

# Woodseer Dividend Forecasting

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Push API Documentation Version 2.4

September 2019

*18 pages including examples.*

*see also: Woodseer API Documentation 2.4*

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[www.woodseer.global](http://www.woodseer.global)

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[help@woodseer.global](mailto:help@woodseer.global)

## Background

Woodseer is a web-based tool which predicts forward dividends (estimates of dividend payments in the future).

Using a combination of algorithmic forecasting with analyst input, Woodseer forecasts dividends for over 20,000 securities globally.

Specific estimates are provided for dividend dates and amounts, at least two years into the future.

The data set is updated every day, throughout the day with a bulk data load occurring at approximately 1am UTC, Tuesday through Saturday.

Woodseer coverage is constantly expanding. The exact details of the securities to which you have access is available under your login on the [www.woodseer.global](http://www.woodseer.global) site (see: [Access](#)).

Historical data back to January 1st 2012 is included and made available with the data including all Special, Interest and Capital Gains disbursements.

However due to their unpredictable nature, future projections for Special, Interest and Capital Gains disbursements are not included.

The data is available through the following mechanisms:

1. RESTful API
2. **Push API: real time updates** (*this document*)
3. Daily or hourly flat-file extract (FTP)
4. Web-based UI
5. A combination of the above

## Data Definitions and Structure

### Companies & Securities

A publicly-traded company can have multiple listed securities on different exchanges

e.g. *Ordinary Shares, Class B, ADR, Cdear, etc.*

Each security can be listed on one or more exchange (fungible listings), each potentially with different ticker and ISIN codes.

Woodseer provides ticker and identifier information for the primary and secondary listings.

#### FIELD DEFINITIONS [see full details in example response](#)

**Securities** represent different classes of shares. A **Security** has an ID, name, ISIN and date last updated.

Each **Security** has an associated **Company** with a name, ID and possibly a dividend policy (this may be omitted if data is not available).

Additionally each **Security** will have one primary **Listing**, representing the **Security** listed on its primary **Exchange** and zero or more secondary listings. Each **Listing** has an ID, ticker (EPIC), exchange and country.

Each **Security** also has zero or more **Dividends**, usually with an announced amount and currency. Each **Dividend** has one or more **Disbursements**, which represent how shareholders may receive that dividend.

A **Disbursement** may represent a cash payment in a particular currency, a stock (Scrip) dividend or a return of capital.

Securities also have zero or more **Date Rules**, which determine the basis for which our algorithmic forecasts are made. Each rule relates to a particular dividend frequency, position and date field (e.g. quarter 2 record date). The rule is provided as a text description with a confidence score, determined by the recency and regularity of earlier dividends matching the rule.

## EXAMPLE 1

In the simplest case, a public **Company** (*Urban Exposure Plc*) will list on one **Exchange** (*XLON - London Stock Exchange*), so they will have one **Security** (*Ordinary Shares*) with one **Listing** (*Ordinary Shares on XLON*).

## EXAMPLE 2

*Royal Dutch Shell* is a company incorporated in the United Kingdom.

It has Ordinary Class A and Class B shares, each traded on more than 10 exchanges globally, primarily on the London Stock Exchange.

The *Royal Dutch Shell* 'A' share had a dividend go ex on 10th August 2017 with an option to receive payment in Euros or Pounds, as well as 1 share for every 59 shares held through the Scrip programme.

In rare cases the dividend is declared in currency and is paid in a different currency. For example *Rio Tinto Ordinary Shares* the dividend is declared in USD but only paid in AUD and GBP.

Woodseer differentiates these amounts by showing the dividend amount and currency in USD with 2 disbursements of that dividend in AUD and GBP.

## Push API

When a relevant security is updated within Woodseer this will trigger a call to your system containing the full detail of the updated security including all associated dividends.

All associated data for the security is sent regardless of which dividend has changed, meaning the complete set of dividend history and forecasts are transmitted with each update.

This call is an HTTP POST to a predetermined URL using HTTP Token Authentication.

The body of the request contains a JSON object with one key “securities” which contains an array of one or more updated security and associated company, listing, dividend and date rules. [See the Sample Security JSON below.](#)

**Note to developers:** JSON responses may be extended at a later date to provide additional data fields. Clients should be implemented defensively to allow for and ignore new fields beyond those mentioned in this document in future.

Establishing your connection with Woodseer involves your account being provisioned with:

- a URL endpoint (defined by you) to receive the HTTP requests, and
- a token to be included with each request for authentication.

This token is separate and should not be confused with the token used to query our API (if this service is available in your account).

If an error response is received from your server (status is not 2XX) or the connection fails (times out or other connectivity problem), Woodseer attempts to resend the request 10 minutes later.

Up to 20 request attempts are made before the system permanently fails the request.

## Access

Your account will be configured with access to one or more country, region, index or exchange, or with full global access.

Any update to a security to which your account has access will result in a push request containing the updated security data as shown in the [Sample Security JSON](#) below.

The access associated with your account can be viewed through your Woodseer login.

## Technical Notes

1. All dates are expressed in ISO8601 extended format (i.e. YYYY-MM-DD).
2. The format for updates since a given timestamp are expressed in ISO8601 combined date and time format, e.g.: 2007-04-05T14:30Z (the date and time joined by the letter 'T'). The time should finish "Z" representing UTC.
3. All countries are returned as 2 character ISO 3166-1 (2 alpha) code: [https://en.wikipedia.org/wiki/ISO\\_3166-1\\_alpha-2](https://en.wikipedia.org/wiki/ISO_3166-1_alpha-2)
4. All dividend and disbursement amounts have an associated currency and values are provided in the major currency with the exception of GBX, e.g.
  - a. *amount: 0.5, currency: USD* is 50 US cents (\$USD 0.50)
  - b. *amount: 0.5, currency: GBX* is half a British penny (£GBP 0.005)
5. The dividend currency is the 3 character ISO 4217 code. More details and the full list is here: [https://en.wikipedia.org/wiki/ISO\\_4217](https://en.wikipedia.org/wiki/ISO_4217).
6. The currency can change between dividend payments.

## Sample Security JSON

```
{
  "securities": [
    {
      "id": 80928,
      "name": "Ordinary Shares",
      "isin": "NZFBUE0001S0",
      "updated": "2018-11-17T00:32:52Z",
      "reviewed": "2019-06-14T16:44:18Z",
      "analyst_flag": "NP",
      "company": {
        "id": 60020,
        "name": "Fletcher Building Limited",
        "dividend_policy": {
          "text": "Our policy is to grow..."
          "entered": "2018-09-14T14:50:05Z"
        }
      }
    },
    "primary_listing": {
      "id": 71526,
      "country": "NZ",
      "exchange": "NZSE",
      "ticker": "FBU"
    },
    "secondary_listings": [
      {
        "id": 185627,
        "country": "AU",
        "exchange": "XASX",
        "ticker": "FBU"
      }
    ],
    ...
  ],
  "dividends": [
    {
      "id": 42201526,
      "fiscal_year": 2012,
      "declaration_date": "2012-08-14",
      "ex_div_date": "2012-12-29",
      "record_date": "2012-12-30",
      "pay_date": "2012-12-29",
      "period_end_date": "2012-09-30",
      "year_end_date": "2012-12-31",
      "status": "DEC",
      "frequency": "BNL",
      "flag": "I",
      "amount": "1.07",
      "currency": "NZD",
      "disbursements": [

```

```
{
  {
    "type": "C",
    "default": true,
    "amount": "1.07",
    "currency": "NZD"
  },
  ...
]
},
...
]
},
"date_rules": [
  {
    "frequency": "BNL",
    "position": 1,
    "field": "DEC",
    "rule": "10 business days before the Record Date",
    "confidence": 87
  }, ...
]
}
]
}
]
}
```



## Security Fields

This table describes the possible fields for each security.

Note: Fields marked with an asterisk(\*) are included only if there is a value present.

| Name                | Type      | Description                                | Notes   |
|---------------------|-----------|--|---|
| id                  | Integer   | Woodseer identifier                        |   |
| name                | String    | Name of security                           | e.g. "Ordinary Shares"  |
| isin                | String    | International Securities Identifier Number | Subject to change   |
| analyst_flag        | String    | Flag set by the analyst                    | See Analyst Flag definitions table  |
| reviewed            | Timestamp | When the analyst flag was set or confirmed | This may be set if the analyst has assessed the <i>analyst_flag</i> have no value |
| updated             | Timestamp | Denotes last change time of the security   | Applies to the last change to the security, a dividend or disbursement            |
| company             | Object    | Associated company data                    | See the Company Fields table  |
| primary_listing     | Object    | Associated primary listing data            | See the Listing Fields table  |
| secondary_listings* | Array     | Associated secondary listing data          | See the Listing Fields table  |
| dividends           | Array     | Associated dividends data                  | See the Dividend Fields table   |
| date_rules*         | Array     | Associated date rules data                 | See the Date Rule Fields table  |

## Company Fields

This table describes the possible fields for each company.

Note: Fields marked with an asterisk(\*) are included only if there is a value present.

| Name             | Type    | Description                     | Notes   |
|------------------|---------|---------------------------------|---|
| id               | Integer | Woodseer identifier             |   |
| name             | String  | Name of the company             | e.g. "Apple Inc"  |
| dividend_policy* | Object  | Associated dividend policy data | Where available and enabled. See the Dividend Policy Fields table |

## Dividend Policy Fields

For companies which have a dividend policy available and this information has been made enabled on your account.

| Name    | Type      | Description                                   | Notes |
|---------|-----------|---|-------|
| text    | String    | The company stated dividend policy            |       |
| entered | Timestamp | Indicates when the policy was set in Woodseer |       |

## Listing Fields

Primary listing data for each security is included.

| Name     | Type      | Description                                 | Notes                                    |
|----------|-----------|---|--|
| id       | Integer   | Woodseer identifier                         |  |
| ticker   | String    | Exchange level identifier                   | Subject to change                        |
| status   | Character | Listing status                              | <b>A:</b> Active, <b>D:</b> Delisted     |
| exchange | String    | Stock Exchange Market Identifier Code (MIC) | See Endpoint: Stock Exchanges code field |
| country  | String    | 2 letter exchange country code              |  |

## Analyst Notes Fields

One or more notes may be entered in Woodseer against a security providing commentary of the security and associated dividends

| Name    | Type      | Description                                 | Notes |
|---------|-----------|---|-------|
| note    | String    | The note text                               |       |
| entered | Timestamp | Indicates when the note was set in Woodseer |       |

## Dividend Fields

Notes:

1. Fields marked with an asterisk(\*) are included only if there is a value present.
2. Dividends are mutable, meaning when a dividend transitions from being status Estimate to status Declared the ID will be maintained and the status field will be updated.
3. Dividends may be removed, for example if an estimate exists which is subsequently cut.
4. All current dividends associated with a security are included so you can be sure you have the complete list of dividends with each update.

| Name             | Type    | Description                                      | Notes   |
|------------------|---------|--|---|
| id               | Integer | Woodseer identifier                              |   |
| fiscal_year      | Integer | Fiscal year to which the dividend applies        |   |
| frequency        | String  | Dividend frequency of payment                    | See the Dividend Frequency Definitions table          |
| flag             | String  | Dividend flag                                    | See the Dividend Flag Definitions table               |
| declaration_date | Date    | Date this dividend was declared                  |   |
| ex_div_date      | Date    | Date this dividend went ex                       |   |
| record_date      | Date    | Dividend record date                             |   |
| pay_date         | Date    | Date dividend is paid                            |   |
| period_end_date* | Date    | Last date of the period this dividend applies to | e.g. the end of quarter date for a quarterly dividend |
| year_end_date*   | Date    | Last date of the fiscal year                     |   |

|               |         | this dividend applies to   |   |
|---------------|---------|--|---|
| status        | String  | Current dividend status  | See the Dividend Status Definitions table |
| amount*       | Numeric | Cash amount of the dividend  | Includes a decimal amount                 |
| currency*     | String  | Currency code  | 3 character currency code                 |
| disbursements | Array   | The collection of possible means this dividend may be paid to shareholders | See the Disbursement Fields table         |

## Disbursement Fields

This table describes the possible fields for each disbursement.

Note fields which apply to *Cash* includes Cash, Cash & Stock, Capital Repayment, PID, Non-PID and Installment and Other types.

Fields which apply to *Stock* disbursements includes Stock/Scrip and Cash & Stock types.

| Name         | Type    | Description                                   | Applies To | Notes   |
|--------------|---------|---|------------|---|
| type         | String  | Disbursement Type                             | All        | See the Disbursement Type Definition table above        |
| default      | Boolean | True if this is the default disbursement      | All        | Only one disbursement will have this set as true        |
| amount       | Numeric | Disbursement amount                           | Cash       | Includes a decimal amount                               |
| currency     | String  | Currency code                                 | Cash       | 3 character currency code                               |
| num_held     | Numeric | Number of shares held                         | Stock      | Includes a decimal amount                               |
| num_received | Numeric | Number of shares received per <i>num_held</i> | Stock      | Includes a decimal amount                               |
| fx_date      | Date    | Date of currency exchange                     | Cash       | For dividends declared and paid in different currencies |

## Analyst Flag Definitions

Woodseer analysts may set a flag on a security to provide information on the status of the security which may impact dividend forecasts.

This flag and the timestamp when the flag was set is included in the Security JSON.

| Code | Meaning              | Definition   |
|------|----------------------|--|
| AM   | Acquired/Merged      | The company has been subsumed into another legal entity and we are forecasting an end to this company's dividends.   |
| TP   | Takeover Progress    | In<br>The company is under offer and may be acquired and delisted. Forecasts will remain until until the takeover is confirmed but clients should be aware the forecasts will be removed if the takeover proceeds. |
| CT   | Ceased Trading       | The security has been delisted and we are forecasting no further dividends.  |
| DC   | Dividend Cut         | The dividend has recently been cut to zero so we won't forecast payments until we receive an indication of the resumption of dividend payments.  |
| NP   | No Pattern           | The dividend history has no discernible pattern so our forecasts are based on the latest declared dividends, and we have a low conviction on either our forecast dates or amounts, or both.                        |
| IH   | Insufficient History | The security has not yet declared a complete year of dividends, so our conviction in the accuracy of the forecast dates is low. This flag is removed once we receive a recent complete year of declarations.       |
| ND   | No Dividends         | This security does not pay dividends. We will not make a forecast until we receive an indication of the intention to begin paying dividends or a maiden dividend declaration.                                      |

*Note: possible values may be added in future.*

## Dividend Status Definitions

| Code | Meaning   | Definition   |
|------|-----------|--|
| EST  | Estimate  | The dividend dates and amount are estimated and not yet certain                  |
| DEC  | Declared  | The dividend has been officially announced but not yet paid                      |
| PAY  | Paid      | The dividend has been paid and has past  |
| CAN  | Cancelled | The dividend has been cancelled by the issuer after being declared               |
| DEL  | Deleted   | The dividend has been removed from the system because it was entered erroneously |

## Dividend Frequency Definitions

The dividend frequency indicates how many dividends were/are expected in the fiscal year:

| Code | Meaning     | Definition   |
|------|-------------|--|
| WEK  | Weekly      | 52 times per year  |
| MTH  | Monthly     | 12 times per year  |
| BIM  | Bimonthly   | 6 times per year (once every 2 months)   |
| QTR  | Quarterly   | 4 times per year (once every 3 months)   |
| TNL  | Triannually | 3 times per year (once every 4 months)   |
| BNL  | Biannually  | Twice per year (once every 6 months)   |
| ANL  | Annually    | Once per year  |
| IRG  | Irregularly | No pattern. All Special dividends are by definition <b>IRG</b>                     |
| HIS  | Historical  | Used for recording pre-2010 dividend information. An aggregate of the annual total |
| UKN  | Unknown     | The pattern is not known   |

## Dividend Flag Definitions

| Code | Meaning           | Definition   |
|------|-------------------|--|
| F    | Final             | The final (regular) dividend payment of the year (note: occasionally a special dividend comes after a final)   |
| I    | Interim           | A regular dividend which is not a final  |
| S    | Special           | An irregular dividend outside the usual payment pattern  |
| N    | Interest          | An interest payment made by some securities.   |
| G    | Capital Gain      | Gains derived from the sale of securities within a mutual fund or ETF  |
| R    | Return of Capital | A return of capital is similar to a special dividend with the important exception of not being taxed as income. Returns of capital are not made from profits generated by the business which is the case for ordinary and special dividends. |
| U    | Supplementary     | An additional payment split out from the main dividend   |

## Disbursement Type Definitions

| Code | Meaning           | Definition   |
|------|-------------------|--|
| C    | Cash              | The dividend payment is in cash. There will be a currency associated.  |
| S    | Stock/Scrip       | The dividend is a stock allocation. There will be a ratio of shares received for shares held.                                |
| B    | Both Cash & Stock | A combination of cash and stock, there will be a currency for the cash portion and a ratio for the stock allocation portion. |
| R    | Capital Repayment | A return of capital (paid out of capital rather than earnings).  |
| I    | Installment       | Partial cash payment. A single dividend may be paid out in multiple installment disbursements.                               |
| P    | PID Amount        | A cash payment subject to Property Income Distribution tax.  |
| N    | Non-PID Amount    | A cash payment not subject to Property Income Distribution tax.  |
| L    | Nil Dividend      | A zero-amount dividend to maintain the pattern.  |
| O    | Other             | Another disbursement type not covered.   |

## Date Rules

Each security may have a number of date rules associated which Woodseer uses to forecast future dividend declaration, ex, record and pay dates.

Each rule is associated with one frequency, position and date field combination.

e.g. a company which pays quarterly dividends would have 16 date rules (4 quarters x 4 date fields).

| Name       | Type    | Description  | Notes  |
|------------|---------|--|--|
| frequency  | String  | Dividend frequency or type code the rule applies to  | See the Date Rule Frequency table            |
| position   | Integer | Sequence of the dividend the rule applies to         |  |
| field      | String  | Date field the rule applies to                       | See the Date Rule Date Field table           |
| rule       | String  | Free-text description                                |  |
| confidence | Numeric | Percent confidence score in the accuracy of the rule | A percentage value including decimal amount* |

*\*the confidence is a percentage (up to 100) indicating Woodseer's confidence in the rule being correct, determined by number of dividends, number of matches, and recency of exceptions, plus some exchange-specific rules.*



## Date Rule Frequency Definitions

| Code | Meaning           | Definition  |
|------|-------------------|---|
| WEK  | Weekly            | 52 times per year   |
| MTH  | Monthly           | 12 times per year   |
| BIM  | Bimonthly         | 6 times per year (once every 2 months)  |
| QTR  | Quarterly         | 4 times per year (once every 3 months)  |
| TNL  | Triannually       | 3 times per year (once every 4 months)  |
| BNL  | Biannually        | Twice per year (once every 6 months)  |
| ANL  | Annually          | Once per year   |
| SPL  | Special           | Special dividends which are generally paid irregularly                          |
| CPG  | Capital Gain      | Gains derived from the sale of an underlying security. Usually paid irregularly |
| INT  | Interest          | An interest payment made by some securities in an undefined pattern             |
| RCP  | Return of Capital | Similar to special dividends, see note on Dividend Flag definitions             |
| SUP  | Supplementary     | An additional payment split out from the main dividend                          |
| UKN  | Unknown           | The dividend type is not known  |

## Date Rule Date Field Definitions

| Code | Meaning          |
|------|------------------|
| DEC  | Declaration date |
| XDD  | Ex-Dividend date |
| REC  | Record Date      |
| PAY  | Pay Date         |

## Sample Code

The following code sample is provided as a reference for developers to understand a possible means of receiving data from the Push API.

It is written in Ruby using a very simple Rack application to illustrate the concept and can be developed in any language.

```
require 'rack'
require 'json'

app = Proc.new do |env|
  json = JSON.load(env['rack.input'])
  security = json["securities"].first
  # retrieve the dividends array for this security
  dividends = security["dividends"]
  # iterate the dividends and write out the ex-date, currency and amount
  dividends.each do |d|
    puts "Dividend #{d['ex_div_date']} #{d['currency']} #{d['amount']}"
  end
  # respond to the HTTP request with status 204
  ['204', {'Content-Type' => 'text/html'}, []]
end

# start Rack app
Rack::Handler::WEBrick.run app
```

Note: this code sample is provided as a basic example only. Production-ready code would be expected to include error checking and exception handling.