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Klein

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(54) **SYSTEM AND METHOD FOR BANK ACCOUNT MANAGEMENT AND CURRENCY INVESTMENT**

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(52) **U.S. Cl.** **705/35**; 705/36

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See application file for complete search history.

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(57) **ABSTRACT**

The invention is a device for bank account management, comprising an input device adapted to receive information related to a diversification of an initial fund of a user, and a processor adapted to calculate a distribution of the initial fund comprising one or more selected currencies based upon the diversification information, convert the initial fund from an initial currency into a converted fund comprising one or more selected currencies based upon the calculated distribution, and record the information about the converted fund in a data file for the bank account.

31 Claims, 10 Drawing Sheets

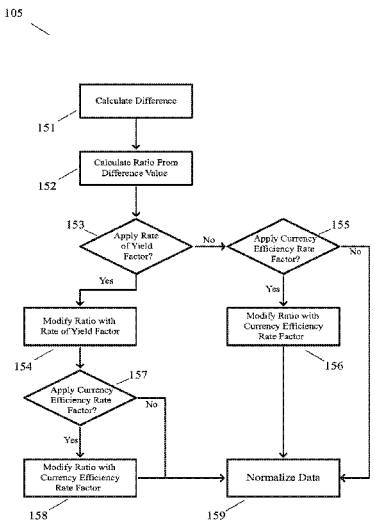


FIG. 1(a)

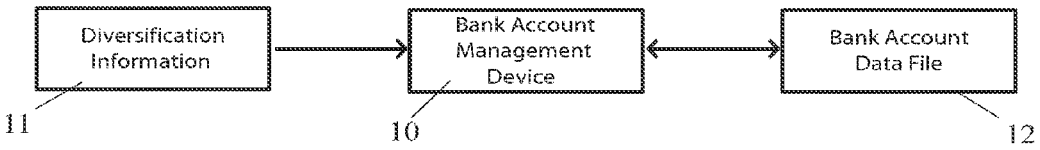

Diversification Information
Bank Account Management Device
Bank Account Data File
11
10
12

FIG. 1(b)

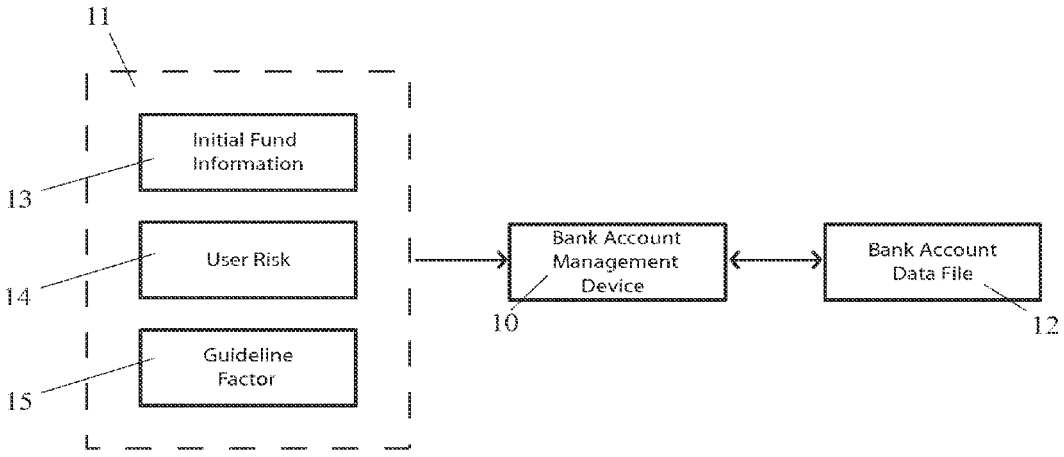

11
Initial Fund Information
13
User Risk
14
Guideline Factor
15
Bank Account Management Device
10
Bank Account Data File
12

FIG. 2(a)

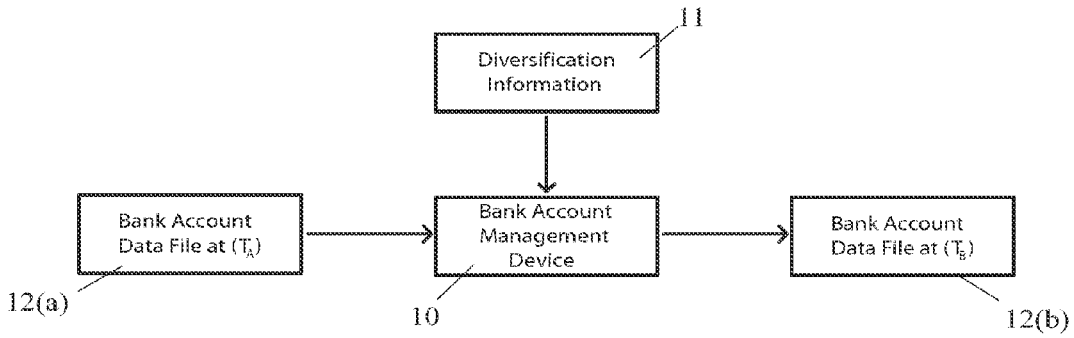

11
Diversification Information
Bank Account Data File at (T_A)
Bank Account Management Device
Bank Account Data File at (T_B)
12(a)
10
12(b)

FIG. 2(b)

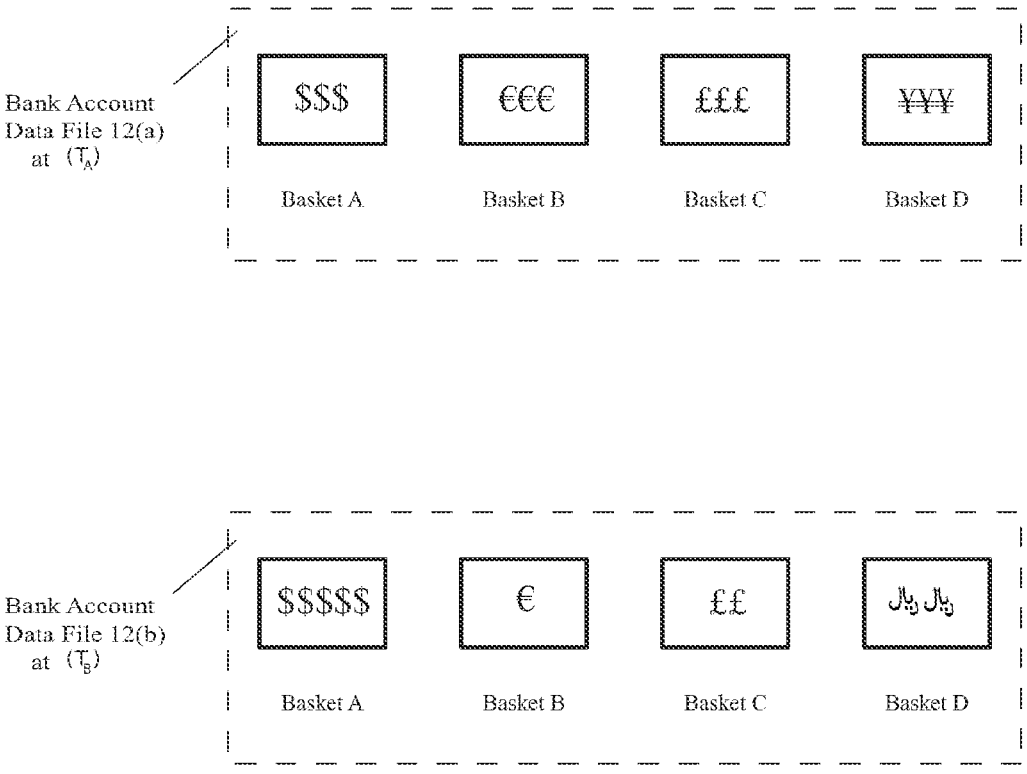

Bank Account
Data File 12(a)
at (T_A)
$$$
€€€
£££
¥¥¥
Basket A
Basket B
Basket C
Basket D
Bank Account
Data File 12(b)
at (T_B)
$$$$$
€
ℓℓ
ريال ريال
Basket A
Basket B
Basket C
Basket D

FIG. 3

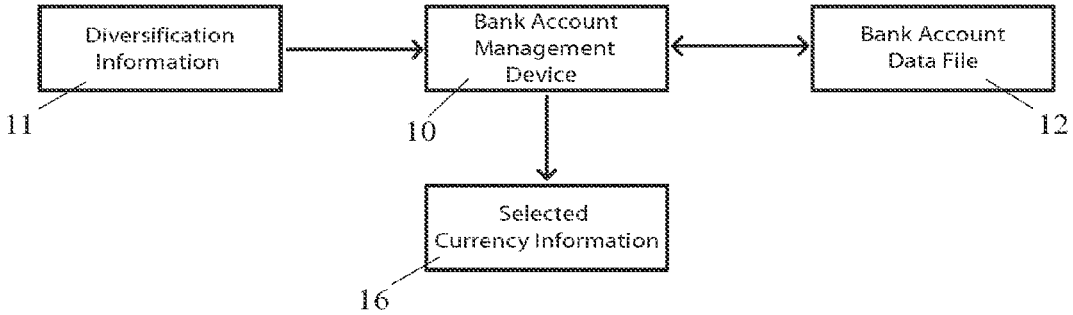

Diversification Information
11
Bank Account Management Device
10
Bank Account Data File
12
Selected Currency Information
16

FIG. 4

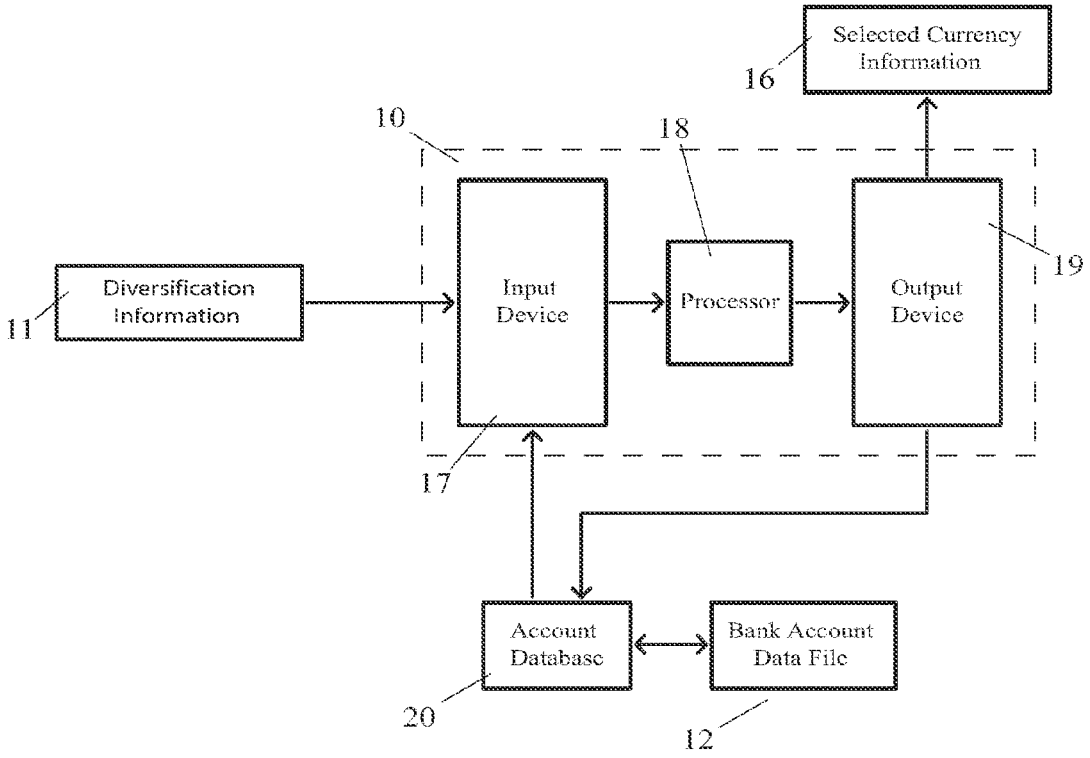

Selected Currency Information
16
10
18
Diversification Information
11
Input Device
Processor
Output Device
19
17
Account Database
Bank Account Data File
20
12

FIG. 5(a)

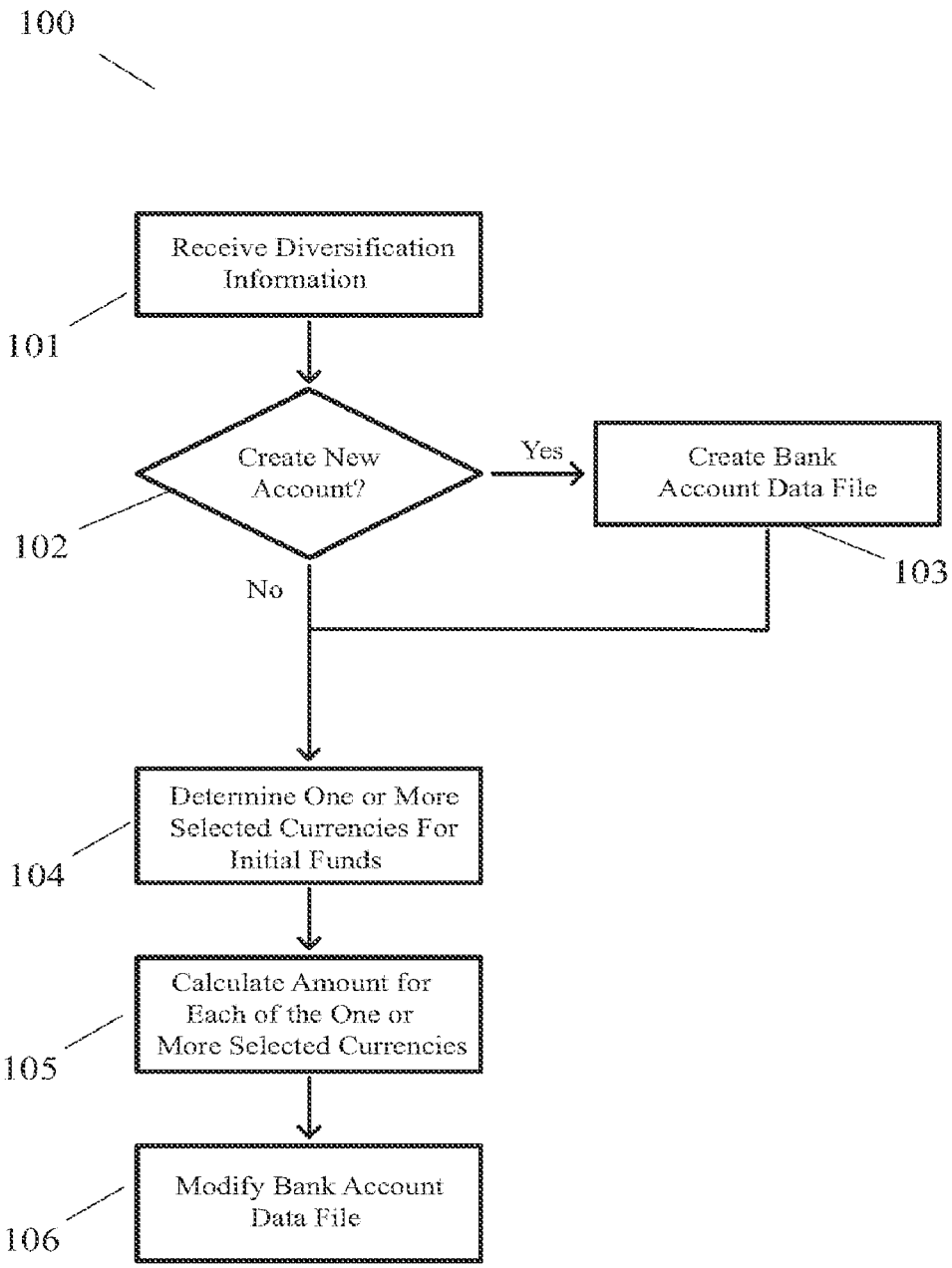

100
Receive Diversification Information
101
Create New Account?
Yes
Create Bank Account Data File
102
103
No
Determine One or More Selected Currencies For Initial Funds
104
Calculate Amount for Each of the One or More Selected Currencies
105
Modify Bank Account Data File
106

FIG. 5(b)

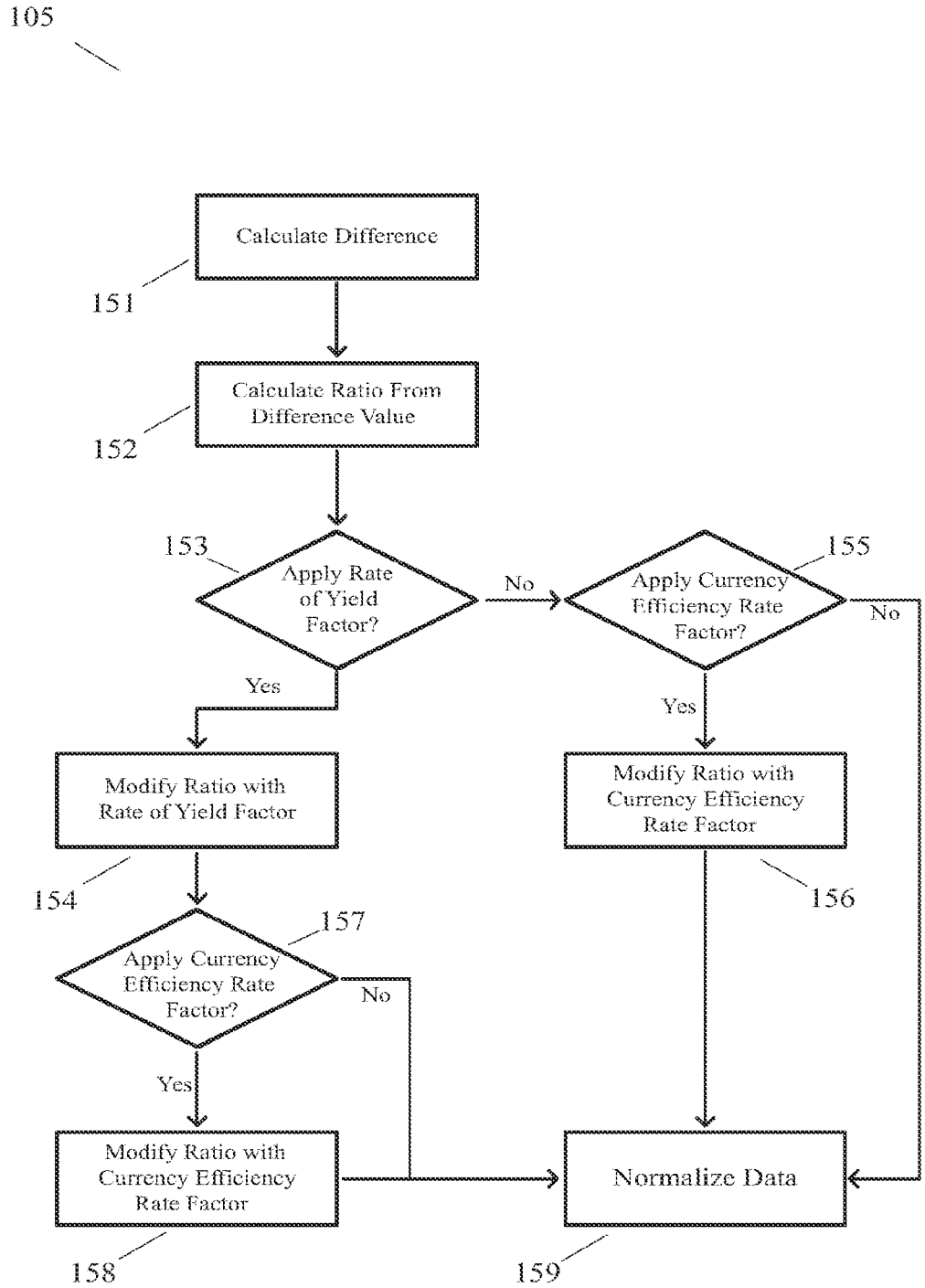

105
Calculate Difference
151
Calculate Ratio From Difference Value
152
153
Apply Rate of Yield Factor?
No
155
Apply Currency Efficiency Rate Factor?
No
Yes
Yes
Modify Ratio with Rate of Yield Factor
Modify Ratio with Currency Efficiency Rate Factor
154
156
157
Apply Currency Efficiency Rate Factor?
No
Yes
Modify Ratio with Currency Efficiency Rate Factor
Normalize Data
158
159

FIG. 6

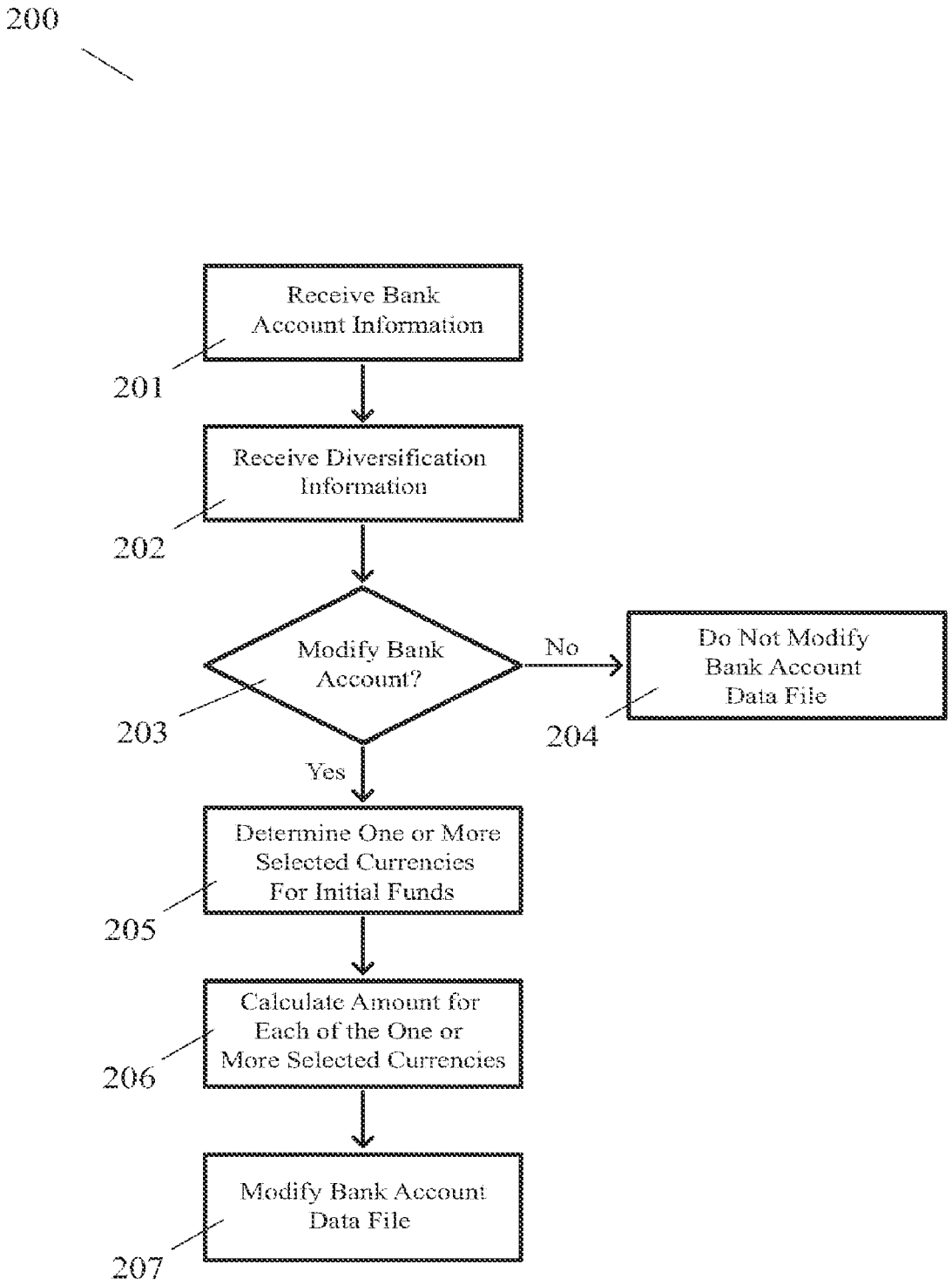
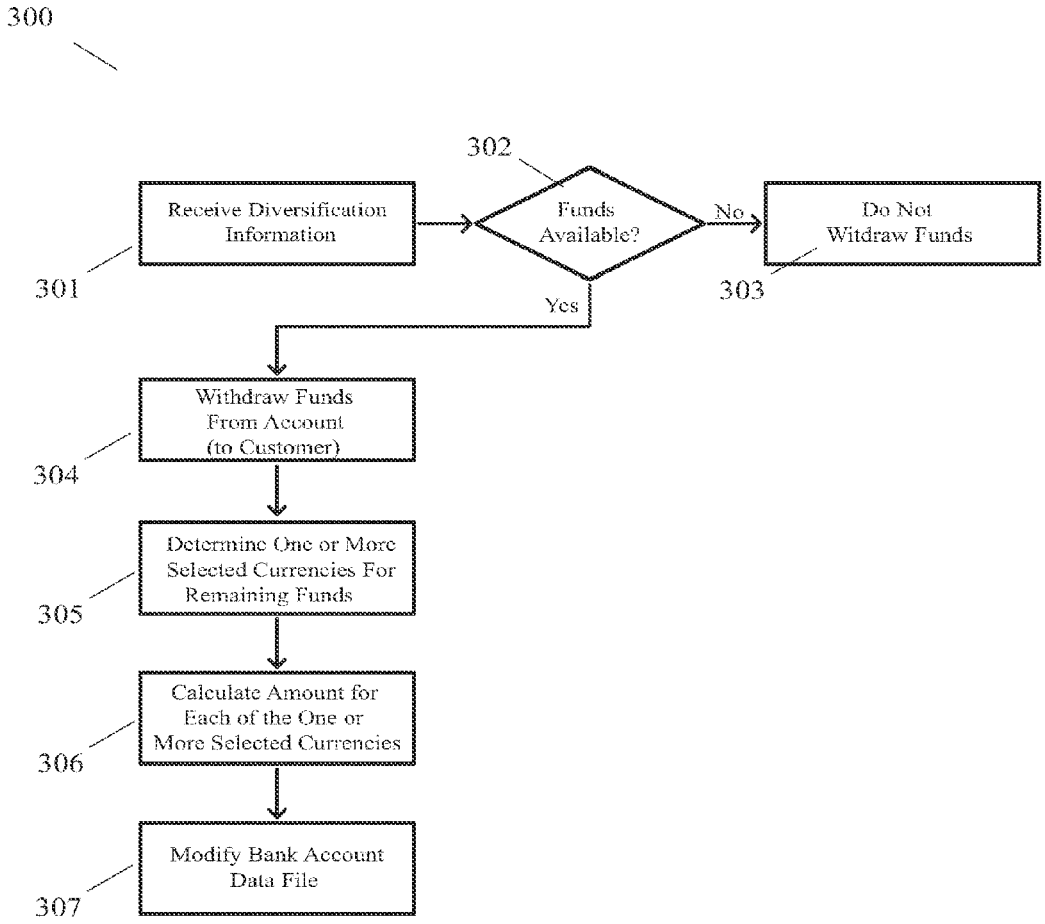

200
Receive Bank Account Information
201
Receive Diversification Information
202
Modify Bank Account?
203
No
Do Not Modify Bank Account Data File
204
Yes
Determine One or More Selected Currencies For Initial Funds
205
Calculate Amount for Each of the One or More Selected Currencies
206
Modify Bank Account Data File
207

FIG. 7


300
302
Receive Diversification Information
Funds Available?
No
Do Not Witdraw Funds
301
303
Yes
Withdraw Funds From Account (to Customer)
304
Determine One or More Selected Currencies For Remaining Funds
305
Calculate Amount for Each of the One or More Selected Currencies
306
Modify Bank Account Data File
307

SYSTEM AND METHOD FOR BANK ACCOUNT MANAGEMENT AND CURRENCY INVESTMENT

TECHNICAL FIELD OF THE INVENTION

The present invention relates in general to a system and method for bank account management and currency investment, and more specifically, to a system and method to increase purchasing power through long-term investment of a currency into one or more additional currencies.

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BACKGROUND OF THE INVENTION

The value of a currency fluctuates in relation to other currencies as a function of economic reports, world events, and other significant factors. As such, the value of the U.S. dollar in relation to other worldwide currencies may fluctuate due to a number of factors. Currently, billions of dollars are traded in between currencies every day as a tool for wealth investment. As a result, diversification of wealth into a plurality of currencies may lead to increased long-term maintenance or increase in wealth compared to storing wealth within a single currency.

Access to currency investment as a tool for the average consumer, however is somewhat limited. Due to high commission fees on both ends of a currency transaction, the average consumer is frequently left in a position wherein currency trading is impractical. Additionally, due to the number of factors that can affect the currency values, investment in currency by the average consumer can pose high risk as it is speculative at best. As with other types of investments such as commodities or stocks, vast amounts of research is necessary in order to make a prudent investment within the currency market. Thus, there is a need in the art for a device that makes currency investment accessible to the average consumer.

Thus, current currency investment methods are impractical, inaccessible and pose a high risk to the average consumer. As such, there is a need in the art for a system and method for bank account management and currency investment. Specifically, there is a need for a system and method to maintain or increase wealth through long-term investment of a currency into one or more additional currencies. It is to these ends that the present invention has been developed.

SUMMARY OF THE INVENTION

To minimize the limitations in the prior art, and to minimize other limitations that will be apparent upon reading and understanding the present specification, the present invention describes a device for bank account management, comprising an input device adapted to receive information related to a diversification of an initial fund of a user, and a processor adapted to calculate a distribution of the initial fund comprising one or more selected currencies based upon the diversification information, convert the initial fund from an initial currency into a converted fund comprising one or more selected currencies based upon the calculated distribution, and record the information about the converted fund in a data file for the bank account.

The present invention also describes a method for managing a bank account, comprising receiving information related to a diversification of an initial fund of a user, calculating a distribution of the initial fund comprising one or more selected currencies based upon the diversification information, converting the initial fund from an initial currency into a converted fund comprising the selected currencies based upon the calculated distribution, and recording the information about the converted fund in a data file for the bank account.

The present invention further describes a computer-readable medium including codes extractable by a computer, adapted to receive information related to a diversification of an initial fund of a user, calculate a distribution of the initial fund comprising one or more selected currencies based upon the diversification information, convert the initial fund from an initial currency into a converted fund comprising the selected currencies based upon the calculated distribution, and record the information about the converted fund in a data file for the bank account.

It is an objective of the present invention to provide consumers with an opportunity to invest in multiple currencies.

It is another objective of the present invention to maintain wealth through investment in a plurality of monetary currencies.

It is yet another objective of the present invention to provide a method for long-term investment of money into multiple currencies.

Finally, it is objective of the present invention to provide an automated system and method for the maintenance of wealth through the investment of money into multiple currencies.

These and other advantages and features of the present invention are described herein with specificity so as to make the present invention understandable to one of ordinary skill in the art.

BRIEF DESCRIPTION OF THE DRAWINGS

Elements in the figures have not necessarily been drawn to scale in order to enhance their clarity and improve understanding of these various elements and embodiments of the invention. Furthermore, elements that are known to be common and well understood to those in the industry are not depicted in order to provide a clear view of the various embodiments of the invention.

FIG. **1**(*a*) illustrates a box diagram of an exemplary embodiment of a bank account management device applying modifications to a bank account data file.

FIG. **1**(*b*) illustrates a box diagram of a bank account management device receiving an input of exemplary diversification information.

FIG. **2**(*a*) illustrates a box diagram of an exemplary embodiment of a bank account management device and a bank account data file at times T_A and T_B.

FIG. **2**(*b*) illustrates a box diagram of an exemplary embodiment of a bank account data file at times T_A and T_B.

FIG. **3** illustrates a box diagram of an exemplary embodiment of a bank account management device and the output of selected currency information.

FIG. **4** illustrates a box diagram of an exemplary embodiment of internal components of a bank account management device and its output.

FIG. **5**(*a*) illustrates a flow chart of a method utilized by a bank account management device for the creation or modification of a bank account data file.

FIG. **5**(*b*) illustrates a flow chart of a method utilized by a bank account management device for the calculation of a distribution of an initial fund.

FIG. **6** illustrates another flow chart of a method utilized by a bank account management device for the modification of a bank account data file.

FIG. **7** illustrates a flow chart of a method utilized by a bank account management device for the modification of a bank account data file in response to a withdrawal of funds.

DETAILED DESCRIPTION OF THE DRAWINGS

In the following discussion that addresses a number of embodiments and applications of the present invention, reference is made to the accompanying drawings that form a part hereof, where depictions are made, by way of illustration, of specific embodiments in which the invention may be practiced. It is to be understood that other embodiments may be utilized and changes may be made without departing from the scope of the present invention.

FIG. **1**(*a*) illustrates a box diagram of an exemplary embodiment of bank account management device **10** applying modifications to bank account data file **12**. FIG. **1**(*a*) shows bank account management device **10**, receiving diversification information **11** from an external source and modifying bank account data file **12**. Bank account management device **10** is designed to modify bank account data file **12** according to an optimization algorithm processed by bank account management device **10** utilizing diversification information **11**. In alternative embodiments, bank account management device **10** may also utilize fund information from bank account data file **12** for the calculation of an optimized fund distribution within bank account data file **12**.

In an exemplary embodiment of the present invention, bank account management device **10** may utilize diversification information **11** to calculate the best optimization scheme for the increase or maintenance of wealth for an initial fund of a user. In such an embodiment, an initial fund may comprise a fund deposit or funds contained in bank account data file **12**. Alternatively, should diversification information **11** include a fund withdrawal request from bank account data file **12**, bank account management device **10** may modify bank account data file **12** to comply with the withdrawal request, and then bank account management device **10** may modify bank account data file **12** to optimize the remaining funds stored in bank account data file **12** based upon diversification information **11**.

Diversification information **11** is an information input utilized by bank account management device **10** to modify bank account data file **12** such that the wealth of a user may be, in an ideal scenario, most increased or maintained. In an exemplary embodiment of the present invention, diversification information **11** may comprise an initial fund input, such as a request to open a bank account data file, a fund deposit, fund transfer, a request to redistribute funds, or a request to withdraw money from the bank account data file. In other exemplary embodiments of the present invention, diversification information **11** may comprise a user risk factor, which may be defined as instructions for diversification or investment of the initial fund. In further exemplary embodiments, diversification information **11** may comprise guideline factors or variables that may be utilized by bank account management device **10** for the calculation of a distribution of the initial fund.

Bank account data file **12** may comprise an electronic data representation of a bank account fund, or other data file, wherein funds may be accessed, stored, transferred, deposited and withdrawn. Bank account data file **12** may be created, modified, or closed by bank account management device **10**, according to diversification information **11**. Further, bank account data file **12** may be read or accessed by bank account management device **10** in order to comply with instructions within diversification information **12**. In an exemplary embodiment, bank account data file **12** may comprise a data module of a user's real and actual bank account, stored in a non-volatile data storage medium such as a hard drive or flash memory. In such embodiments, bank account management device **10** may modify bank account data file **12** according to diversification information **11**.

To best optimize bank account data file **12** for wealth increase or maintenance based on the investment of an initial fund into a selected currency, bank account management device **10** must read bank account data file **12** to record the initial fund state and have a starting point for the optimization process. For example, should diversification information **11** include a currency exchange transaction request, bank account management device **10** may read bank account data file **12** to check for availability of specified funds in order to comply with diversification information **11**.

FIG. **1**(*b*) illustrates a box diagram of bank account management device **10** receiving an input of diversification information **11**. FIG. **1**(*b*) shows bank account management device **10**, receiving diversification information **11** and modifying bank account data file **12**, wherein diversification information **11** comprises initial fund information **13**, user risk **14**, and guideline factor **15**. Bank account management device **10** is designed to modify bank account data file **12** according to an optimization algorithm processed by bank account management device **10** utilizing diversification information **11**.

Diversification information **11** may comprise initial fund information **13**, which in an exemplary embodiment, is as user input describing a requested fund transaction. For example, initial fund information **13** may comprise a user input including a fund deposit, fund transfer, fund reallocation, or fund withdrawal. In such embodiments, bank account data file **12** is modified by bank account management device **10** to comply with initial fund information **13**. Should initial fund information **13** comprise a fund deposit, then bank account management device **10** may deposit the initial fund into bank account data file **12** and then redistribute the funds in bank account data file **12** for optimization, utilizing diversification information **11**. Alternatively, should initial fund information **13** comprise a request to withdraw funds, bank account management device **10** may withdraw the appropriate funds from bank account data file **12**, if available, and then optimize the fund distribution in bank account data file **12** utilizing diversification information **11**.

Diversification information **11** may also comprise user risk **14**, which is a user input describing instructions for diversification or investment of a fund. In exemplary embodiments of the present invention, user risk **14** may comprise an instruction including requested currency investments. Such currency investment instructions may state a number of currencies to be utilized for fund diversification, or may specifically cite requested currencies for investment. For example, in exemplary embodiments, user risk **14** may comprise an instruction to invest in the "G8" currencies, the top ten Asian currencies, or some other specific set of currencies. Alternatively, user

risk **14** may comprise an instruction to invest in a specific number of currencies, wherein bank account management device **10** may then best optimize a distribution for currency diversification.

In yet other embodiments of the present invention, diversification information **11** may comprise guideline factor **15**. Guideline factor **15** is a set of user input information that may be utilized by bank account management device **10** for the calculation of a distribution for a fund in bank account data file **12**. In an exemplary embodiment, guideline factor **15** may comprise currency exchange rate data between the initial currency and selected currencies. In other embodiments, guideline factor **15** may comprise gross domestic product of nations in which their respective currency is utilized, historical economic information, government loan rates, currency exchange fees, currency transaction costs, quarterly financial reports, financial news or current events, or other relevant news or financial data information. In each of these embodiments, bank account management device **10** may utilize guideline factor **15** information to calculate a distribution to determine how much of a fund is to be invested into a selected currency for bank account data file **12**.

In further embodiments of the present invention, guideline factor **15** may comprise a rate of yield factor or a currency efficiency rate factor. Rate of yield and currency efficiency rate will be discussed in detail below.

FIG. **2**(*a*) illustrates a box diagram of an exemplary embodiment of bank account management device **10** and bank account data file **12** at times T_A and T_B. FIG. **2**(*a*) shows bank account management device **10** receiving diversification information **11** and bank account information from bank account data file **12** at a first time T_A, labeled as **12**(*a*). FIG. **2**(*a*) further shows bank account management device **10** modifying bank account data file **12** at a second time T_B, labeled as **12**(*b*).

FIG. **2**(*b*) illustrates a box diagram of exemplary embodiments of a bank account data files **12**(*a*) and **12**(*b*) at times T_A and T_B, respectively. FIG. **2**(*b*) shows bank account data file **12**(*a*), comprising a first set of currencies at time T_A, and bank account data file **12**(*b*), comprising a second set of currencies at time T_B. Bank account management device **10** reads bank account data file **12**(*a*) at a first time T_A and redistributes the funds, modifying bank account data file **12**(*b*) at T_B.

Bank account data file **12**(*a*) is bank account data file **12** at a first time T_A. In an exemplary embodiment of the present invention, bank account data file **12**(*a*) may comprise an initial fund including a first set of currencies, as shown in baskets A-D. Bank account data file **12**(*b*) is bank account data file **12** at a second time T_B, which may comprise a converted fund including a second set of currencies.

In the present example illustrated in FIG. **2**(*b*), bank account data file **12**(*a*) includes an initial distribution comprising U.S. dollars, euros, British pounds, and Japanese yen. In alternative embodiments, bank account data file **12**(*a*) may comprise a different set of currencies, including additional or fewer currencies, and different amounts of wealth stored in each currency. As illustrated in FIG. **2**(*b*), bank account data file **12**(*b*) at time T_B includes a different amount of U.S. dollars within basket A than within bank account data file **12**(*a*) at time T_A. Bank account data file **12**(*b*) also includes fewer euros and British pounds, but comprises Iranian Rials and lacks Japanese Yen. In alternative embodiments, bank account data file **12**(*b*) may comprise a different set of currencies, including additional or fewer currencies, and different amounts of each selected currency.

Bank account management device **10** modifies bank account data file **12**(*a*) into bank account data file **12**(*b*) according to an optimization algorithm utilizing diversification information **11**. Additionally, bank account management device **10** may read bank account data file **12**(*a*) and utilize diversification information **11** to calculate a distribution and modify bank account data file **12**(*a*) into bank account data file **12**(*b*). As such, bank account management device **10** modifies bank account data file **12**(*a*), and its set of selected currencies, into bank account data file **12**(*b*), and its set of converted currencies, according to an optimization algorithm based upon diversification information **11**.

FIG. **3** illustrates a box diagram of an exemplary embodiment of bank account management device **10** and the output of selected currency information **16**. FIG. **3** shows bank account management device **10** receiving diversification information **11**, modifying bank account data file **12** and outputting selected currency information **16**. Bank account management device **10** is designed to modify bank account data file **12** according to diversification information **11** and bank account information from bank account data file **12** and output selected currency information **16**.

Selected currency information **16** is a fund information designed to reflect the status of funds within bank account data file **12** and to illustrate modifications made to bank account data file **12**. Selected currency information **16** is fund information designed for output to a user in order to reflect currencies selected by bank account management device **10** and stored within bank account data file **12**. In an exemplary embodiment of the present invention wherein initial fund information **13** comprises a fund withdrawal, selected currency information **16** may comprise fund data including a summary of funds withdrawn from bank account data file **12** and funds remaining within bank account data file **12** before and after fund optimization and redistribution by bank account management device **10**.

In an alternative embodiment of the present invention, selected currency information **16** may be utilized by an external device to output fund information to a user of bank account management device **10**. For example, should initial fund information **13** comprise a request for fund withdrawal, then selected currency information **16** may comprise an instruction or confirmation to an external device to output the requested funds to the user. As such, when initial fund information **13** comprise a request for fund withdrawal through an ATM, selected currency information **16** may comprise an instruction to the ATM to physically output the requested funds. Conversely, wherein initial fund information **13** comprises an electronic fund transfer to, for example, a third party bank account, selected currency information **16** may comprise an instruction to electronically transfer the requested funds to the third party bank account.

FIG. **4** illustrates a box diagram of an exemplary embodiment of the internal components of bank account management device **10**. FIG. **4** shows bank account management device **10**, comprising input device **17**, processor **18** and output device **19**. Input device **17** receives diversification information **11** and bank account information related to bank account data file **12**, which may be located in account database **20**. Processor **18** modifies bank account data file **12** through output device **19**, which also outputs selected currency information **16**.

Input device **17** is a component of bank account management device **10** designed to receive user input information for analysis and utilization by processor **18**. In exemplary embodiments of the present invention, input device **17** may receive diversification information **11**, including initial fund information **13**, user risk **14**, guideline factor **15**, or some other information input relevant to the optimization of fund

diversification in bank account data file **12**. When input device **17** receives an information input for bank account management device **10**, including diversification information **11** or bank account information related to bank account data file **12** from account database **20**, input device **17** may relay the input to processor **18**.

Processor **18** is a component of bank account management device **10** designed to analyze and utilize information received by bank account management device **10** through input device **17** for the diversification of funds in bank account data file **12**. In an exemplary embodiment of the present invention, processor **18** utilizes diversification information **11** to create an optimal distribution of funds for wealth increase or maintenance in bank account data file **12**. Once an optimized distribution of funds has been calculated, processor **18** may instruct output device **19** to apply necessary modifications to bank account data file **12**.

Output device **19** is a component of bank account management device **10** designed to output instructions issued by processor **18** for the modification of bank account data file **12**. In an exemplary embodiment of the present invention, output device **19** may access account database **20** and modify bank account data file **12** to correspond with the optimized fund distribution as calculated by processor **18**. In exemplary embodiments, account database **20** may comprise of a plurality of bank account data files, each corresponding to a unique bank account. In an alternative embodiment, output device **19** may access bank account data file **12** directly to apply modifications to correspond with the optimized fund distribution as calculated by processor **18**.

In alternative embodiments of the present invention, processor **18** may also instruct output device **19** to output selected currency information **16**. In such embodiments, output device **19** may output selected currency information **16**, which may reflect modifications applied to bank account data file **12**, the current fund distribution contained in bank account data file **12**, or other information related to bank account data file **12**.

FIG. **5**(*a*) illustrates a flow chart of method **100** utilized by bank account management device **10** for the creation or modification of bank account data file **12**. Method **100** is explained in the order shown below; however, the following steps may be taken in any other conceivable sequence without deviating from the scope of the present invention.

In step **101**, bank account management device **10** receives diversification information **11** via input device **17**. Input device **17** may relay diversification information **11** to processor **18** for analysis and usage in the optimization of bank account data file **12**. In an exemplary embodiment wherein diversification information **11** comprises initial fund information **13**, processor **18** analyzes initial fund information **13** and bank account data file **12**, should it already exist, to determine what action is requested by a user and whether the action is possible.

In step **102**, processor **18** determines whether a new bank account data file **12** is to be created. In an exemplary embodiment wherein diversification information **11** comprises initial fund information **13**, which further comprises an instruction to open a new bank account data file **12** and a fund deposit, then bank account management device **10** proceeds to step **103**. If, however, processor **18** determines, based upon diversification information **11**, that a new bank account data file **12** is not to be created, then bank account management device **10** proceeds step **104**. In step **103**, if bank account data file **12** does not exist, processor **18** instructs output device **19** to create bank account data file **12** in database **20** and then proceed to step **104**.

In step **104**, bank account management device **10** determines one or more selected currencies for the optimization of initial funds stored in bank account data file **12**. Processor **18** may utilize diversification information **11** and bank account information related to bank account data file **12** prior to optimization for its calculation of an optimized distribution of funds. In an exemplary embodiment of the present invention wherein diversification information **11** comprises user risk **14**, processor **18** may utilize user risk **14** as previously described to determine select currencies for the conversion of the initial fund. Alternatively, guideline factor **15** may be utilized for the determination of one or more selected currencies. Once processor **18** determines the selected currencies in which funds will be invested, bank account management device **10** proceeds to step **105**.

In step **105**, bank account management device **10** calculates the amount of wealth to be invested into each currency selected previously in step **104**. Processor **18** may utilize diversification information **11** and bank account information related to bank account data file **12** prior to optimization for its calculation of an optimized distribution of funds. The calculation performed by processor **18** will be described in further detail for FIG. **5**(*b*). In alternative embodiments of the present invention, steps **104** and **105** may be performed concurrently. Once the amount to be invested in each selected currency has been determined, bank account management device **10** proceeds to step **106**.

Finally, in step **106**, bank account management device **10** modifies bank account data file **12** according to the optimized distribution determined in steps **104** and **105**. In an exemplary embodiment of the present invention, output device **19** may modify bank account data file **12** according to instructions relayed by processor **18**. In other embodiments of the present invention, in step **106**, bank account management device **10** may also output selected currency information **16**. In such embodiments, output device **19** may output selected currency information **16** based upon the optimized fund distribution determined in steps **104** and **105**, modifications made to bank account data file **12**, and compliance with diversification information **11**.

FIG. **5**(*b*) illustrates a flow chart of step **105** from method **100** utilized by bank account management device **10** for the calculation of a distribution of an initial fund to be stored in bank account data file **12** utilizing currency exchange rate information. Step **105** is accomplished through the performance of steps **151**-**159** as explained in the order shown below; however, the following steps may be taken in any other conceivable sequence without deviating from the scope of the present invention.

To calculate a distribution of an initial fund into a set of selected currencies as previously defined as step **105** in method **100**, bank account management device **10** begins with step **151**. In the embodiment of step **105** illustrated in FIG. **5**(*b*) and herein described, bank account management device **10** utilizes diversification information **11** comprising guideline factor **15**, which comprises currency exchange rate data. However, in other embodiments of the present invention, bank account management device **10** may utilize other types of diversification information **11**, such as gross domestic product of nations in which their respective currency is considered, historical economic information, quarterly financial reports, financial news or current events, or other relevant news or financial data information.

In step **151**, bank account management device **10** utilizes guideline factor **15** to calculate a percentage difference between the exchange rate between the initial fund currency and a selected currency over the period between time T_1 and

time T_2. For example, suppose the exchange rate between the initial currency of U.S. dollars and a selected currency comprising British pounds is $2.00/£1.00 at time T_1, and the exchange rose to $2.05/£1.00 at time T_2. Thus, the difference would comprise a $0.05/£1.00 gain, or a percentage difference of 0.025 (2.5%). As such, this percentage difference is calculated for the difference between the exchange rate for each of the selected currencies and the initial currency. Once the percentage difference is calculated for the exchange rate between the initial currency and each of the selected currencies as defined in diversification information **11**, bank account management device **10** proceeds to step **152**.

In step **152**, bank account management device **10** identifies the selected currency which experienced the highest percentage difference in the exchange rate with the initial currency between times T_1 and T_2. For example, in an exemplary embodiment wherein the initial currency is U.S. dollars and the selected currencies are British Pounds, European Union Euros, and Japanese Yen, suppose the percentage differences in the exchange rates between times T_1 and T_2 were 0.010, 0.026, and 0.014, respectively. As such, the highest percentage difference in the exchange rates was with the Euro, at 0.026.

Once the highest percentage difference between exchange rates at times T_1 and T_2 is discovered, then processor **18** calculates a ratio between the percentage difference for a selected currency and the percentage difference for the highest selected currency of the set of selected currencies. As such, in the previous example wherein the selected currencies are British Pounds, European Union Euros, and Japanese Yen, and the percentage differences in the exchange rates between times T_1 and T_2 were 0.010, 0.026, and 0.014, respectively, then the calculated ratios would be 0.385, 1.0, and 0.538, respectively, as each percentage difference is divided by the highest percentage difference. Once the ratio between the percentage difference and the highest percentage difference is calculated for the set of selected currencies, bank account management device **10** proceeds to step **153**.

In step **153**, after the ratio between the percentage difference and the highest percentage difference is calculated, processor **18** determines if a rate of yield factor is to be applied to the data prior to normalization. A rate of yield factor may be understood as a weighted value to be applied to the ratio data in order to weigh it towards an equal shared value. Processor **18** may determine if a rate of yield factor is to be applied based upon diversification information **11**. In an exemplary embodiment of the present invention wherein a rate of yield factor is to be applied, bank account management device **10** may receive guideline factor **15** as a user input, comprising a rate of yield factor. Should processor **18** determine that a rate of yield factor is to be applied, then the ratio values may be modified in step **154**. If, however, processor **18** determines that a rate of yield factor is not to be applied, then bank account management device **10** may proceed to step **155**.

Should processor **18** determine that a rate of yield factor is to be applied to the ratio values calculated in step **152**, then in step **154**, processor **18** modifies the ratio values by applying the rate of yield factor. For example, without the application of a rate of yield factor, the ratio values previously discussed for the British Pound, European Union Euro, and Japanese Yen, were 0.385, 1.0, and 0.538, respectively. However, if a rate of yield factor of 1.0 is to be applied to the ratio values, then the modified ratio values for the British Pound, European Union Euro, and Japanese Yen, would be 1.385, 2.0, and 1.538, respectively, as a value of 1.0 is added to each ratio value. Once the ratio values have been modified, bank account management device **10** may proceed to step **157**.

In step **155**, processor **18** determines if bank account management device **10** is to apply a currency efficiency rate factor to the ratio values calculated in step **152**. A currency efficiency rate factor may be understood as a ranked modifier that may be applied to the ratio data calculated in step **152** in order to amplify the fund distribution share of the higher performing selected currencies as opposed to the fund distribution share of the lower performing selected currencies. Processor **18** may determine if a currency efficiency rate factor is to be applied based upon diversification information **11**. In an exemplary embodiment of the present invention wherein a currency efficiency rate factor is to be applied, bank account management device **10** may receive guideline factor **15** as a user input, comprising a currency efficiency rate factor. Should processor **18** determine that a currency efficiency rate factor is to be applied, then the ratio values may be modified in step **156**. If, however, processor **18** determines that a currency efficiency rate factor is not to be applied, then bank account management device **10** may proceed to step **159**.

Should processor **18** determine that a currency efficiency rate factor is to be applied to the ratio values calculated in step **152**, then in step **156**, processor **18** modifies the ratio values by applying the currency efficiency rate factor. For example, without the application of either a rate of yield factor or the currency efficiency rate factor, the ratio values previously discussed for the British Pound, European Union Euro, and Japanese Yen, were 0.385, 1.0, and 0.538, respectively. However, if a currency efficiency rate factor of 0.5 is to be applied to the ratio values, then the modified ratio values for the British Pound, European Union Euro, and Japanese Yen, would be 0.885, 2.5, and 1.538, respectively, as 0.5 is added to the British Pound ratio value, 1.0 is added to the Japanese Yen ratio value, and 1.5 is added to the European Union Euro ratio value. Once the ratio values have been modified, bank account management device **10** may proceed to step **159**.

In alternative embodiments of the present invention, bank account management device **10** may perform step **157**, wherein processor **18** determines if bank account management device **10** is to further apply a currency efficiency rate factor to the ratio values as previously modified in step **154**. As discussed in step **155**, processor **18** may determine if a currency efficiency rate factor is to be applied based upon diversification information **11**.

Should processor **18** determine that a currency efficiency rate factor is to be further applied to the ratio values, then bank account management device **10** may proceed to step **158**, wherein processor **18** modifies the ratio values by applying the currency efficiency rate factor. Once the ratio values have been modified, bank account management device **10** may proceed to step **159**. If, however, processor **18** determines that a currency efficiency rate factor is not to be applied, then bank account management device **10** may proceed to step **159**.

In step **159**, the ratio values, whether or not they have been modified in steps **153-158**, are normalized. Processor **18** may normalize the ratio values by dividing each ratio value by the sum of the total ratio value set. As in the previous example, if the ratio values for the British Pound, European Union Euro, and Japanese Yen, were 0.385, 1.0, and 0.538, respectively, then the sum of the ratio value set would be 1.923. As such, the normalized share for each selected currency would be the selected currency ratio value divided by the sum of the ratio value set, or, for the British Pound, European Union Euro, and Japanese Yen, 0.200, 0.520, and 0.280, respectively.

In the exemplary embodiment wherein a rate of yield factor was applied in step **154**, processor **18** may normalize the modified ratio values. Wherein the modified ratio values for the British Pound, European Union Euro, and Japanese Yen,

were 1.385, 2.0, and 1.538, respectively, the sum of the modified ratio values would be 4.923. As such, the normalized share for the British Pound, European Union Euro, and Japanese Yen would be 0.281, 0.406, and 0.312, respectively. In the exemplary embodiment wherein a currency efficiency rate factor was applied in step **158**, and the modified ratio values for the British Pound, European Union Euro, and Japanese Yen, would be 0.885, 2.5, and 1.538, respectfully, the sum of the modified ratio values would be 4.923. As such, the normalized share for the British Pound, European Union Euro, and Japanese Yen would be 0.180, 0.508, and 0.312, respectfully.

FIG. **6** illustrates a flow chart of method **200** utilized by bank account management device **10** for the modification of bank account data file **12**. In the exemplary embodiment of the present invention illustrated in FIG. **6**, bank account data file **12** may be understood as already including an initial fund. As such, method **200** may be utilized by bank account management device **10** for the modification of bank account data file **12** without the withdrawal, transfer, or deposit of funds to bank account data file **12**. Furthermore, method **200** is explained in the order shown below; however, the following steps may be taken in any other conceivable sequence without deviating from the scope of the present invention.

In step **201**, bank account management device **10** may receive bank account information from bank account data file **12** through input device **17**. In step **202**, bank account management device **10** may receive diversification information **11**, such as user risk **14** or guideline factor **15**.

In step **203**, bank account management device **10** determines if modification of bank account data file **12** would enhance wealth increase or maintenance. In exemplary embodiments, bank account management device **10** may utilize diversification information **11** in an optimization algorithm to determine if changes to bank account data file **12** would increase wealth or better maintain wealth based upon diversification information **11**. Should bank account management device **10** determine that no modification to bank account data file **12** is necessary, i.e. the fund distribution in bank account data file **12** best enhances or maintains wealth according to diversification information **11**, or in other embodiments user risk **14**, then in step **204** bank account management device **10** does not modify bank account data file **12**. If, however, bank account management device **10** determines that modification to bank account data file **12** will enhance or maintain wealth better than the fund distribution stored in bank account data file **12**, then bank account management device **10** may proceed to step **205**.

In step **204**, bank account management device **10** will not modify bank account data file **12**. As a result, bank account management device **10** may discontinue analysis of bank account data file **12** until method **200**, or some other method, is started again. In an alternative embodiment, output device **19** may output selected currency information **16** and a message communicating that fund redistribution will not occur.

In step **205**, bank account management device **10** determines one or more selected currencies for the optimization of initial funds stored in bank account data file **12**. Processor **18** may utilize diversification information **11** and fund information from bank account data file **12** prior to optimization for calculation of an optimized distribution of funds. Once processor **18** determines the selected currencies in which funds will be invested, bank account management device **10** proceeds to step **206**.

In step **206**, bank account management device **10** calculates the amount of wealth to be invested in each of the selected currencies determined in step **205**. This calculation step may be similar or identical to step **105** in method **100**, illustrated in FIG. **5**(*b*) and previously described. Processor **18** may utilize diversification information **11** and fund information stored in bank account data file **12** prior to optimization for calculation of an optimized distribution of funds. In an alternative embodiment of the present invention, steps **205** and **206** may be performed concurrently. Once the new fund distribution has been determined, bank account management device **10** proceeds to step **207**.

In step **207**, bank account management device **10** modifies bank account data file **12** according to the optimized distribution determined in steps **205** and **206**. In an exemplary embodiment of the present invention, output device **19** may modify bank account data file **12** according to instructions relayed by processor **18**.

FIG. **7** illustrates a flow chart of method **300** utilized by bank account management device **10** for the modification of a bank account data file in response to a request to withdraw funds from bank account data file **12**. Method **300** is explained in the order shown below; however, the following steps may be taken in any other conceivable sequence without deviating from the scope of the present invention.

In step **301**, bank account management device **10** receives diversification information **11** via input device **17**, which relays diversification information **11** to processor **18**. In the present embodiment depicted in FIG. **7**, diversification information **11** comprises initial fund information **13** which comprises a request to withdraw funds from bank account data file **12**. In step **302**, bank account management device **10** checks bank account data file **12** via input device **17** to see if the requested funds from diversification information **11** are available. Processor **18** compares the fund request of diversification information **11** with the fund information stored in bank account data file **12**. In an exemplary embodiment, processor **18** may utilize currency exchange rates in order to properly calculate the total wealth available in bank account data file **12**. If the requested funds are not available, bank account management device **10** proceeds to step **303**. If the requested funds are available, bank account management device **10** proceeds to step **304**.

In step **303**, bank account management device **10** does not withdraw requested funds. As a result, bank account management device **10** does not modify bank account data file **12**, and in some embodiments of the present invention, bank account management device **10** outputs selected currency information **16** via output device **19**, comprising a message detailing inadequate funds for compliance with the withdrawal request.

In step **304**, bank account management device **10** withdraws the funds requested in diversification information **11** from bank account data file **12**. In exemplary embodiments, bank account management device **10** may output selected currency information **16** via output device **19**. In such embodiments, selected currency information **16** may comprise information or fund data regarding the withdrawn funds such that an external device, such as an ATM, may output physical currency to the user. Alternatively, funds may be electronically transferred via output device **19** to an external device, such as another bank account. Bank account management device **10** may then proceed to step **305**.

In step **305**, bank account management device **10** determines one or more selected currencies for an optimized currency distribution for the remaining funds in bank account data file **12**, according to diversification information **11** and bank account information from bank account data file **12**. Because funds were withdrawn from bank account data file **12**, processor **18** may utilize diversification information **11** to adjust bank account data file **12** prior to its determination of

the optimal currencies for the increase or maintenance of wealth. Once currencies are selected, bank account management device **10** may proceed to step **306**.

In step **306**, bank account management device **10** determines the amount of wealth to be invested in each of the selected currencies determined in step **305**. This calculation step may be similar or identical to step **105** in method **100**, illustrated in FIG. **5**(*b*) and previously described. Processor **18** may utilize diversification information **11** and bank account data file **12** for calculation of an optimized distribution of funds. In an alternative embodiment of the present invention, steps **305** and **306** may be performed concurrently. Once the new fund distribution ahs been determined, bank account management device **10** proceeds to step **307**.

In step **307**, bank account management device **10** modifies bank account data file **12** according to the optimized currency distribution determined in steps **305** and **306**. In an exemplary embodiment of the present invention, output device **19** may modify bank account data file **12** according to instructions relayed by processor **18**. In other embodiments of the present invention, output device **19** may output selected currency information **16**, detailing modifications made to bank account data file **12**, via output device **19**.

In alternative embodiments of the present invention, bank account management device **10** may modify bank account data file **12** simultaneously or directly after step **304**, the withdrawal of funds via output device **19**. In such embodiments, bank account data file **12** may be modified to reflect the withdrawn funds, outputted as selected currency information **16**. Further, following the modification of bank account data file **12**, bank account management device **10** may then proceed to steps **305** and **306**, in order to properly balance and distribute the funds in bank account data file **12** according to diversification information **11**.

A system and method for bank account management and currency investment has been described. The foregoing description of the various exemplary embodiments of the invention has been presented for the purposes of illustration and disclosure. It is not intended to be exhaustive or to limit the invention to the precise form disclosed. Many modifications and variations are possible in light of the above teaching. It is intended that the scope of the invention not be limited by this detailed description, but by the claims and the equivalents to the claims.

What is claimed is:

1. A device for a bank account management, comprising:
an input device adapted to receive information related to a diversification of a first fund of a user; and
a processor adapted to:
calculate a distribution of the first fund comprising one or more selected currencies, wherein the distribution of the first fund is based upon the diversification information;
convert the first fund from a first currency into a converted fund comprising one or more selected currencies based upon the calculated distribution; and
record information about the converted fund in a data file for the bank account;
wherein the calculation of the distribution of the first fund comprises:
calculating a percentage difference in an exchange rate between the first currency and each of the one or more selected currencies over a first time period;
calculating one or more ratio values by dividing a percentage difference in exchange rates for each of the one or more selected currencies by a largest percentage difference of an exchange rate over the first time period; and
calculating a normalized share for each of the one or more ratio values by:
adding each of the one or more ratio values together to equal a ratio value set; and
dividing each of the one or more ratio values by the ratio value set.

2. The device of claim **1**, wherein a diversification information comprises a guideline factor for a calculation and distribution of the first funds.

3. The device of claim **2**, wherein the guideline factor comprises a user risk factor.

4. The device of claim **2**, wherein the guideline factor comprises a rate of yield factor.

5. The device of claim **2**, wherein the guideline factor comprises a currency efficiency rate factor.

6. The device of claim **2**, wherein the guideline factor comprises currency exchange rate data.

7. The device of claim **2**, wherein the guideline factor comprises:
gross domestic product of a nation.

8. The device of claim **1**, wherein information related to the diversification comprises receiving information related to the first fund.

9. The device of claim **1**, wherein information related to the diversification comprises receiving information related to the selected currency.

10. The device of claim **9**, wherein the selected currency comprises the first currency.

11. The device of claim **1**, wherein the input device is further adapted to receive a request to open the bank account.

12. The device of claim **1**, wherein the processor is further adapted to create a data file for the bank account.

13. The device of claim **8**, wherein information related to the first fund in an initial currency comprises a fund deposit to the bank account.

14. The device of claim **8**, wherein information related to the first fund in an initial currency comprises a fund withdrawal from the bank account.

15. A method for managing a bank account, comprising:
receiving information by an input device related to a diversification of a first fund of a user;
calculating a distribution by a processor of the first fund comprising one or more selected currencies, wherein the distribution of the first fund is based upon the diversification information;
converting the first fund by the processor from a first currency into a converted fund comprising the selected currencies based upon the calculated distribution; and
recording information by the processor about the converted fund in a data file for the bank accounts;
wherein the calculation of the distribution of the first fund comprises:
calculating a percentage difference in an exchange rate between the first currency and each of the one or more selected currencies over a first time period;
calculating one or more ratio values by dividing a percentage difference in exchange rates for each of the one or more selected currencies by a largest percentage difference of an exchange rate over the first time period; and
calculating a normalized share for each of the one or more ratio values by:
adding each of the one or more ratio values together to equal a ratio value set; and

dividing each of the one or more ratio values by the ratio value set.

16. The method of claim **15**, wherein a diversification information comprises a guideline factor for a calculation and distribution of the first funds.

17. The method of claim **16**, wherein the guideline factor comprises a user risk factor.

18. The method of claim **16**, wherein the guideline factor comprises a rate of yield factor.

19. The method of claim **16**, wherein the guideline factor comprises a currency efficiency rate factor.

20. The method of claim **16**, wherein the guideline factor comprises currency exchange rate data.

21. The method of claim **16**, wherein the guideline factor comprises:

gross domestic product of a nation.

22. The method of claim **15**, wherein information related to the diversification comprises receiving information related to the first fund.

23. The method of claim **15**, wherein information related to the diversification comprises receiving information related to the selected currency.

24. The method of claim **16**, wherein the selected currency comprises the first currency.

25. The method of claim **15**, further comprising receiving a request to open the bank account.

26. The method of claim **15**, further comprising creating a data file for the bank account.

27. The method of claim **22** wherein information related to the first fund comprises a fund deposit to the bank account.

28. The method of claim **22** wherein information related to the first fund comprises a fund withdrawal from the bank account.

29. A non-transitory computer-readable medium including codes extractable by a computer, adapted to:

receive information related to a diversification of a first fund of a user;

calculate a distribution of the first fund comprising one or more selected currencies based upon the diversification information;

convert the first fund from an first currency into a converted fund comprising the one or more selected currencies based upon the calculated distribution; and

record information about the converted fund in a data file for a bank account;

wherein to calculate the distribution of the first fund comprises:

calculating a percentage difference in an exchange rate between the first currency and each of the one or more selected currencies over a first time period;

calculating one or more ratio values by dividing a percentage difference in exchange rates for each of the one or more selected currencies by a largest percentage difference of an exchange rate over the first time period; and

calculating a normalized share for each of the one or more ratio values by:

adding each of the one or more ratio values together to equal a ratio value set; and

dividing each of the one or more ratio values by the ratio value set.

30. The device of claim **2**, wherein the guideline factor comprises one or more quarterly financial reports.

31. The method of claim **16**, wherein the guideline factor comprises one or more quarterly financial reports.

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