

```
# Finance Growth Co-Pilot - API Documentation

## API Overview

The Finance Growth Co-Pilot provides a comprehensive REST API for SME financial management with AI-powered insights and automation capabilities.

**Base URL**: `http://localhost:8000/api`

## Authentication

All API endpoints (except registration and login) require JWT authentication.

### Headers
```
Authorization: Bearer <access_token>
Content-Type: application/json
```

## Financial Management APIs

### Dashboard Data

#### Get Dashboard Overview
```http
GET /api/finance/dashboard/
```

**Query Parameters:**
- `business_id` (optional): Filter by specific business
- `period` (optional): Time period in days (default: 30)

**Response:**
```json
{
 "summary": {
 "total_income": "50000.00",
 "total_expenses": "35000.00",
 "net_profit": "15000.00",
 "currency": "KES"
 },
 "recent_transactions": [...],
 "budgets": [...],
 "overdue_invoices": [...],
 "credit_score": {...},
}
```

```

 "businesses": [...]
 }
 ...

Transaction Management

List Transactions
```http
GET /api/finance/transactions/
```

Query Parameters:
- `business_id` (optional): Filter by business
- `transaction_type` (optional): income, expense, transfer, etc.
- `category` (optional): Transaction category
- `start_date` (optional): Start date filter
- `end_date` (optional): End date filter

Response:
```json
{
  "count": 25,
  "next": null,
  "previous": null,
  "results": [
    {
      "id": "uuid",
      "business": "business_id",
      "amount": "1000.00",
      "currency": "KES",
      "transaction_type": "income",
      "payment_method": "mpesa",
      "status": "completed",
      "description": "Sales revenue",
      "category": "Sales",
      "transaction_date": "2024-01-15T10:30:00Z",
      "created_at": "2024-01-15T10:30:00Z"
    }
  ]
}
```

Create Transaction
```http
POST /api/finance/transactions/

```

```
...

**Request Body:**
```json
{
 "business": "business_id",
 "amount": "1000.00",
 "currency": "KES",
 "transaction_type": "income",
 "payment_method": "mpesa",
 "description": "Sales revenue",
 "category": "Sales",
 "supplier": "Customer Name",
 "transaction_date": "2024-01-15T10:30:00Z"
}
```

#### Transaction Analytics
```http
GET /api/finance/transactions/analytics/
```

**Query Parameters:**
- `business_id` (optional): Filter by business
- `period` (optional): Analysis period in days (default: 30)

**Response:**
```json
{
 "period": "30 days",
 "total_transactions": 25,
 "total_amount": "50000.00",
 "average_transaction": "2000.00",
 "income_count": 15,
 "expense_count": 10,
 "top_categories": [
 {"category": "Sales", "count": 8, "total": "25000.00"}
],
 "payment_methods": [
 {"payment_method": "mpesa", "count": 12, "total": "30000.00"}
],
 "currency": "KES"
}
```
...
```

Financial Summary

```http

GET /api/finance/transactions/summary/

```

****Response:****

```json

```
{
 "total_income": "50000.00",
 "total_expenses": "35000.00",
 "net_profit": "15000.00",
 "cash_flow": "15000.00",
 "outstanding_invoices": "10000.00",
 "overdue_invoices": "2000.00",
 "budget_utilization": 75.5,
 "credit_score": 750,
 "currency": "KES"
}
```

```

Invoice Management

List Invoices

```http

GET /api/finance/invoices/

```

****Query Parameters:****

- `business_id` (optional): Filter by business
- `status` (optional): draft, sent, paid, overdue, cancelled
- `customer_name` (optional): Filter by customer

Create Invoice

```http

POST /api/finance/invoices/

```

****Request Body:****

```json

```
{
 "business": "business_id",
 "invoice_number": "INV-001",
 "customer_name": "Customer Name",
 "customer_email": "customer@example.com",
 "customer_phone": "+254700000000",
}
```

```
"subtotal": "1000.00",
"tax_amount": "160.00",
"total_amount": "1160.00",
"currency": "KES",
"issue_date": "2024-01-15",
"due_date": "2024-01-30",
"notes": "Payment terms: 30 days"
}
...

Send Invoice
```http
POST /api/finance/invoices/{id}/send_invoice/
...

#### Mark Invoice as Paid
```http
POST /api/finance/invoices/{id}/mark_paid/
...

Budget Management

List Budgets
```http
GET /api/finance/budgets/
...

#### Create Budget
```http
POST /api/finance/budgets/
...

Request Body:
```json
{
  "business": "business_id",
  "name": "Marketing Budget",
  "description": "Monthly marketing expenses",
  "budget_type": "monthly",
  "category": "Marketing",
  "budgeted_amount": "5000.00",
  "currency": "KES",
  "start_date": "2024-01-01",
  "end_date": "2024-01-31",
  "alert_threshold": 80.0
}
```

```
}
...

#### Budget Analytics
```http
GET /api/finance/budgets/analytics/
```

**Response:**
```json
{
 "total_budgets": 5,
 "active_budgets": 4,
 "total_budgeted": "20000.00",
 "total_spent": "15000.00",
 "over_budget_count": 1,
 "near_limit_count": 2,
 "budget_utilization": 75.0,
 "currency": "KES"
}
```

## AI-Powered Features

### Financial Forecasting

#### Generate Revenue Forecast
```http
POST /api/finance/forecasts/generate_forecast/
```

**Request Body:**
```json
{
 "forecast_type": "revenue",
 "business_id": "business_id"
}
```

**Response:**
```json
{
 "forecast_id": "uuid",
 "forecast_data": {
 "monthly_forecast": [5000, 5500, 6000, 6500, 7000, 7500],

```

```

 "confidence": 85.0,
 "trend": "growing",
 "growth_rate": 2.0
 },
 "confidence_score": 85.0,
 "recommendations": [
 "Revenue is projected to grow - consider expanding capacity",
 "Plan for increased working capital needs"
]
}
```

```

Credit Scoring

Calculate Credit Score

```

```http
POST /api/finance/credit-scores/calculate_score/
```

```

Request Body:

```

```json
{
 "business_id": "business_id"
}
```

```

Response:

```

```json
{
 "credit_score_id": "uuid",
 "score": 750,
 "score_category": "Good",
 "factors": {
 "payment_history": "Payment history: 85.0%",
 "credit_utilization": "Credit utilization: 70.0%",
 "business_age": "Business age: 80.0%",
 "revenue_stability": "Revenue stability: 75.0%",
 "debt_to_income": "Debt-to-income: 65.0%"
 },
 "recommendations": [
 "Maintain consistent payment history",
 "Consider reducing credit utilization",
 "Continue building business credit"
]
}
```

```

```
```\n\n## Automation APIs\n\n### M-Pesa Reconciliation\n```http\nPOST /api/finance/automation/mpesa-reconcile/\n```\n
```

**\*\*Request Body:\*\***

```
```json\n{\n  "business_id": "business_id",\n  "date_range": {\n    "start_date": "2024-01-01",\n    "end_date": "2024-01-31"\n  }\n}\n```\n
```

```
### Invoice Reminders\n```http\nPOST /api/finance/automation/send-reminder/\n```\n
```

****Request Body:****

```
```json\n{\n  "invoice_id": "invoice_id",\n  "reminder_type": "first"\n}\n```\n
```

```
Budget Alerts\n```http\nPOST /api/finance/automation/budget-alert/\n```\n
```

**\*\*Request Body:\*\***

```
```json\n{\n  "budget_id": "budget_id",\n  "alert_type": "threshold_reached"\n}\n```\n
```



```
## Market Intelligence APIs

### Market Analysis
```http
GET /api/finance/market-intelligence/
```

**Query Parameters:**
- `industry`: Industry to analyze
- `location`: Location (default: Kenya)

### Supplier Analysis
```http
GET /api/finance/supplier-analysis/
```

**Query Parameters:**
- `supplier_name`: Supplier to analyze
- `product_category`: Product category

### Competitor Analysis
```http
GET /api/finance/competitor-analysis/
```

**Query Parameters:**
- `business_name`: Your business name
- `industry`: Industry sector

## User Management APIs

### User Registration
```http
POST /api/users/register/
```

**Request Body:**
```json
{
 "username": "johndoe",
 "email": "john@example.com",
 "password": "securepassword",
 "first_name": "John",
 "last_name": "Doe"
}
```

```
}
```

### User Login
```http
POST /api/auth/token/
```

**Request Body:**
```json
{
 "username": "johndoe",
 "password": "securepassword"
}
```

**Response:**
```json
{
 "access": "eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9...",
 "refresh": "eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9..."
}
```

### User Profile
```http
GET /api/users/profile/
```

**Response:**
```json
{
 "id": 1,
 "user": {
 "id": 1,
 "username": "johndoe",
 "email": "john@example.com",
 "first_name": "John",
 "last_name": "Doe"
 },
 "phone_number": "+254700000000",
 "job_title": "CEO",
 "company": "My Business",
 "industry": "Technology",
 "country": "Kenya",
}
```

```

 "city": "Nairobi",
 "risk_tolerance": "moderate"
 }
 ...

Business Management
```http
GET /api/users/businesses/
POST /api/users/businesses/
GET /api/users/businesses/{id}/
PUT /api/users/businesses/{id}/
DELETE /api/users/businesses/{id}/
```

Frontend Integration

Vue.js Components

The frontend includes these main components:

1. Dashboard.vue: Main financial dashboard
2. Login.vue: User authentication
3. Register.vue: User registration
4. Navigation.vue: App navigation
5. TransactionList.vue: Transaction management
6. InvoiceManager.vue: Invoice management
7. BudgetTracker.vue: Budget tracking
8. ForecastView.vue: AI forecasting display

API Integration Example

```javascript
// Fetch dashboard data
const fetchDashboardData = async () => {
  const token = localStorage.getItem('access_token')
  const response = await fetch('http://localhost:8000/api/finance/dashboard/', {
    headers: {
      'Authorization': `Bearer ${token}`
    }
  })
  return await response.json()
}

// Create transaction
const createTransaction = async (transactionData) => {

```

```

const token = localStorage.getItem('access_token')
const response = await fetch('http://localhost:8000/api/finance/transactions/',
{
  method: 'POST',
  headers: {
    'Authorization': `Bearer ${token}`,
    'Content-Type': 'application/json'
  },
  body: JSON.stringify(transactionData)
})
return await response.json()
}
...

```

🛡️ Error Handling

Standard Error Response

```

```json
{
 "error": "Error message",
 "details": "Detailed error information",
 "code": "ERROR_CODE"
}
...

```

### ### Common Error Codes

- `400`: Bad Request
- `401`: Unauthorized
- `403`: Forbidden
- `404`: Not Found
- `500`: Internal Server Error

## ## Rate Limiting

- **Authentication**: 5 requests per minute
- **Financial APIs**: 100 requests per hour
- **AI Services**: 20 requests per hour
- **General APIs**: 1000 requests per hour

## ## Testing

### ### Test Data

Use the provided test data to verify API functionality:

```

```json

```

```

{
  "test_user": {
    "username": "testuser",
    "password": "testpass123",
    "email": "test@example.com"
  },
  "test_business": {
    "legal_name": "Test Business",
    "industry": "Technology"
  }
}
...

### API Testing
```bash
Test authentication
curl -X POST http://localhost:8000/api/auth/token/ \
 -H "Content-Type: application/json" \
 -d '{"username": "testuser", "password": "testpass123"}'

Test dashboard
curl -X GET http://localhost:8000/api/finance/dashboard/ \
 -H "Authorization: Bearer <access_token>"
...

SDKs and Libraries

Python SDK
```python
from finance_growth_copilot import FinanceClient

client = FinanceClient(
    base_url="http://localhost:8000/api",
    access_token="your_access_token"
)

# Get dashboard data
dashboard = client.get_dashboard()

# Create transaction
transaction = client.create_transaction({
    "amount": "1000.00",
    "transaction_type": "income",
    "description": "Sales revenue"
})

```

```
```  

JavaScript SDK
```javascript  
import { FinanceClient } from 'finance-growth-copilot-js'  
  
const client = new FinanceClient({  
  baseUrl: 'http://localhost:8000/api',  
  accessToken: 'your_access_token'  
})  
  
// Get dashboard data  
const dashboard = await client.getDashboard()  
  
// Create transaction  
const transaction = await client.createTransaction({  
  amount: '1000.00',  
  transaction_type: 'income',  
  description: 'Sales revenue'  
})  
```  

```