the new *financial intermediation theory*, it is not surprising that others would follow.

A highly influential challenge to the *fractional reserve theory* of banking was staged by Gurley and Shaw (1955, 1960). They rejected the view that "banks stand apart in their ability to create loanable funds out of hand while other intermediaries in contrast are busy with the modest brokerage function of transmitting loanable funds that are somehow generated elsewhere" (1955, p. 521). Beyond the usual rhetorical devices to denigrate the alternative theories, Gurley and Shaw's actual argument was that banks should not be singled out as being 'special', since the banks' financial intermediation function is identical to that of other financial intermediaries:

"There are many similarities between the monetary system and non-monetary intermediaries, and the similarities are more important than the differences. Both types of financial institutions create financial claims; and both may engage in multiple creation of their particular liabilities in relation to any one class of asset that they hold."
[Gurley and Shaw (1960, p. 202)]

Banks and the banking system, we are told, like other financial intermediaries, need to first gather deposits, and then are able to lend these out. In this view, any remaining special role of banks is due to outmoded regulations, which treat banks differently. Therefore, they argue, the Federal Reserve should extend its banking supervision to the growing set of non-bank financial intermediaries, thus treating them equally to banks.

Initial challenges by proponents of the *fractional reserve theory* of banking (see Guttentag & Lindsay, 1968) were swept away during the 1960s, when James Tobin, a new rising star in economics, took a clear stand to proclaim another 'new view' of banking, formulating the modern version of the *financial intermediation theory* of banking.

"Tobin (1963), standing atop the wreckage in 1963 to set forth the 'new view' of commercial banking, stands squarely with Gurley and Shaw against the traditional view."
[Guttentag and Lindsay (1968, p. 993)]

Like Keynes, Alhadreff and others before him, Tobin only referred to bank credit creation in inverted commas, and used rhetorical devices to ridicule the idea that banks, individually or collectively, could create money and credit. Tobin (1963) argued:

"Neither individually nor collectively do commercial banks possess a widow's cruse" (p. 412).

"The distinction between commercial banks and other financial intermediaries has been too sharply drawn. The differences are of degree, not of kind In particular, the differences which do exist have little intrinsically to do with the monetary nature of bank liabilities ... The differences are more importantly related to the special reserve requirements and interest rate ceilings to which banks are subject. Any other financial industry subject to the same kind of regulations would behave in much the same way" (p. 418).

Banks only seem to be different from others, because regulators erroneously chose to single them out for special regulation. In Tobin's view, "commercial banks are different, because they are controlled, and not the other way around" (Guttentag & Lindsay, 1968, p. 993). Tobin and Brainard's (1963) portfolio model made no distinction between banks and non-bank financial intermediaries, indeed, ignored the role of banks altogether and contributed much towards the modern mainstream view of economics models without banks. Branson (1968) further developed Tobin's new approach, which was popular in the leading journals.

Guttentag and Lindsay (1968) wrote in the *Journal of Political Economy* that despite the challenge by Gurley and Shaw (1955) "The uniqueness issue, on the other hand, remains unsettled" (p. 992). Banks, they argued, are different in their role and impact from non-bank financial intermediaries, since "commercial banks have a greater capacity for varying the aggregate volume of credit than other financial intermediaries" (p. 991). "These points provide a rationale for special controls on commercial banks that goes beyond the need to prevent financial panic. It is the rationale that has been sought by defenders of the traditional view that commercial banks are 'unique' ever since the Gurley-Shaw challenge to this view" (p. 991).

Undaunted, Tobin (1969) re-states his view in an article establishing his portfolio balance approach to financial markets, which argues that financial markets are complex webs of assets and prices, leaving banks as one of many types of intermediaries, without any special role.²⁷ This was the first article in the first edition of a new journal, the *Journal of Money, Credit and Banking*. While its name may suggest openness towards the various theories of banking, in practice it has only published articles that did not support the *credit creation theory* and were mainly in line with the *financial intermediation theory*. This is also true for most other journals classified as 'leading journals' in economics (for instance, using the 4-rated journals from the UK Association of Business Schools list in economics). Henceforth, the portfolio balance approach, which treated all financial institutions as mere portfolio managers, was to hold sway. It helped the *financial*

intermediation theory become the dominant creed among economists world-wide.

Modern proponents of the ubiquitous *financial intermediation theory* include, among others, Klein (1971), Monti (1972), Sealey and Lindley (1977), Diamond and Dybvig (1983), Diamond (1984, 1991, 2007), Eatwell, Milgate, and Newman (1989), Gorton and Pennacchi (1990), Bencivenga and Smith (1991), Bernanke and Gertler (1995), Rajan (1998), Myers and Rajan (1998), Allen and Gale (2000, 2004a,b), Allen and Santomero (2001), Diamond and Rajan (2001), Kashyap, Rajan, and Stein (2002), Hoshi and Kashyap (2004), Matthews and Thompson (2005), Casu and Girardone (2006), Dewatripont, Rochet and Tirole (2010), Gertler and Kiyotaki (2011) and Stein (2014). There are many more: It is impossible to draw up a conclusive list, since the vast majority of articles published in leading economics and finance journals in the last thirty to forty years is based on the *financial intermediation theory* as premise.²⁸

Quoting only a few examples, Klein (1971), Monti (1972) (later to become EU commissioner and prime minister of Italy), and others model banks as financial intermediaries, gathering deposits and lending these funds out:

"The bank has two primary sources of funds; the equity originally invested in the firm ... and borrowed funds secured through the issuance of various types of deposits"

[Klein (1971, p. 208)]

"... It will be shown how the bank determines the prices it will pay for various types of deposits and how these prices, in conjunction with the deposit supply functions the bank confronts, determine the scale and composition of the bank's deposit liabilities the bank will assume."

[Klein (1971, p. 210)]

Diamond and Dybvig (1983) are cited as the seminal work on banking, and they argue that "illiquidity of assets provides the rationale both for the existence of banks and for their vulnerability to runs" (p. 403). But in actual fact their theory makes no distinction between banks and non-banks. They therefore are unable to explain why we have heard of bank runs, but not of 'insurance runs' or 'finance company runs', although the latter also hold illiquid assets and give out loans. Diamond and Dybvig fail to identify what could render banks special since they assume that they are not.

Other theories of banks as financial intermediaries are presented by Mayer (1988) and Hellwig (1977, 1991, 2000), who also believe that banks are merely financial intermediaries:

"The analysis uses the original model of Diamond (1984) of financial contracting with *intermediation as delegated monitoring*. ... Monitoring is assumed to be too expensive to be used by the many households required to finance a firm or an intermediary. However direct finance of firms based on nonpecuniary penalties may be dominated by intermediated finance with monitoring of firms by an intermediary who in turn obtains funds from households through contracts involving nonpecuniary penalties."

[Hellwig (2000, pp. 721 ff.)]

Banking expert Heffernan (1996) states:

"The existence of the "traditional" bank, which intermediates between borrower and lender, and which offers a payments service to its customers, fits in well with the Coase theory" (p. 21).

²⁸ This also means that the innumerable PhD theses and Masters dissertations produced in this area in the last thirty years or so are mainly based on the *financial intermediation theory*. For instance, Wolfe (1997) states: "Banks possess the power of intermediation, which is the ability to transform deposits into loans. Deposits with one set of characteristics are transformed into assets with other or different characteristics" (p. 12).

²⁷ The conclusion of Tobin's paper: "According to this approach, the principal way in which financial policies and events affect aggregate demand is by changing the valuations of physical assets relative to their replacement costs. Monetary policies can accomplish such changes, but other exogenous events can too. In addition to the exogenous variables explicitly listed in the illustrative models, changes can occur, and undoubtedly do, in the portfolio preferences – asset demand functions – of the public, the banks, and other sectors. These preferences are based on expectations, estimates of risk, attitudes towards risk, and a host of other factors. In this complex situation, it is not to be expected that the essential impact of monetary policies and other financial events will be easy to measure in the absence of direct observation of the relevant variables (q in the models). There is no reason to think that the impact will be captured in any single exogenous or intermediate variable, whether it is a monetary stock or a market interest rate" (Tobin, 1969, p. 29).

... or a leading textbook on international economics and finance, by Krugman and Obstfeld (2000):

"Banks use depositors' funds to make loans and to purchase other assets ..." (p. 659).

A widely used reference work on banking and money – the New Palgrave *Money* (Eatwell et al., 1989) – contains a number of contributions by leading monetary economists and banking experts. In it, Baltensperger (1989) clearly supports the *financial intermediation theory*:

"The role of credit as such must be clearly separated from the economic role of credit institutions, such as banks, playing the role of specialised intermediaries in the credit market by buying and simultaneously selling credit instruments (of a different type and quality). Since the ultimate borrowers and lenders can, in principle, do business with each other directly, without the help of such an intermediary, the function of these middlemen must be viewed as separate from that of credit as such. Two main functions of institutions of this kind can be distinguished. The first is the function of risk consolidation and transformation. ... The second major function of these institutions is that of a broker in the credit markets. As such, they specialise in producing intertemporal exchange transactions and owe their existence to their ability to bring together creditors and debtors at lower costs than the latter can achieve in direct transactions themselves" (pp. 100 ff.).

Indeed, almost all authors in this reference book refer to banks as mere financial intermediaries, even Goodhart (1989):

"Intermediation' generally refers to the interposition of a financial institution in the process of transferring funds between ultimate savers and ultimate borrowers. ... Disintermediation is then said to occur when some intervention, usually by government agencies for the purpose of controlling, or regulating, the growth of financial intermediaries, lessens their advantages in the provision of financial services, and drives financial transfers and business into other channels. ... An example of this is to be found when onerous reserve requirements on banks lead them to raise the margin (the spread) between deposit and lending rates, in order to maintain their profitability, so much that the more credit-worthy borrowers are induced to raise short-term funds directly from savers, for example, in the commercial paper market" (p. 144).

Myers and Rajan (1998) state:

"We model the intermediary as a bank that borrows from a number of individual investors for its own core business and to lend on to a project. ... Even though the bank can extract more from the ultimate borrower, the bank has to finance these loans by borrowing from individual investors" (p. 755).

Allen and Santomero (2001), in their paper entitled 'What do financial intermediaries do?' state:

"In this paper we use these observations as a starting point for considering what it is that financial intermediaries do. At center, of course, financial systems perform the function of reallocating the resources of economic units with surplus funds (savers) to economic units with funding needs (borrowers)" (p. 272).

Kashyap (2002) also believes that banks are pure financial intermediaries, not materially distinguishable from other non-bank financial institutions.²⁹

Stein (2014) states, albeit with some hesitation:

"... at least in some cases, it seems that a bank's size is determined by its deposit franchise, and that, taking these deposits as given, its problem then becomes one of how best to invest them" (p. 5).

"Overall, our synthesis of these stylised facts is that banks are in the business of taking deposits and investing these deposits in fixed-income assets that have certain well-defined risk and liquidity attributes but which can be either loans or securities" (p. 7).

The *financial intermediation theory* includes the 'credit view' in macroeconomics, proposing a 'bank lending channel' of monetary transmission (Bernanke & Blinder, 1989; Bernanke & Gertler, 1995), as well as the neo-classical and new classical macroeconomic models (if they consider banks at all). To these and most contemporary authors in economics and finance, banks are financial intermediaries like other firms in the financial sector, which focus on the 'transformation' of liabilities with particular features into assets with other features (e.g. with respect to maturity, liquidity and quantity/size), or which focus on 'monitoring' others (Sheard, 1989, another adherent of the *financial intermediation theory of banking*), but do not create credit individually or collectively. This is true for many 'Post-Keynesians' who argue that the money supply is determined by the demand for money. It is also true for popular descriptions, such as that by Koo and Fujita (1997) who argue that banks are merely financial intermediaries:

"But those financial institutions that are counterparties of the Bank of Japan obtain their funding primarily from the money that depositors have deposited with them. This money they cannot pass on for consumption and capital investment, because they have to lend it at interest to earn money. In other words, for this money to support the economy, these financial institutions must lend it to firms and individuals. Those borrowers must then use it to buy assets such as machinery or housing or services" (p. 31).

A recent paper by Allen, Carletti, and Gale (2014) introduces money – albeit only cash created by the central bank, while banks are mere financial intermediaries that cannot create money or credit.

As a result, the leading forecasting models used by policy makers also do not include banks (Bank of England, 2014a). Even the original meaning of credit creation seems forgotten by the modern literature: Bernanke (1993) uses the expression 'credit creation' much in his article, but explains that this concept is defined as "the process by which saving is channeled to alternative uses", i.e. financial intermediation of savers' deposits into loans:

"This fortuitous conjunction of events and ideas has contributed to an enhanced appreciation of the role of credit in the macroeconomy by most economists and policymakers. The purpose of this paper is to review and interpret some recent developments in our understanding of the macroeconomic role of credit or, more accurately, of the credit creation process. By *credit creation process* I mean the process by which, in exchange for paper claims, the savings of specific individuals or firms are made available for the use of other individuals or firms (for example to make capital investments or simply to consume). Note that I am drawing a strong distinction between credit creation, which is the process by which saving is channeled to alternative uses, and the act of saving itself. ... In my broad conception of the credit creation process I include most of the value-added of the financial industry, including the information-gathering, screening, and monitoring activities required to make sound loans or investments, as well as much of the risk-sharing, maturity transformation, and liquidity provision services that attract savers and thus support the basic lending and investment functions. I also want to include in my definition of the credit creation process activities undertaken by potential borrowers to transmit information about themselves to lenders: for example, for firms, these activities include provision of data to the

²⁹ See Werner (2003b) for a detailed critique of Kashyap (2002).

public, internal or external auditing, capital structure decisions, and some aspects of corporate governance. The efficiency of the credit creation process is reflected both in its ability to minimise the direct costs of extending credit (for example, the aggregate wage bill of the financial industry) and in the degree to which it is able to channel an economy's savings into the most productive potential uses. The presumption of traditional macroeconomic analysis is that this credit creation process, through which funds are transferred from ultimate savers to borrowers, works reasonably smoothly and therefore can usually be ignored."

[Bernanke (1993, pp. 50 ff.)]

As Bernanke points out, those works that assume such a financial intermediation role for banks will therefore often ignore banks entirely: they cannot be particularly important or relevant in the economy. Many went as far as to leave out any kind of money (there are no monetary aggregates in Kiyotaki & Moore, 1997; Woodford, 2003). The most widely used textbook in advanced Master-level economics at leading British universities in 2010 was Romer (2006). On page 3, Romer tells us:

"Incorporating money in models of [economic] growth would only obscure the analysis" (p. 3).

2.4. Conclusion of the literature review

Since the 1960s it has become the conventional view not to consider banks as unique and able to create money, but instead as mere financial intermediaries like other financial firms, in line with the *financial intermediation theory of banking*. Banks have thus been dropped from economics models, and finance models have not suggested that bank action has significant macroeconomic effects. The questions of where money comes from and how the money supply is created and allocated have remained unaddressed.

The literature review has identified a gradual progression of views from the *credit creation theory* to the *fractional reserve theory* to the present-day ubiquitous *financial intermediation theory*. The development has not been entirely smooth; several influential writers have either changed their views (on occasion several times) or have shifted between the theories. Keynes, as an influential economist, did little to enhance clarity in this debate, as it is possible to cite him in support of each of the three hypotheses, through which he seems to have moved sequentially.³⁰ Some institutions, such as the Bank of England, manage to issue statements in support of all three theories.

We conclude from the literature survey that all three theories of banking have been well represented in the course of the 20th century, by leading figures of the day. However, the conclusion by Sir Josiah Stamp (1927), a director at the Bank of England, still seems to hold today, namely that there is "a fair state of muddlement ... on the apparently simple question: 'Can the banks create credit, and if so, how, and how much?'" Despite a century or so of theorising on the matter, there has been little progress in establishing facts unambiguously. Thus today the conclusion of 1968 applies, namely that the issue cannot be considered as 'settled'. It is possible that the pendulum is about to swing away from the *financial intermediation theory* to one of the other two. But how can we avoid that history will merely repeat itself and the profession will spend another century locked into a debate without firm conclusion?

How can the issue be settled and the 'muddlement' cleared up? One reason for this "state of muddlement" is likely to be the methodology dominant in 20th century economics, namely the hypothetico-deductive method. Unproven 'axioms' are 'posed' and unrealistic assumptions added, to build a theoretical model. This can be done for all three theories, and we would be none the wiser about which of them actually

applied. How can the issue be settled? The only way the facts can be established is to leave the world of deductive theoretical models and consider empirical reality as the arbiter of truth, in line with the inductive methodology. In other words, it is to empirical evidence we must turn to settle the issue.

3. The empirical test

The simplest possible test design is to examine a bank's internal accounting during the process of granting a bank loan. When all the necessary bank credit procedures have been undertaken (starting from 'know-your-customer' and anti-money laundering regulations to credit analysis, risk rating to the negotiation of the details of the loan contract) and signatures are exchanged on the bank loan, the borrower's current account will be credited with the amount of the loan. The key question is whether as a prerequisite of this accounting operation of booking the borrower's loan principal into their bank account the bank actually withdraws this amount from another account, resulting in a reduction of equal value in the balance of another entity – either drawing down reserves (as the *fractional reserve theory* maintains) or other funds (as the *financial intermediation theory* maintains). Should it be found that the bank is able to credit the borrower's account with the loan principal without having withdrawn money from any other internal or external account, or without transferring the money from any other source internally or externally, this would constitute prima facie evidence that the bank was able to create the loan principal out of nothing. In that case, the credit creation theory would be supported and the theory that the individual bank acts as an intermediary that needs to obtain savings or funds first, before being able to extend credit (whether in conformity with the *fractional reserve theory* or the *financial intermediation theory*), would be rejected.

3.1. Expected results

With a bank loan of €200,000, drawn by the researcher from a bank, the following changes in the lending bank's accounting entries are expected a priori according to each theory:

- (a) Bank credit accounting according to the *credit creation theory*. According to this theory, banks behave very differently from financial intermediaries, such as stock brokers, since they do not separate customer funds from own funds. Money 'deposited' with a bank becomes the legal property of the bank and the 'depositor' is actually a lender to the bank, ranking among the general creditors. When extending bank credit, banks create an imaginary deposit, by recording the loan amount in the borrower's account, although no new deposit has taken place (*credit creation out of nothing*). The balance sheet lengthens. Cash, central bank reserves or balances with other banks are not immediately needed, as reserve and capital requirements only need to be met at particular measurement intervals. The account changes are shown in Table 1.
- (b) Bank credit accounting according to the *fractional reserve theory*. The distinguishing feature of this theory is that each individual bank cannot create credit out of nothing. The bank is a financial intermediary indistinguishable from other financial intermediaries, such as stock brokers and securities firms. However, banks are said to be different in one respect, namely the regulatory treatment: regulators have placed onerous rules concerning reserves that have to be held with the central bank only on banks, not other financial intermediaries. A bank can only lend money,

Table 1
Account changes due to bank loan (*credit creation theory*).

Assets		Liabilities	
Loans and investments	+€ 200	Deposits (borrower's A/C)	+€ 200
Total	+€ 200	Total	+€ 200

³⁰ Though with the caveat that several of his statements, made at the same time, seem to support different theories of banking.

when it has previously received the same amount in excess reserves from another bank, whose own reserve balances will have declined, or from the central bank (Table 2).

Table 2
Account changes due to bank loan (fractional reserve theory).

Step 1. Precondition for the bank loan			
Assets		Liabilities	
Excess Reserves	+E 200	Deposits	+E 200
Total	+E 200	Total	+E 200
Step 2. The bank loan			
Assets		Liabilities	
Excess Reserves	- E 200		
Loans and investments	+E 200		
Total	0	Total	0

"A bank will not lend more than its excess reserves because, by law, it must hold a certain amount of required reserves. ... Each depository institution can create loans (and deposits) only to the extent that it has excess reserves."

[Miller and VanHoose (1993, p. 331)]

Following the exposition in Miller and VanHoose (1993, pp. 330–331), the balance sheet evolution in case of a €200,000 loan is as shown in Table 2.

In other words, for the bank to be able to make a loan, it first has to check its excess reserves, as this is, according to this theory, a strictly binding requirement and limitation, as well as its distinguishing feature. The bank cannot at any moment lend more money than its excess reserves, and it will have to draw down the reserve balance to lend. (Thus, as noted, another distinguishing feature is that the balance sheet expansion is driven by the prior increase in a deposit that boosted excess reserves, *not* by the granting of a loan).

It needs to be verified when the empirical test of bank lending is implemented, whether the bank first confirmed the precise amount of its available excess reserves before entering into the loan contract or paying out the loan funds to the customer, so as not to exceed that figure. If the bank is found not to have checked or not to have drawn down its reserve balances then this constitutes a rejection of the *fractional reserve theory*.

(c) Bank credit accounting according to the *financial intermediation theory*.

According to this theory, banks are, as far as payments and accounts are concerned, not different from non-bank financial institutions. The reserve requirement is not an issue – a claim supported by the empirical observation that reserve requirements have been abolished in a number of major economies, such as the UK and Sweden many years ago. However, UK financial intermediaries are required by FSA/FCA-administered Client Money rules to hold deposits in custody for customers (a form of warehousing, the deposits legally being bailments). Client funds of financial intermediaries, such as securities firms, stock brokers and the like are therefore still owned by the depositors and thus kept separately from the financial institutions' own funds, so that customer deposits are not shown on the balance sheet as liabilities. If banks are merely financial intermediaries, indistinguishable from other intermediaries, then all bank funds are central bank money that can be held in reserve at the central bank or deposited with other banks. The balance sheet implications are shown below in Table 3.

According to this theory, the bank balance sheet does not lengthen as a result of the bank loan: the funds for the loan are drawn from the bank's reserve account at the central bank.

Table 3
Account changes due to bank loan (fin. intermediation theory).

Assets		Liabilities	
Excess Reserves	- E 200		
Loans and investments	+ E 200		
Total	0	Total	0

3.2. A live empirical test

The design of the empirical test takes the form of a researcher entering into a live loan contract with the bank, and the bank extending a loan, while its relevant internal accounting is disclosed. Several banks in the UK and Germany were approached and asked to cooperate in an academic study of bank loan operations.

The large banks declined to cooperate. The reason given was usually twofold: the required disclosure of internal accounting data and procedures would breach their confidentiality or IT security rules; secondly, the transactions volumes of the banks were so large that the planned test would be very difficult to conduct when borrowing sensibly sized amounts of money that would not clash with the banks' internal risk management rules. In that case, any single transaction would not be easy to isolate within the bank's IT systems. Despite various discussions with a number of banks, in the end the banks declined on the basis of the above reasons and additionally that the costs of operating their systems and controlling for any potential other transactions would be prohibitive.

It was therefore decided to approach smaller banks, of which there are many in Germany (there are approximately 1700 local, mostly small banks in Germany). Each owns a full banking license and engages in universal banking, offering all major banking services, including stock trading and currencies, to the general public. A local bank with a balance sheet of approximately €3 billion was approached, as well as a bank with a balance sheet of about €700 million. Both declined on the same grounds as the larger banks, but one suggested that a much smaller bank might be able to oblige, pointing out the advantage that there would be fewer transactions booked during the day, allowing a clearer identification of the empirical test transaction. At the same time the empirical information value would not diminish with bank size, since all banks in the EU conform to identical European bank regulations.

Thus an introduction to Raiffeisenbank Wildenberg e.G., located in a small town in the district of Lower Bavaria was made. The bank is a cooperative bank within the Raiffeisen and cooperative banking association of banks, with eight full-time staff. The two joint directors, Mr. Michael Betzenbichler and Mr. Marco Rebl both agreed to the empirical examination and also to share all available internal accounting records and documentation on their procedures. A written agreement was signed that confirmed that the planned transactions would be part of a scientific empirical test, and the researcher would not abscond with the funds when they would be transferred to his personal account, and undertakes to immediately repay the loan upon completion of the test (Supplementary material 1 in online Appendix 3). One limitation on the accounting records which is common to most banks is that they are outsourcing the IT to a specialised bank IT company, which maintains its own rules concerning data protection and confidentiality.

The IT firm serves the majority of the 1,100 cooperative banks in Germany, using the same software and internal systems and accounting rules, ensuring that the test is representative of more than 15% of bank deposits in Germany.

It was agreed that the researcher would personally borrow €200,000 from the bank. The transaction was undertaken on 7 August 2013 in the offices of the bank in Wildenberg in Bavaria. Apart from the two (sole) directors, also the head (and sole staff) of the credit department, Mr. Ludwig Keil was present. The directors were bystanders not engaging in any action. Mr. Keil was the only bank representative involved in processing the loan from the start of the customer documentation, to

the signing of the loan contract and finally paying out the loan into the borrower's account. The entire transaction, including the manual entries made by Mr. Keil, was filmed. The screens of the bank's internal IT terminal were also photographed. Moreover, a team from the BBC was present and filmed the central part of the empirical bank credit experiment (Reporter Alistair Fee and a cameraman).

The bank disclosed their standard internal credit procedure. The sequence of the key steps is shown in Appendix 1. As can be seen, the last two steps are the signing of the 'credit documents' by the borrower (the researcher) and, finally, the payment of the loan at the value date.³¹

The loan conditions were agreed: the researcher would borrow EUR 200,000 from the bank at the prime rate (the interest rate for the best customer). In the event the bank waived the actual interest proceeds, in support of the scientific research project.

When the bank loan contract was signed by both the bank and the borrower on 7 August 2013, the loan amount was immediately credited to the borrower's account with the bank, as agreed in the loan contract. Supplementary material 2 in online Appendix 2 shows the original borrower's accounts and balances with Raiffeisenbank Wildenberg. The key information from the account summary table is repeated here, in English, in Table 4.

The bank also issued the following accounts overview, which is a standard T-account of the transaction from the borrower's perspective (Table 5).

The borrower confirmed that his new current account with the bank now showed a balance of EUR 200,000 that was available for spending (An extension of the experiment, to be reported on separately, used the balance the following day for a particular transaction outside the banking institution, transferring the funds to another account of the researcher, held with another bank; this transfer was duly completed, demonstrating that the funds could be used for actual transactions).

We are now moving to the empirical test of the three banking theories. The critical question is: where did Raiffeisenbank Wildenberg e.G. obtain the funds from that the borrower (researcher) was credited with (and duly used and transferred out of the bank the following day)? When the researcher inquired about the bank's reserve holdings, in line with the *fractional reserve theory of banking*, director Marco Rebl explained that the bank maintained its reserves with the central organisation of cooperative banks, which in turn maintained an account with the central bank. These reserves amounted to a fixed amount of €350,000 that did not change during the observation period. Concerning the bank credit procedure, the researcher attempted to verify the source of the funds that were about to be lent.

Firstly, the researcher confirmed that the only three bank officers involved in this test and bank transaction were present throughout, whereby two (the directors) only watched and neither accessed any computer terminal nor transmitted any instructions whatsoever. The accounts manager (head of the credit department, Mr. Keil) was the only operator involved in implementing, booking and paying out the loan. His actions were filmed. It was noted and confirmed that none of the bank staff present engaged in any additional activity, such as ascertaining the available deposits or funds within the bank, or giving instructions to transfer funds from various sources to the borrower's account (for instance by contacting the bank internal treasury desk and contacting bank external interbank funding sources). Neither were instructions given to increase, draw down or borrow reserves from the central bank, the central cooperative bank or indeed any other bank or entity. In other words, it was apparent that upon the signing of the loan contract by both parties, the funds were credited to the borrower's account immediately, without

Table 4

The empirical researcher's new bank account.
Bank: Raiffeisenbank Wildenberg e.G.
Customer: Richard Werner.
Date: 7 August 2013.

Account no.	Type of product	Currency	A/C balance
<i>Current account</i>			
44636	Current account w/o fees	EUR	200,000.00
Total in EUR:			200,000.00
<i>Loan</i>			
20044636	Other private financing	EUR	-200,000.00
Total in EUR:			-200,000.00

any other activity of checking or giving instructions to transfer funds. There were no delays or deliberations or other bookings. The moment the loan was implemented, the borrower saw his current account balance increase by the loan amount. The overall credit transaction, from start to finish, until funds were available in the borrower's account, took about 35 min (and was clearly slowed down by the filming and frequent questions by the researcher).

Secondly, the researcher asked the three bank staff present whether they had, either before or after signing the loan contract and before crediting the borrower's account with the full loan amount inquired of any other parties internally or externally, checked the bank's available deposit balances, or made any bookings or transfers of any kind, in connection to this loan contract. They all confirmed that they did not engage in any such activity. They confirmed that upon signing the loan contract the borrower's account was credited immediately, without any such steps.

Thirdly, the researcher obtained the internal daily account statements from the bank. These are produced only once a day, after close of business. Since the bank is small, it was hoped that it would be possible to identify the impact of the €200,000 loan transaction, and distinguish the accounting pattern corresponding to one of the three banking hypotheses.

4. Results

Supplementary material 3 in online Appendix 3 shows the scan of the bank's balance sheet at the end of 6 August 2013, the day before the transaction of the empirical test was undertaken. Supplementary material 4 in online Appendix 3 shows the daily balance of the following day. In Table 6 the key asset positions are summarised and account names translated, for the end of the day prior to the loan experiment, and for the end of the day on which the researcher had borrowed the money. Table 7 shows the key liability positions for the same periods:

Starting by analysing the liability side information (Table 7), we find that customer deposits are considered part of the financial institution's balance sheet. This contradicts the *financial intermediation theory*, which assumes that banks are not special and are virtually indistinguishable from non-bank financial institutions that have to keep customer deposits off balance sheet. In actual fact, a bank considers a customers' deposits starkly differently from non-bank financial institutions, who record customer deposits off their balance sheet. Instead we find that the bank treats customer deposits as a loan to the bank, recorded under rubric 'claims by customers', who in turn receive as record of their loans to the bank (called 'deposits') what is known as their

Table 5

The empirical researcher's new bank account balances.

Accounts' overview				
EUR	Credit	Liabilities	Balance	No. contracts
Current account	200,000.00		200,000.00	1
Loan		200,000.00	-200,000.00	1
Bank sum total	200,000.00	200,000.00	0.00	2

³¹ It is of interest that the last step expressly requires the bank staff implementing this credit procedure to only pay out the loan for the agreed purpose, as evidence for which a receipt for any purchases undertaken with the loan funds are demanded by the bank. This demonstrates that the implementation of policies of credit guidance by purpose of the loan is practically possible, since such data is available and the use of the loan is monitored and enforced by each bank.

Table 6

Raiffeisenbank Wildenberg e.G.: daily accounts' assets.
6 August 2013, 22.46 h. vs. 7 August 2013, 22.56 h.
EUR.

Assets	Balance 6 Aug. 2013	Balance 7 Aug. 2013	Difference
1. Cash	181,703.03	340,032.89	158,329.86
2. Bills of exchange			
3. Claims on financial inst.	5,298,713.76	5,079,709.21	-219,004.55
4. Claims on customers	23,712,558.13	23,947,729.92	235,171.79
–Maturing daily	932,695.44	967,767.32	35,071.88
–Maturity under 4 years	1,689,619.97	1,889,619.97	200,000.00
–Maturity 4 years or longer	21,090,242.72	21,090,342.72	100.00
5. Bonds, bills, debt instr.	19,178,065.00	19,178,065.00	
6. Stocks and shares			
7. Stake holdings	397,768.68	397,768.68	
8. Stakes in related firms			
9. Trust assets	5262.69	5262.69	
10. Compensation claims on the public sector			
11. Immaterial assets	102.00	102.00	
12. Fixed assets	221,549.46	221,549.46	
13. Called but not deployed capital			
14. Other assets	707,569.26	711,288.64	3719.38
15. Balancing item	2844.32	2844.32	
16. Sum of assets	49,706,136.33	49,884,352.81	178,216.48

'account statement'. This can only be reconciled with the *credit creation* or *fractional reserve theories* of banking.

We observe that an amount not far below the loan balance (about €190,000) has been deposited with the bank. This is itself not far from the increase in total liabilities (and assets). Since the *fractional reserve hypothesis* requires such an increase in deposits as a precondition for being able to grant the bank loan, i.e. it must precede the bank loan, it is difficult to reconcile this observation with the *fractional reserve theory*. Moreover, the researcher confirmed that in his own bank account the loan balance of €200,000 was shown on the same day. This means that the increase in liabilities was driven by the increase by €200,000 in daily liabilities (item 2B BA in Table 7). Thus the total increase in liabilities could not have been due to a coincidental increase in customer deposits on the day of the loan. The liability side account information seems only fully in line with the *credit creation theory*.

Turning to an analysis of the asset side, we note that the category where we find our loan is item 4, claims on customers – fortunately the only one that day with a maturity below 4 years and hence clearly identifiable on the bank balance sheet. Apparently, customers also took out short-term loans (most likely overdrafts) amounting to €35,071.88, producing a total new loan balance of €235,071.88. In order to keep the analysis as simple as possible, let us proceed from here assuming that

Table 7

Raiffeisenbank Wildenberg e.G.: daily accounts' liabilities.
6 August 2013, 22.46 h. vs. 7 August 2013, 22.56 h.
EUR.

Liabilities	Balance 6 Aug. 2013	Balance 7 Aug. 2013	Difference
1. Claims by financial inst.	5,621,456.60	5,621,879.66	423.06
2. Claims by customers	39,589,177.09	39,759,156.42	169,979.33
2A. Savings accounts	10,234,806.01	10,237,118.24	2312.23
2B. Other liabilities	29,354,371.08	29,522,038.18	167,667.10
–BA daily	13,773,925.93	13,963,899.89	189,973.96
–BB maturity less 4 years	13,296,042.92	13,273,736.06	-22,306.86
–BC maturity 4 years or longer	2,284,402.23	2,284,402.23	
4. Trust liabilities	5262.70	5262.70	
5. Other liabilities	12,378.81	12,599.44	220.63
6. Balancing item	16,996.04	16,996.04	
7. Reserves	1,138,497.64	1,138,497.64	
11. Fund for bank risk	250,000.00	250,000.00	
12. Own capital	3,057,248.57	3,057,248.57	
13. Sum liabilities	49,706,136.33	49,884,352.81	178,216.48

our test loan amounted to this total loan figure (€235,071.88). So the balance sheet item of interest on the asset side is ΔA4, the increase in loans (claims on customers) amounting to €235,071.88.

We now would like to analyse the balance sheet in order to see whether this new loan of €235,071.88 was withdrawn from other accounts at the bank, or how else it was funded. We first proceed with considering activity on the asset side. Denoting balances in thousands below, we can summarise the balance sheet changes during the observation period, within the balance sheet constraints as follows:

$$\Delta \text{Assets} = \Delta A1(\text{cash}) + \Delta A3(\text{claims on other FI}) + \Delta A4(\text{claims on customers}) + \Delta A14(\text{other assets}). \quad (1)$$

Numerically, these are, rounded in thousand euro:

$$178 = 158 - 219 + 235 + 4. \quad (2)$$

The *fractional reserve theory* says that the loan balance must be paid from reserves. These can be either cash balances or reserves with other banks (including the central bank). The deposits (claims) with other financial institutions (which effectively includes the bank's central bank reserve balances) declined significantly, by €219,000. At the same time cash reserves increased significantly. What may have happened is that the bank withdrew legal tender from its account with the cooperative central bank, explaining both the rise in cash and decline in balances with other financial institutions. Since the theories do not distinguish between these categories, we can aggregate A1 and A3, the cash balances and reserves. Also, to simplify, we aggregate A14 (other assets) with A4 (claims on customers), to obtain:

$$178 = -61 + 239 \\ (\Delta \text{Assets}) (\Delta \text{reserves}) (\Delta \text{claims on customers, others}) \quad (3)$$

We observe that reserves fell, while claims on customers rose significantly. Moreover, total assets also rose, by an amount not dissimilar to our loan balance. Can this information be reconciled with the three theories of banking?

Considering the *financial intermediation hypothesis*, we would expect a decline in reserves (accounts with other financial institutions and cash) of the same amount as customer loans increased. Reserves however declined by far less. At the same time, the balance sheet expanded, driven by a significant increase in claims on customers. If the bank borrowed money from other banks in order to fund the loan (thus reducing its balance of net claims on other banks), in line with the *financial intermediation theory* of banking, vault cash should not increase and neither should the balance sheet. We observe both a significant rise in cash holdings and an expansion in the total balance sheet (total assets and total liabilities), which rose by €178,000. This cannot be reconciled with the *financial intermediation theory*, which we therefore must consider as rejected.

Considering the *fractional reserve theory*, we confirmed by asking the credit department's Mr. Keil, as well as the directors, that none of them checked their reserve balance or balance of deposits with other banks before signing the loan contract and making the funds available to the borrower (see the translated letter in Appendix 2, and the original letter in the online Appendix 3. Furthermore, there seems no evidence that reserves (cash and claims on other financial institutions) declined in an amount commensurate with the loan taken out. Finally, the observed increase in the balance sheet can also not be reconciled with the standard description of the *fractional reserve theory*. We must therefore consider it as rejected, too.

This leaves us with the *credit creation theory*. Can we reconcile the observed accounting asset side information with it? And what do we learn from the liability side information?

The transactions are linked to each other via the accounting identities of the balance sheet (Eqs. (1), (2) and (3)). We can therefore ask the question what would have happened to total assets, if we assumed for the

moment that no other transaction had taken place, apart from the loan (235). We can set the change in each asset item (except for $\Delta A4$, our loan) to zero, if we subtract the same amount from the change in total assets. The new total asset balance in this hypothetical scenario would be:

$$178 - 158 + 219 - 4 = 235 \quad (4)$$

or, in general,

$$\Delta A4(\text{claims on customers}) = \Delta \text{Assets} - \Delta A1(\text{cash}) - \Delta A3(\text{claims on other FI}) - \Delta A14(\text{other assets}). \quad (5)$$

In other words, if the other transactions had not happened, the bank's balance sheet would have expanded by the same amount as the loans taken out. This finding is consistent only with the *credit creation theory* of bank lending.

The evidence is not as easily interpreted as may have been desired, since in practice it is not possible to stop all other bank transactions that may be initiated by bank customers (who are nowadays able to implement transactions via internet banking even on holidays). But the available accounting data cannot be reconciled with the *fractional reserve* and the *financial intermediation* hypotheses of banking.

5. Conclusion

This paper was intended to serve two functions. First, the history of economic thought was examined concerning the question of how banks function. It was found that a long-standing controversy exists that has not been settled empirically. Secondly, empirical tests were conducted to settle the existing and continuing controversies and find out which of the three theories of banking is consistent with the empirical observations.

5.1. Three theories but no empirical test

Concerning the first issue, in this paper we identified three distinct hypotheses concerning the role of banks, namely the *credit creation theory*, the *fractional reserve theory* and the *financial intermediation theory*. It was found that the first theory was dominant until about the mid- to late 1920s, featuring leading proponents such as Macleod and Schumpeter. Then the second theory became dominant, under the influence of such economists as Keynes, Crick, Phillips and Samuelson, until about the early 1960s. From the early 1960s, first under the influence of Keynes and Tobin and the *Journal of Money, Credit and Banking*, the *financial intermediation theory* became dominant.

Yet, despite these identifiable eras of predominance, doubts have remained concerning each theory. Most recently, the *credit creation theory* has experienced a revival, having been championed again in the aftermath of the Japanese banking crisis in the early 1990s (Werner, 1992, 1997) and in the run-up to and aftermath of the European and US financial crises since 2007 (see Bank of England, 2014b; Benes & Kumhof, 2012; Ryan-Collins, Greenham, Werner, & Jackson, 2011, 2012; Werner, 2003a, 2005, 2012). However, such works have not yet become influential in the majority of models and theories of the macro-economy or banking. Thus it had to be concluded that the controversy continues, without any scientific attempt having been made at settling it through empirical evidence.

5.2. The empirical evidence: credit creation theory supported

The second contribution of this paper has been to report on the first empirical study testing the three main hypotheses. They have been successfully tested in a real world setting of borrowing from a bank and

examining the actual internal bank accounting in an uncontrolled real world environment.

It was examined whether in the process of making money available to the borrower the bank transfers these funds from other accounts (within or outside the bank). In the process of making loaned money available in the borrower's bank account, it was found that the bank did not transfer the money away from other internal or external accounts, resulting in a rejection of both the *fractional reserve theory* and the *financial intermediation theory*. Instead, it was found that the bank newly 'invented' the funds by crediting the borrower's account with a deposit, although no such deposit had taken place. This is in line with the claims of the *credit creation theory*.

Thus it can now be said with confidence for the first time – possibly in the 5000 years' history of banking – that it has been empirically demonstrated that each individual bank creates credit and money out of nothing, when it extends what is called a 'bank loan'. The bank does not loan any existing money, but instead creates new money. The money supply is created as 'fairy dust' produced by the banks out of thin air.³² The implications are far-reaching.

5.3. What is special about banks

Henceforth, economists need not rely on assertions concerning banks. We now know, based on empirical evidence, why banks are different, indeed unique – solving the longstanding puzzle posed by Fama (1985) and others – and different from both non-bank financial institutions and corporations: it is because they can individually create money out of nothing.

5.4. Implications

5.4.1. Implications for economic theory

The empirical evidence shows that of the three theories of banking, it is the one that today has the least influence and that is being belittled in the literature that is supported by the empirical evidence. Furthermore, it is the theory which was widely held at the end of the 19th century and in the first three decades of the twentieth. It is sobering to realise that since the 1930s, economists have moved further and further away from the truth, instead of coming closer to it. This happened first via the half-truth of the *fractional reserve theory* and then reached the completely false and misleading *financial intermediation theory* that today is so dominant. Thus this paper has found evidence that there has been no progress in scientific knowledge in economics, finance and banking in the 20th century concerning one of the most important and fundamental facts for these disciplines. Instead, there has been a regressive development. The known facts were unlearned and have become unknown. This phenomenon deserves further research. For now it can be mentioned that this process of unlearning the facts of banking could not possibly have taken place without the leading economists of the day having played a significant role in it. The most influential and famous of all 20th century economists, as we saw, was a sequential adherent of all three theories, which is a surprising phenomenon. Moreover, Keynes used his considerable clout to slow scientific analysis of the question whether banks could create money, as he instead engaged in ad hominem attacks on followers of the *credit creation theory*. Despite his enthusiastic early support for the *credit creation theory* (Keynes, 1924), only six years later he was condescending, if not dismissive, of this theory, referring to credit creation only in inverted commas. He was perhaps even more dismissive of supporters of the *credit creation theory*, who he referred to as being part of the "Army of Heretics and Cranks, whose numbers and enthusiasm are extraordinary", and who

³² Thanks to Charlie Haswell for the 'fairy dust' allegory.

seem to believe in “magic” and some kind of “Utopia” (Keynes, 1930, vol. 2, p. 215).³³

Needless to mention, such rhetoric is not conducive to scientific argument. But this technique was followed by other economists engaged in advancing the *fractional reserve* and later *financial intermediation* theories. US Federal Reserve staffer Alhadeff (1954) argued similarly during the era when economists worked on getting the fractional reserve theory established:

“One complication worth discussing concerns the alleged “creation” of money by bankers. It used to be claimed that bankers could create money by the simple device of opening deposit accounts for their business borrowers. It has since been amply demonstrated that under a fractional reserve system, only the totality of banks can expand deposits to the full reciprocal of the reserve ratio. [Original footnote: ‘Chester A. Phillips, *Bank Credit* (New York: Macmillan, 1921), chapter 3, for the classical refutation of this claim.’] The individual bank can normally expand to an amount about equal to its primary deposits” (p. 7).

The creation of credit by banks had become, in the style of Keynes (1930), an “alleged creation”, whereby rhetorically it was suggested that such thinking was simplistic and hence could not possibly be true. Tobin used the rhetorical device of *abductio ad absurdum* to denigrate the *credit creation theory* by incorrectly suggesting it postulated a “widow’s cruse”, a miraculous vessel producing unlimited amounts of valuable physical goods, and thus its followers were believers in miracles or utopias.

This same type of rhetorical denigration of and disengagement with the *credit creation theory* is also visible in the most recent era. For instance, the *New Palgrave Money* (Eatwell et al., 1989), is an influential 340-page reference work that claims to present a ‘balanced perspective on each topic’ (Eatwell et al., 1989, p. viii). Yet the *financial intermediation theory* is dominant, with a minor representation of the *fractional reserve theory*. The *credit creation theory* is not presented at all, even as a possibility. But the book does include a chapter entitled “Monetary cranks”. In this brief chapter, Keynes’ (1930) derogatory treatment of supporters of the *credit creation theory* is updated for use in the 1990s, with sharpened claws: Ridicule and insult is heaped on several fateful authors that have produced thoughtful analyses of the economy, the monetary system and the role of banks, such as Nobel laureate Sir Frederick Soddy (1934) and C.H. Douglas (1924). Even the seminal and influential work by Georg Friedrich Knapp (1905), still favourably cited by Keynes (1936), is identified as being created by a ‘crank’. What these apparently wretched authors have in common, and what seems to be their main fault, punishable by being listed in this inauspicious chapter, is that

³³ “There is a common element in the theories of nearly all monetary heretics. Their theories of Money and Credit are alike in supposing that in some way the banks can furnish all the real resources which manufacture and trade can reasonably require without real cost to anyone For they argue thus. Money (meaning loans) is the life-blood of industry. If money (in this sense) is available in sufficient quantity and on easy terms, we shall have no difficulty in employing to the full the entire available supply of the factors of production. For the individual trader or manufacturer “bank credit” means “working capital”; a loan from his bank furnishes him with the means to pay wages, to buy materials and to carry stocks. If, therefore, sufficient bank credit was freely available, there need never be unemployment. Why then, he asks, if the banks can create credit, should they refuse any reasonable request for it? And why should they charge a fee for what costs them little or nothing? ... There can only be one answer: the bankers, having a monopoly of magic, exercise their powers sparingly in order to raise the price. ... Where magic is at work, the public do not get the full benefit unless it is nationalised. Our heretic admits, indeed, that we must take care to avoid “inflation”; but that only occurs when credit is created which does not correspond to any productive process. To create credit to meet a genuine demand for working capital can never be inflationary; for such a credit is “self-liquidating” and is automatically paid off when the process of production is finished. ... If the creation of credit is strictly confined within these limits, there can never be inflation. Further, there is no reason for making any charge for such credit beyond what is required to meet bad debts and the expense of administration. Not a week, perhaps not a day or an hour, goes by in which some well-wisher of mankind does not suddenly see the light – that here is the key to Utopia” (vol. 2, pp. 217 ff.).

they are adherents of the *credit creation theory*. But, revealingly, their contributions are belittled without it anywhere being stated what their key tenets are and that their analyses centre on the *credit creation theory*, which itself remains unnamed and is never spelled out. This is not a small feat, and leaves one pondering the possibility that the Eatwell et al. (1989) tome was purposely designed to ignore and distract from the rich literature supporting the *credit creation theory*. Nothing lost, according to the authors, who applaud the development that due to

“the increased emphasis given to monetary theory by academic economists in recent decades, the monetary cranks have largely disappeared from public debate ...” (p. 214).

And so has the *credit creation theory*. Since the tenets of this theory are never stated in Eatwell et al. (1989), the chapter on ‘Cranks’ ends up being a litany of ad hominem denigration, defamation and character assassination, liberally distributing labels such as ‘cranks’, ‘phrase-mongers’, ‘agitators’, ‘populists’, and even ‘conspiracy theorists’ that believe in ‘miracles’ and engage in wishful thinking, ultimately deceiving their readers by trying to “impress their peers with their apparent understanding of economics, even though they had no formal training in the discipline” (p. 214). All that we learn about their actual theories is that, somehow, these ill-fated authors are “opposed to private banks and the ‘Money Power’ without their opposition leading to more sophisticated political analysis” (p. 215). Any reading of the highly sophisticated Soddy (1934) quickly reveals such labels as unfounded defamation.

To the contrary, the empirical evidence presented in this paper has revealed that the many supporters of the *financial intermediation theory* and also the adherents of the *fractional reserve theory* are flat-earthers that believe in what is empirically proven to be wrong and which should have been recognisable as being impossible upon deeper consideration of the accounting requirements. Whether the authors in Eatwell et al. (1989) did in fact know better is an open question that deserves attention in future research. Certainly the unscientific treatment of the *credit creation theory* and its supporters by such authors as Keynes, who strongly endorsed the theory only a few years before authoring tirades against its supporters, or by the authors in Eatwell et al. (1989), raises this possibility.

5.4.2. Implications for government policy

There are other, far-reaching ramifications of the finding that banks individually create credit and money when they do what is called ‘lending money’. It is readily seen that this fact is important not only for monetary policy, but also for fiscal policy, and needs to be reflected in economic theories. Policies concerning the avoidance of banking crises, or dealing with the aftermath of crises require a different shape once the reality of the *credit creation theory* is recognised. They call for a whole new paradigm in monetary economics, macroeconomics, finance and banking (for details, see for instance Werner, 1997, 2005, 2012, 2013a,b) that is based on the reality of banks as creators of the money supply. It has potentially important implications for other disciplines, such as accounting, economic and business history, economic geography, politics, sociology and law.

5.4.3. Implications for bank regulation

The implications are far-reaching for bank regulation and the design of official policies. As mentioned in the Introduction, modern national and international banking regulation is predicated on the assumption that the *financial intermediation theory* is correct. Since in fact banks are able to create money out of nothing, imposing higher capital requirements on banks will not necessarily enable the prevention of boom–bust cycles and banking crises, since even with higher capital requirements, banks could still continue to expand the money supply, thereby fuelling asset prices, whereby some of this newly created money can be used to increase bank capital. Based on the recognition of this, some economists have argued for more direct intervention by

the central bank in the credit market, for instance via quantitative credit guidance (Werner, 2002, 2003a, 2005).

5.4.4. Monetary reform

The Bank of England's (2014b) recent intervention has triggered a public debate about whether the privilege of banks to create money should in fact be revoked (Wolf, 2014). The reality of banks as creators of the money supply does raise the question of the ideal type of monetary system. Much research is needed on this account. Among the many different monetary system designs tried over the past 5000 years, very few have met the requirement for a fair, effective, accountable, stable, sustainable and democratic creation and allocation of money. The view of the author, based on more than twenty-three years of research on this topic, is that it is the safest bet to ensure that the awesome power to create money is returned directly to those to whom it belongs: ordinary people, not technocrats. This can be ensured by the introduction of a network of small, not-for-profit local banks across the nation. Most countries do not currently possess such a system. However, it is at the heart of the successful German economic performance in the past 200 years. It is the very Raiffeisen, Volksbank or Sparkasse banks – the smaller the better – that were helpful in the implementation of this empirical study that should serve as the role model for future policies concerning our monetary system. In addition, one can complement such local public bank money with money issued by local authorities that is accepted to pay local taxes, namely a local public money that has not come about by creating debt, but that is created for services rendered to local authorities or the community. Both forms of local money creation together would create a decentralised and more accountable monetary system that should perform better (based on the empirical evidence from Germany) than the unholy alliance of central banks and big banks, which have done much to create unsustainable asset bubbles and banking crises (Werner, 2013a,b).

Appendix 1. Sequence of steps for the extension of a loan Raiffeisenbank Wildenberg e.G.

1. Negotiations concerning the details of the loan.
2. Receipt of KYC information and opening of a new customer file (new customer).
3. Opening of a current account (new customer).
4. Calculation of the loan and repayment schedule, model calculation, European required customer notification information, record of customer advisory.
5. Entry of loan application into the bank IT system.
6. Check of ability to service and repay the loan/conducting liquidity calculation in loan application.
7. Credit rating of customer, entry into customer file.
8. Search of customer data on central bank data base for singular economic dependencies and entry of results into bank IT.
9. Bank board recommendation on loan application with justification (2 directors).
10. Print out of loan contract, general loan conditions, with handover receipted by customer.
11. Print out of the protocol of the loan process.
12. Approval of credit by bank directors by signing the protocol and the loan contract.
13. Creation of loan account in the IT system.
14. Establishment of credit limit and availability of credit.
15. Appointment with customer.
16. Customer signs credit documents.
17. Payment of loan at the value date, in exchange for evidence of use of the loan in line with the declared use in the loan application.

Appendix 2. Letter of confirmation of facts by Raiffeisenbank Wildenberg e.G. (Translation; original in online Appendix 3).

10 June 2014

Dear Prof. Dr. Werner,

Confirmation of Facts

In connection with the extension of credit to you in August 2014 I am pleased to confirm that neither I as director of Raiffeisenbank Wildenberg eG, nor our staff checked either before or during the granting of the loan to you, whether we keep sufficient funds with our central bank, DZ Bank AG, or the Bundesbank. We also did not engage in any such related transaction, nor did we undertake any transfers or account bookings in order to finance the credit balance in your account. Therefore we did not engage in any checks or transactions in order to provide liquidity.

Yours sincerely,

M. Rebl,

Director, Raiffeisenbank Wildenberg e.G.

Appendix 3. Supplementary data

Supplementary data to this article can be found online at <http://dx.doi.org/10.1016/j.irfa.2014.07.015>.

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